

Bednarik, Zuzana; Unay-Gailhard, İlkey

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RESEARCH ARTICLE OPEN ACCESS

Who Stays in Rural Areas? Understanding Gender Differences in Location Decisions Among Millennials in the United States

Zuzana Bednarik¹  | İlkyay Unay-Gailhard^{2,3} 

¹North Central Regional Center for Rural Development, Department of Agricultural Economics, Purdue University, West Lafayette, Indiana, USA | ²Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle, Saale, Germany | ³Univ. Grenoble Alpes, CNRS, Sciences Po Grenoble, UGA-School of Political Studies, Pacte, Grenoble, France

Correspondence: Zuzana Bednarik (zbednari@purdue.edu)

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ABSTRACT

This study investigates the factors associated with millennials' past, current and future rural staying, and compares rural with urban stayers, with a particular focus on gender differences. It examines residential choices through three attributes of the millennial generation: proficiency in using digital tools, a strong inclination toward environmental issues, and a desire for work-life balance. Using data from the North Central Region of the United States (NCR-Stat: Baseline Survey 2022), the study employed logistic regression and independent *t*-tests for data analysis. The findings reveal that the importance of internet availability plays a shifting role in rural staying behaviour throughout millennials' life stages. Millennials who grew up in rural areas tend to place less importance on internet availability than their urban counterparts, but for those planning to remain in rural areas, a reliable internet connection becomes significantly more valuable. Prioritizing outdoor spaces is positively associated with current rural residency, while a preference for low pollution levels is linked to a higher likelihood of residing in urban areas. Higher life satisfaction is significantly associated with both past and current rural living, though rural women report lower satisfaction than men. The gender-specific analysis also indicates that millennial women place significantly more importance on internet availability, low pollution levels, and outdoor spaces than men. These findings extend existing knowledge of past, current and future staying behaviour in rural areas by focusing on a specific group of stayers and highlighting the complexity of staying behaviour and its implications for rural development.

1 | Introduction

Existing research on migration primarily focuses on identifying and analyzing the diverse factors that explain why individuals and families choose to relocate (Coulter and Scott 2015; Lei and Liu 2022). This body of work explores the motivations driving people to leave their current residence or select a specific community, region, state or nation as their new destination. Factors such as the pursuit of improved living conditions,

economic opportunities, social connections and health considerations often play a significant role in these decisions (Clark and Maas 2015; Czaika et al. 2021).

In recent years, however, there has been a growing emphasis on understanding why individuals choose to stay rather than migrate, highlighting its significance for community and regional development. Policymakers, local populations, and stakeholders are increasingly concerned with the factors that

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influence staying decisions. Emerging research now examines the interplay between the decision to move or stay and the broader concept of staying behaviour, a topic that has become especially relevant in light of declining interregional migration rates (Borjas 2006; Partridge et al. 2012; Gruber 2021).

Staying is an active and deliberate process, defined as a conscious decision by individuals to stay in their current residential location (Stockdale et al. 2018). The concept of staying and the behaviour of stayers can be understood through an immobility perspective, which emphasizes the agency of individuals who choose to stay and the spatial and perceptual dimensions of their decisions (Stockdale and Haartsen 2018). Staying behaviour is often framed in terms of the voluntariness of immobility and is categorized using typologies such as ‘desired’ or ‘active’ immobility (Mata-Codesal 2018; Robins 2022). Research in this area highlights the importance of staying and immobility for rethinking contemporary population geography (Gruber 2021). Drivers of staying and immobile behaviour include a variety of economic and social factors, such as local economic development (Deller et al. 2019), technological and employment changes (Duranton and Puga 2005), strong social ties and social capital (Mellander et al. 2011), emotional connections like place attachment (Bernsen et al. 2022), and life-cycle stages (Kley 2011).

The concept of rural stayers is best understood not as a binary category set against leavers, but rather as a complex process that encompasses a variety of migration behaviours and motivations. This fluidity is illustrated by the existence of mental stayers—those who remain emotionally tied to their rural roots despite physical relocation—and return migrants, who may leave for urban opportunities only to return later (Haartsen and Thissen 2014; Dupuy et al. 2000). The stigmatization of stayers as less ambitious reflects broader societal attitudes comparing rural and urban definitions of success, complicating their narratives and experiences (Hjälml 2013). Furthermore, familial ties play a critical role in influencing young adults’ decisions to remain, highlighting the importance of social networks and emotional attachments within rural communities (Stockdale et al. 2018; Haartsen and Stockdale 2017). The dynamic of parallel migrants—individuals who maintain ties to multiple locations as they navigate life transitions—further illustrates how stayers differ in their intentions and connections to place. The motives for staying are deeply embedded in community social dynamics and individual identity, marking the staying process as multifaceted and highly contextual (Erickson et al. 2018). Staying and immobile behaviour is particularly important for the development and sustainability of rural regions (Ye 2018; Barcus and Shugatai 2018). It contributes to social cohesion by strengthening social networks, stabilizing the local economy and preserving cultural and environmental assets, such as the natural landscape and opportunities for outdoor recreation (McLaughlin et al. 2014). This is especially the case in regions with a persistent decline of rural population (Stockdale and Haartsen 2018).

Understanding the staying behaviour of rural young adults is particularly important in addressing the widespread trend of ‘rural youth exodus’, the consistent pattern of young people migrating away from rural areas in the United States (Massey 2020;

Johnson and Winkler 2015). A key challenge for rural communities is determining whether young residents will choose to stay or leave, as this decision has profound implications for local economic sustainability (Fiore et al. 2015; Theodori and Theodori 2015; Miller and Collins 2023). Existing research examines factors such as community perceptions, place attachment and educational aspirations (Bernsen et al. 2022), alongside various community and individual predictors, with a particular focus on young populations (Fiore et al. 2015; Erickson et al. 2018; Bernsen et al. 2022).

1.1 | The Focus of the Study: The Millennial Generation

Despite the rising interest in the staying behaviour of youth in rural regions in the United States, few empirical studies capture the staying behaviour of young adults in the workforce with their cohort-specific characteristics. This study aims to contribute to the literature on the topics of staying and immobile behaviour by explicitly focusing on the staying behaviour of adults in the workforce—the millennial generation (or so-called Generation Y), which includes individuals born between 1980 and 2000 and represents the largest generation in the US workforce (Fry 2018). Parallel to studies on migration and staying behaviour, investigations on millennials’ residential choices often note the importance of another socio-demographic characteristic: gender. Based on the presented evidence on the changing socio-economic rural context, this study aims to give insights into the gender dimension of rural millennials’ staying behaviour and find answers to the following two questions: *What attributes of millennials might impact their rural staying behaviour?, and do these attributes differ by gender?*

The article focuses on three attributes of the millennial generation: their proficiency with digital tools, strong inclination toward environmental concerns and desire for work-life balance. Using data from the NCR-Stat: Baseline Survey 2022 (Bednarikova et al. 2022), we employed logistic regression analysis and independent *t*-tests to examine whether any of these attributes might be associated with millennials’ past, current and future staying in rural areas within the North Central Region of the United States.

The study contributes to the immobility and staying literature by unravelling a specific type of stayer. Despite the focus of some immobility/staying literature on differences in staying behaviour across the life course, the tendency of the millennial generation to stay in rural areas has not been fully explored. This study contributes to sealing this gap by suggesting new perspectives on staying behaviour among this group of adults.

The structure of the article comprises several sections. The Introduction provides an overview of the staying and immobility literature, contextualizing the importance of understanding why individuals, particularly millennials, choose to stay in rural areas. The literature review section debates millennials’ characteristics and their staying and moving behaviour. The Materials and Methods part outlines the data collection and statistical techniques used to analyze millennials’ staying behaviour. The Results and Discussion section presents

the key findings related to digital availability, environmental concerns, and work-life balance. The section interprets the results considering the existing literature and provides study limitations. Finally, the Conclusion emphasizes the implications for rural development and policy to retain millennials in rural areas.

2 | Millennials' Attributes and Staying Behaviour

2.1 | Millennials Attributes

While millennials share some commonalities with previous generations, their experiences with technology, work, education and societal values set them apart. The millennial generation is particularly recognized for its adaptability to technology, as they were the first to grow up with the internet and digital communication as integral parts of daily life, shaping both their social interactions and work environments (Myers and Sadaghiani 2010). Their fluency in digital platforms underscores their role as active participants in the digital landscape rather than passive consumers (Fadli et al. 2023).

Research suggests that millennials value flexibility, collaboration, and a sense of purpose in their work, often seeking employment that aligns with their personal interests and social values (Anderson et al. 2016; Valldeneu et al. 2021). They also exhibit high levels of civic engagement and progressive attitudes, strongly supporting social causes like climate action and diversity, reflecting a broader generational shift in values (Brazil and Candipan 2023; Milkman 2017).

Environmental concerns have also shaped this generation, contributing to higher levels of environmental awareness compared to earlier generations (Woosnam et al. 2019). Many millennials tend to adopt more sustainable lifestyles, particularly when they possess greater environmental knowledge (Solekah et al. 2022; Sedhai and Khatri 2023). In the workplace, millennials demonstrate higher turnover rates than previous generations, often driven by the pursuit of career advancement, better work-life balance and dissatisfaction with leadership practices that do not align with their expectations (Anderson et al. 2016; Valldeneu et al. 2021). Compared to previous generations, millennial women participate in the workforce at higher rates than in the past (Bialik and Fry 2019). Millennials prioritize flexibility and personal well-being over traditional career markers, seeking work environments that offer a balance between professional and personal responsibilities (George and Wallio 2017). Millennials are drawn to jobs that foster personal fulfilment and are quick to leave positions that do not meet their expectations for flexibility and balance (Bennett et al. 2017). When their work-life balance is maintained, they report higher job satisfaction, engagement and performance (Yunita et al. 2023).

2.2 | Millennials' Moving and Staying Behaviour

Although millennials share some broad generational characteristics mentioned above, there are significant differences

within the group influenced by a variety of factors, including location, socioeconomic status, education and personal life circumstances. As digital natives, millennials have harnessed technology to enhance their mobility, often gravitating toward urban centres that offer career opportunities, cultural diversity, and lifestyle amenities (Lee et al. 2019; Belikow et al. 2021). Yet, more recently, many are shifting towards suburban areas in pursuit of homeownership and family-oriented lifestyles—trends that echo those of previous generations (Lee 2021; Lee et al. 2024). This duality in residential preferences reflects an evolving life course shaped by shifting priorities and improving economic conditions (Corinth and Larrimore 2024).

At the same time, a growing number of millennials are choosing to remain in or return to rural areas, challenging the assumption that youth are inherently mobile. Motivated by strong family ties, emotional connections and community identity, rural millennials embrace local life and contribute innovatively to regional development (Stockdale et al. 2018; Adams and Komu 2021). These personal and social attachments foster a sense of belonging that underpins their decision to stay (Haartsen and Stockdale 2017). Many pursue hybrid livelihoods, engaging in local economies while leveraging digital tools for remote work or entrepreneurship, demonstrating a desire to balance individual fulfilment with meaningful community engagement (Ye 2018; Adams and Komu 2021).

Millennials' staying behaviour is also shaped by their stage in life. In 2024, this generation spans ages 25–44, a period marked by transitions such as career development, family formation, and evolving values (Stockdale et al. 2018; Stockdale and Haartsen 2018). While a lack of rural job opportunities can drive out-migration (Matysiak 2018), some young adults are actively seeking alternatives to urban life, drawn to lifestyles that better reflect their personal aspirations (Wang 2023).

This view complicates the traditional assumption that mobility is the default, highlighting that immobility can also be an intentional, strategic response to personal and economic realities (Erickson et al. 2018). For young adults in rural areas, these choices are often reassessed over time as they navigate education, work, and relationships—frequently weighing those factors against benefits such as safety, community support, and place attachment (Stockdale and Catney 2012; Haartsen and Stockdale 2017; Husa 2023; Bernsen et al. 2022). Opportunities for remote work and local entrepreneurship increasingly influence these location decisions (Erickson et al. 2018), making staying a proactive, value-driven choice. Still, challenges like social isolation, especially for solo dwellers, can complicate decisions to remain in rural areas (Choi and Ramaj 2024).

3 | Materials and Methods

3.1 | Data

We investigated the likelihood of millennials' past, current, and future staying in their residential community through a statistical analysis of a survey sample from the NCR-Stat: Baseline Survey (Bednarikova et al. 2022). The survey focuses on household and community social and economic development and was

conducted by the North Central Regional Center for Rural Development (NCRCD) in the North Central Region of the United States in 2022. The North Central Region, also commonly referred to as the Midwest, is a central part of the country. It is characterized by a mix of large metropolitan areas (such as Chicago, Detroit, Minneapolis, and St. Louis), smaller industrial and service-based cities and extensive rural landscapes dominated by agricultural land. Urban areas in this region serve as economic and cultural hubs, often characterized by higher population density, diverse employment sectors, and greater access to services and infrastructure. In contrast, rural areas are more sparsely populated and often centred around farming communities, small towns and local economies tied to agriculture and resource-based industries.

The survey was designed as a 20-min online survey using the Qualtrics survey platform. The survey sample design was based on the quota multiple sampling nested within the NCR states. Data was collected between June and August 2022, mainly via online panels, with some computer-assisted telephone interviewing (CATI) to reach offline, remote, rural households. The data set includes responses from 4688 households across the North Central Region, with 65% of respondents identifying as female. Women are overrepresented in the sample, likely due to the absence of a gender quota and the relative ease of reaching female respondents compared to male participants. Additionally, many female caregivers and retirees in the survey may have contributed to this imbalance. Among the respondents, 30% of women and 26% of men reside in rural areas, which is consistent with the study's design to oversample rural households (target: 30%). In this study, we targeted our sample towards householder decision-makers born between 1980 and 2000. The final sample of millennials consists of 1618 respondents.

As the survey does not allow us to distinguish between those who have never left their place of residence, those who moved from one rural area to another, or those who frequently relocate but intend to remain in rural areas, rural stayers in this study are defined as individuals who reside in the same type of residential location (rural area) but not necessarily in the same place where they lived while attending high school (Stockdale and Haartsen 2018).

3.2 | Data Analysis

We employed two statistical methods to assess the relationship between millennials' characteristics and their likelihood of staying in rural areas over the course of their lives: logistic regression analysis and an independent *t*-test. For clarity, we refer to each analytical approach, whether a regression model or a *t*-test, as a 'model' in the remainder of the paper. Thus, Models 1–3 refer to regression analyses, while Models 4–6 refer to *t*-tests comparing characteristics of millennial men and women.

Similar to other studies in which respondents decide whether to migrate or stay (Garasky 2002; Bjarnason and Thorlindsson 2006; Thissen et al. 2010; Rérat 2014; Clark and Maas 2015; Bernsen et al. 2022), we employed logistic regression analysis to determine millennials' attributes and demographic characteristics that might be predicated on millennials who have lived in rural areas, currently reside there, and plan to live there.

We perceived millennials' staying in rural areas as a function of digital accessibility and literacy (internet availability and the respondents' main source of information), environmental concerns (environmental awareness and importance of outdoor spaces and low pollution levels), work-life balance (life satisfaction) and respondents' demographic characteristics.

We started our analysis by categorizing millennials into seven groups based on their residential history and future plans, distinguishing between those who have lived in rural or urban areas at different stages of their lives (Figure 1): (1) all millennials ($N = 1618$) consisting of the total sample of millennials; (2) past rural stayers ($N = 749$), millennials who lived in rural areas while attending high school; (3) past urban stayers ($N = 869$), millennials who lived in urban areas while attending high school; (4) current rural stayers ($N = 551$), millennials who lived in rural areas during high school and continue to do so; (5) current urban stayers ($N = 198$), those who lived in rural areas during high school but have since relocated to urban areas; (6) future rural stayers ($N = 260$), those who lived in rural areas during high school, currently live in rural areas, and plan to stay in their rural location; (7) future rural leavers ($N = 291$), those who lived in rural areas during high school, currently live in rural areas, but plan to leave their rural location.

We explored millennials' staying behaviour by performing three logistic regression analyses to identify the characteristics that might be associated with staying in rural areas in the past (Model 1), at present (Model 2), and in the future (Model 3). As shown in Figure 2, in the first regression (Model 1), we used the total sample of millennials to make an initial distinction between those who lived in rural or urban areas in the past by asking the question, *Where did you live when you attended high school?* The responses to this question form our first dependent variable (*past_location*).

Millennials who reported living in rural areas during high school—past rural stayers—also include those who currently reside in rural or urban areas, or plan to relocate from their current location in the future. It is important to acknowledge that most millennials in this group were adolescents at the time, and during this stage of life, individuals typically do not make independent decisions about where they live. Instead, their place of residence is largely shaped by their family's socioeconomic status, employment circumstances, or lifestyle preferences. As such, living in a rural area during high school should be understood as part of their contextual background, rather than the result of a self-determined choice (Nelson 2019).

The group of past rural stayers serves as the sample for Model 2. This model identifies respondents who lived in a rural area during high school and currently reside in either a rural or urban area. We determined current residence from responses to the question, *Where is your household located?*, which forms the dependent variable (*current_location*) in Model 2.

Millennials who indicated that they lived in rural areas during high school and currently reside in a rural area comprise the group of current rural stayers, which we used as the sample for Model 3. This group includes individuals regardless of their plans to remain in or leave their current location. The number

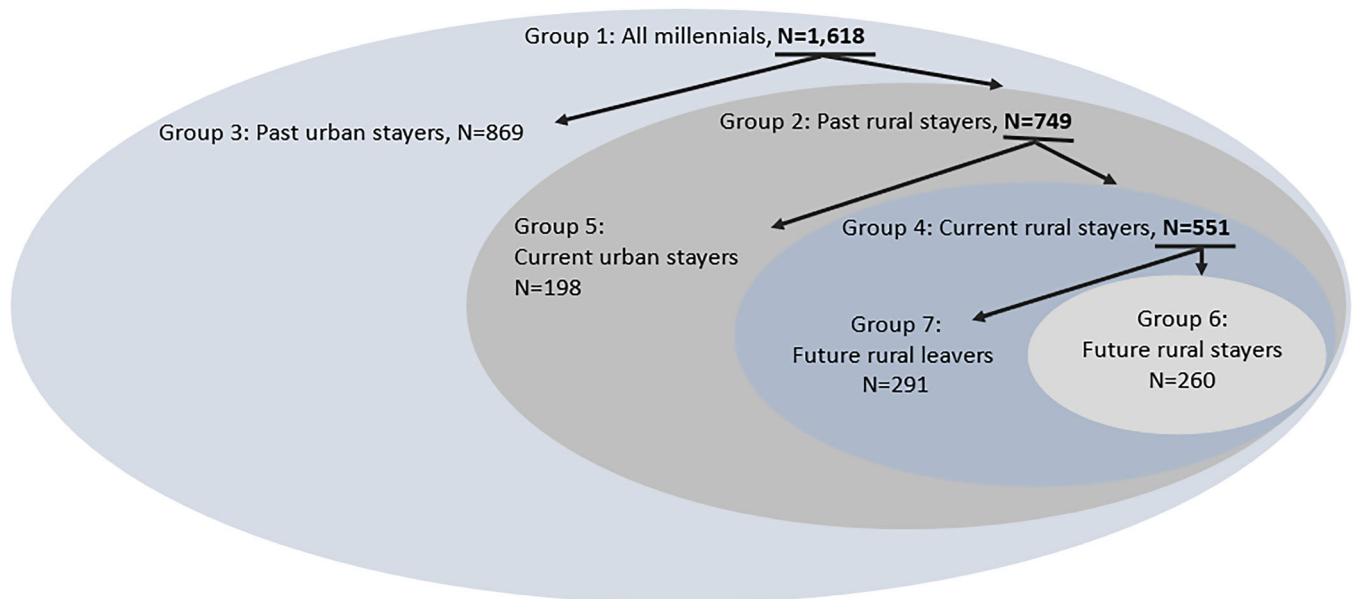


FIGURE 1 | Groups of millennials categorized by residential history at different life stages. *Source:* Authors' calculation based on the NCR-Stat: Baseline Survey, 2022 (Bednarikova et al. 2022).

<u>Logistic Regression</u>	Sample of millennials	Dependent variables	Investigated questions
Model 1	Group 1 All millennials, N=1,618	Residential location during the high school years: 0=urban; 1=rural	<i>What characteristics are associated with the staying behavior of millennials in rural areas at different life stages?</i>
Model 2	Group 2 Past rural stayers, N=749	Current residential location: 0=urban; 1=rural	
Model 3	Group 4 Current rural stayers, N=551	Planned residential location in the next 12 months: 0=urban; 1=rural	
<u>Independent t-test</u>	Sample of millennials	Compared samples	Investigated questions
Model 4	Group 2 Past rural stayers, N=749	Men, N=175 Women, N=574	<i>To what extent do demographic characteristics and attributes of millennials (who have lived in rural areas at various life stages) differ between men and women?</i>
Model 5	Group 4 Current rural stayers, N=551	Men, N=122 Women, N=429	
Model 6	Group 6 Future rural stayers, N=260	Men, N=50 Women, N=210	

FIGURE 2 | Methods for examining the relationship between millennials' characteristics and rural staying behaviour throughout their lives. *Source:* Created by authors.

of current rural stayers is lower than that of past rural stayers, as some have since moved to urban areas. The survey does not indicate whether respondents still live in the same location they resided in during high school. However, it provides information about their location at a specific point in the past and their most recent place of residence. Model 3 assesses millennials' future location preferences. The third dependent variable (*future_location*) is based on responses from current rural stayers to the question, *What is the likelihood that you will leave your current community in the next 12 months?*

Our next step was aimed only at millennials who have lived in rural areas at some point in their lives and those who plan to

stay in their rural locations. To better understand which attributes and demographic characteristics of rural millennials differ between men and women, we conducted an independent *t*-test across three groups: past rural stayers (Model 4), current rural stayers (Model 5) and future rural stayers (Model 6). We already described the groups of past and current rural stayers. Here we add that the group of future rural stayers is the smallest, as more than half of the current rural stayers expressed a desire to leave their rural communities.

Table 1 summarizes the definitions of dependent and independent variables and the survey questions that respondents were asked. The independent variables are grouped into four thematic

TABLE 1 | Summary of variable definitions.

Variable name	Survey questions and variable descriptions
<i>Dependent variables</i>	
Past_location	Where did you live when you attended high school? 1 = rural, 0 = urban
Current_location	past_location = 1 and Where is your household located? 1 = rural, 0 = urban
Future_location	past_location1 and current_location = 1 and What is the likelihood that you will leave your current community in the next 12 months? 1 = (definitely/probably) not, 0 = otherwise
<i>Digitalization</i>	
Internet_availability	How important is the availability of the internet to you? 1 = important, 0 = otherwise
Information_sources	What is your primary source of news and information? 1 = online (podcasts, internet, social media), 0 = otherwise (newspaper, television, radio)
<i>Environment concerns</i>	
Environmental_awareness	To what extent do you think climate change or global warming is an issue to be aware of? 1 = great extent, 0 = otherwise
Outdoor_spaces	How important are outdoor spaces to you? 1 = important, 0 = otherwise
Pollution_level	How important is the low pollution level to you? 1 = important, 0 = otherwise
<i>Work-life balance</i>	
Life_satisfaction	Taking all things together, how happy would you say you are? Responses range from 0 = extremely unhappy to 10 = extremely happy.
<i>Demographic characteristics</i>	
Child_care	In the last 12 months, have you provided unpaid care to a child or children between 0 and 11 years old? 1 = yes, 0 = no
Adult_care	In the last 12 months, have you provided unpaid care to any adult family member(s)? 1 = yes, 0 = no
Income	Please choose the category in which your total household income fell in 2021. 1 = less than \$25,000, 2 = \$25,000–\$49,999, 3 = \$50,000–\$74,999, 4 = \$75,000 and more
Working_status	What is your working status? 1 = wage-employed, 2 = self-employed, 3 = unemployed, 4 = retired
Education	What is the highest degree or level of school you have completed? 1 = high school and less, 2 = 1–3-year college (community or technical school), and 3 = 4-year college graduate and higher
Marital_status	How would you describe your marital status? 1 = married or living with a partner, 0 = otherwise (divorced, separated, widowed, never married living alone)
Female	1 = female, 0 = man or nonbinary
Age	What is your age in years? continuous variable

Source: Created by authors based on the NCR-Stat: Baseline Survey, 2022 (Bednarikova et al. 2022). Data includes millennials in the North Central Region, USA.

categories: digitalization, environmental concerns, work-life balance and demographic characteristics. The table in the Appendix S1 presents the descriptive statistics for all variables.

3.3 | Independent Variables

We tested the digitalization-related characteristics of millennials in rural areas by asking questions about their digital accessibility and literacy (*internet_availability*), the respondent's primary source of news and information (*information_source*). We examined several environmental concerns of the respondents that may affect the decision to stay in a rural area, using three variables. The variable *environmental_awareness* estimates the extent to which the respondent considers climate change or global warming an issue to be aware of. Two additional environmental questions ask about the importance of outdoor spaces (*outdoor_spaces*) and low pollution levels (*pollution_level*) for the

respondents. We used a subjective measure of life satisfaction (*life_satisfaction*) as a proxy for work–life balance.

The group of demographic characteristics involves seven variables. The first two variables include answers to the questions about caregiving. The variable *child_care* is a dummy variable with a value of 1 for those who provided care for a child or children between 0 and 11 years old within the last 12 months. The variable *adult_care* is also a dummy variable with a value of 1 for those who provided care for an adult(s) within the last 12 months. Caregivers are defined as those who provided unpaid care to a child(ren) and/or adult(s) at any time within the 12 months preceding the survey. Care might include helping with personal needs or household chores, including managing a person's finances or medication, arranging transportation or doctors' appointments, coordinating household upkeep and home care, arranging or making meals, or running errands, calling or visiting regularly to see how they are doing

and/or providing emotional support. The remaining variables include respondents' income, working status, education, marital status, gender and age.

4 | Results and Discussion

4.1 | Millennials' Past, Current, and Future Staying Behaviour

We applied logistic regression analysis and ran three models (Models 1–3) to assess millennials' staying behaviour during different stages of their lives. After controlling for missing values, the final sample was reduced from 1618 to 1469 observations for Model 1, 749 to 675 in Model 2, and 551 to 494 in Model 3. A link test (Pregibon 1980; Tukey 1949) showed that our models were specified correctly as a squared version of the prediction (*hatsq*) was insignificant in all models ($P > |z| = 0.614$ for Model 1, $P > |z| = 0.463$ for Model 2, and $P > |z| = 0.991$ for Model 3). After running the models, we employed Pearson's goodness-of-fit test to find other significant independent variables predicting dependent variables *past_location*, *current_location*, and *future_location*. Our observed 0/1 values on the dependent variables match the expected 0/1 values for the number of covariate patterns in our data, and the values are insignificant in all models (prob $> \chi^2$ equals 0.38 for Model 1, 0.26 for Model 2 and 0.22 for Model 3). This indicates that our models fit reasonably well, and we have selected suitable independent variables. We did not find any multicollinearity issues in the samples. The tolerance values (1/VIF) (Chatterjee and Hadi 2006) range from 0.431 to 0.962.

Table 2 provides the results of the three logistic regression models (Models 1–3), examining characteristics of millennials that might be significantly associated with their staying behaviour in rural areas.

The logistic regression reveals that the factors associated with rural living vary across different life stages. In terms of digitalization, Model 1 indicates that past rural stayers are significantly less likely to consider internet availability important than those who lived in urban areas. While the importance of internet availability is not significantly related to current staying in rural areas (Model 2), it becomes a significant factor for those planning to stay in their current rural location (Model 3). Among environmental concerns, Model 2 shows that current rural stayers are significantly more likely to value outdoor spaces. In contrast, millennials who prefer lower pollution levels were more likely to leave their rural location after finishing high school. Regarding work-life balance, millennials who have been living in rural areas for most of their lives (current rural stayers) are more likely to be satisfied with their lives than current urban stayers. However, life satisfaction does not hold the same significance for future choices, implying that other factors may become more influential in shaping the decisions whether to stay in the current rural location.

The results reveal several demographic characteristics significantly linked to millennials' rural staying. Caregiving responsibilities are noteworthy: current rural stayers who care for adults are more likely to leave, while those caring for children are more

likely to stay. Income also matters. Past rural stayers are more likely to be unemployed and less likely to have household incomes above \$50,000 than their urban peers. However, higher income is positively tied to future staying intentions, especially among those earning \$50,000–\$74,999. College-educated past rural stayers are more likely to move to urban areas, yet Model 3 shows that college-educated current rural stayers are more likely to remain. Gender also plays a role, with women more likely than men to stay. Lastly, age and retirement show modest but significant effects: older millennials are more likely to stay, while retirees are more likely to plan to leave.

4.2 | Gender Differences in Rural Millennials' Characteristics

To examine gender differences in attributes and demographic characteristics among millennials who have stayed or plan to stay in rural areas, we conducted independent *t*-tests across three groups: past rural stayers (Model 4), current rural stayers (Model 5), and future rural stayers (Model 6). In this approach, we determined whether a difference existed, rather than identifying the causes of any difference. For example, we examined the independent *t*-test results for the variable *internet_availability* in Model 4 in Table 3, where we tested whether the reported mean importance of internet availability among past rural stayers differs significantly between men and women. Findings in Table 3 show that the mean difference between men (0.383) and women (0.479) is -0.096 , indicating that internet availability is perceived as more important by women than by men. The difference is statistically significant. Due to space limitations, Table 3 only displays differences in mean values of all independent variables by gender and staying behaviour (past rural stayers, current rural stayers and future rural stayers) and whether they are statistically significant.

The results demonstrate that internet availability is significantly more important to women than men among both past and current rural stayers (Models 4 and 5), but not significantly different among future rural stayers (Model 6). Information sources show no significant gender difference across any group. The quality of pollution levels is significantly more important to women than men in the group of past rural stayers, but differences are not significant in the other groups. The quality of outdoor spaces is also more important to women than men among past rural stayers. We found no significant gender differences in environmental awareness across the models. As for work-life balance, women in the groups of past and current rural stayers are significantly less satisfied with their lives than men. There is no significant gender gap among future rural stayers.

Demographic characteristics reveal several significant gender differences. Child care responsibilities are significantly more common among women than men in both past and current rural stayers' groups. In contrast, adult care responsibilities are significantly more frequent among men than women across all three groups. Among past rural stayers, men are significantly more likely than women to report household incomes above \$75,000. At the same time, no significant gender differences are observed in other income brackets or employment statuses across the groups. Educational attainment also differs by gender, with women

TABLE 2 | Logistic regression analysis (Models 1–3) examining rural and urban locations, attributes, and demographic characteristics of millennials in the North Central Region in the United States throughout their lives.

	Model 1 past_location			Model 2 current_location			Model 3 future_location		
Dependent variable	Coef.	Standard error		Coef.	Standard error		Coef.	Standard error	
Digitalization									
Internet_availability	−0.273	(0.111)	**	−0.259	(0.185)		0.438	(0.199)	**
Information_sources	0.033	(0.111)		−0.160	(0.185)		−0.180	(0.200)	
Environment concerns									
Environmental_awareness	−0.143	(0.113)		−0.035	(0.190)		0.326	(0.209)	
Outdoor_spaces	−0.106	(0.141)		0.422	(0.225)	*	−0.109	(0.254)	
Pollution_level	−0.057	(0.126)		−0.398	(0.213)	*	0.351	(0.222)	
Work-life balance									
Life_satisfaction	0.022	(0.024)		0.107	(0.040)	***	0.055	(0.044)	
Demographic characteristics									
Child_care	−0.183	(0.115)		−0.181	(0.195)		0.617	(0.212)	***
Adult_care	−0.077	(0.125)		0.287	(0.217)		−0.608	(0.229)	***
Income (i. less than \$25,000)									
\$25,000–\$49,999	−0.183	(0.153)		0.042	(0.243)		0.367	(0.256)	
\$50,000–\$74,999	−0.532	(0.181)	***	0.054	(0.303)		0.649	(0.319)	**
\$75,000 and more	−0.632	(0.178)	***	−0.115	(0.290)		0.308	(0.318)	
Working_status (i. Wage_employed)									
Self_employed	0.072	(0.203)		0.143	(0.348)		0.088	(0.370)	
Unemployed	0.287	(0.137)	**	0.024	(0.225)		−0.218	(0.241)	
Retired	0.169	(0.145)		0.090	(0.243)		−0.468	(0.260)	*
Education (i. High school or less)									
College 1–3 years	−0.027	(0.139)		−0.302	(0.230)		0.333	(0.237)	
4-year college and more	−0.315	(0.145)	**	−0.664	(0.243)	***	0.672	(0.265)	**
Marital_status	−0.009	(0.117)		0.045	(0.195)		0.154	(0.206)	
Female	0.312	(0.123)	**	0.240	(0.211)		0.374	(0.236)	**
Age	−0.002	(0.408)		0.102	(0.016)		0.038	(0.018)	*
Number of observations	1469			675			494		
Prob> χ^2	0.000			0.019			0.000		
Pseudo R^2	0.034			0.043			0.089		

Note: Significance of coefficients in the model according to the z-test: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (statistical significance thresholds).

Source: Authors' calculation based on the NCR-Stat: Baseline Survey, 2022 (Bednarikova et al. 2022).

significantly less likely to have completed a 4-year college degree or higher than men in all three groups. Women are significantly more likely to be married than men among past and current rural stayers. Men in the past rural stayers' group are significantly older than their female counterparts, but no significant age differences were observed in the current or future groups.

4.3 | Discussion

This study explores the impact of selected millennials' attributes on their staying behaviour in rural areas, focusing on gender differences. Our findings align with existing research on

migration and staying behaviour. Yet, they offer new insights into the factors that might influence millennials' decisions to stay in rural communities, particularly from a gendered perspective.

As digital natives, millennials' reliance on technology plays a crucial role in shaping their residential preferences. Consistent with previous literature, which highlights millennials' strong connection to digital technologies (Bolton et al. 2013), our findings suggest that internet availability might be a significant factor, particularly for rural women. Women who place higher importance on internet availability are more likely to plan on staying in rural areas. This aligns with studies that underscore the role of digitalization in creating opportunities for remote

TABLE 3 | Independent *t*-test analysis (Models 4–6) of gender differences between millennial rural men and women in the North Central Region in the United States throughout their lives.

	Model 4 past rural stayers (men) vs. past rural stayers (women)	Model 5 current rural stayers (men) vs. current rural stayers (women)	Model 6 future rural stayers (men) vs. future rural stayers (women)
<i>Digitalization</i>			
Internet_availability	−0.096**	−0.103**	−0.109
Information_sources	−0.0124	0.004	0.061
<i>Environment concerns</i>			
Environmental_awareness	−0.031	−0.009	0.117
Outdoor_spaces	−0.076**	−0.052	−0.067
Pollution_level	−0.109***	−0.075	−0.106
<i>Work-life balance</i>			
Life_satisfaction	0.343*	0.5**	0.175
<i>Demographic characteristics</i>			
Child_care	−0.117***	−0.106**	−0.059
Adult_care	0.122***	0.128***	0.129**
<i>Income</i>			
Less than \$25,000	−0.024	−0.029	0.025
\$25,000–\$49,999	−0.041	−0.003	−0.056
\$50,000–\$74,999	0.001	0.035	0.058
\$75,000 and more	0.076**	0.016	−0.003
<i>Working_status</i>			
Wage_employed	0.039	0.027	0.105
Self_employed	−0.031	−0.03	−0.5
Unemployed	−0.007	0.016	−0.023
Retired	−0.012	−0.022	−0.066
<i>Education</i>			
High school or less	−0.043	−0.033	−0.122
College 1 to 3 years	−0.057	−0.062	−0.103
4-year college and more	0.102**	0.097**	0.23***
Marital_status	−0.073*	−0.99**	−0.123
Age	0.948*	0.770	0.513
Number of observations (men)	175	122	50
Number of observations (women)	574	429	210
Total number of observations	749	551	260

Note: Significance of coefficients in the model according to the *z*-test: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (statistical significance thresholds). The *t*-test shows differences in the mean values of the variables between rural men and rural women: difference = mean(men)−mean(women).

Source: Authors' calculation based on the NCR-Stat: Baseline Survey, 2022 (Bednarikova et al. 2022).

work and continuous learning, especially for women who are also balancing caregiving responsibilities (Conroy and Low 2021). Reliable digital infrastructure can thus be a critical asset for the staying/immobility of the rural population, helping to bridge the 'digital divide' often cited as a barrier to development in rural communities (Reddick et al. 2020). This finding supports the assumption that digital access is universally essential for rural retention, showing that a segment of rural millennials may place great value on digital aspects of rural life.

Environmental concerns emerged as another important factor influencing millennials' staying behaviour, particularly among women. The study reveals that millennials who value access to outdoor spaces are more likely to stay in rural areas. In contrast, those who prioritize low pollution levels are more likely to leave when this standard is not met. A strong connection to nature and outdoor environments may play a key role in encouraging rural millennials' retention—a notion supported by previous research on place-based preferences (Mellander et al. 2011) and outdoor attachment (Bernsen et al. 2022). This aligns with research

showing that millennials, as a generation, are more environmentally conscious than previous generations (Woosnam et al. 2019). Women, in particular, highlight these environmental factors, which may reflect a broader tendency for women to be more engaged in sustainability issues (Gómez-Román et al. 2020).

Place attachment and a desire for a high quality of life are well-documented motivators for rural staying behaviour (Stockdale et al. 2018; Bernsen et al. 2022). For millennials, environmental factors like outdoor spaces and clean air might be tied to this sense of place, as they represent the lifestyle benefits associated with rural living. Life satisfaction is a significant predictor of staying behaviour, consistent with findings that underline the role of personal well-being in migration decisions (Clark and Maas 2015). Millennials who have been living in rural areas reported higher life satisfaction than those who moved to urban areas. This suggests that emotional well-being and a positive overall experience in rural areas might be central to millennials' decisions to stay in rural communities. The study also uncovers important gender differences in life satisfaction. While women are generally more likely to stay in rural areas than men, they report lower overall life satisfaction. This could be linked to the traditional caregiving roles that many rural women assume, which may create stress or limit career opportunities (Brenny and Biniecki 2024). Despite these challenges, women who plan to stay in rural areas reported higher life satisfaction than those planning to leave, indicating that those who choose to stay may find satisfaction in their rural lifestyle, particularly when it aligns with their values and caregiving responsibilities.

Child caregivers are more likely to remain in rural areas in the future, with women outnumbering men. Many of these areas depend on informal caregiving networks, where women often assume these roles due to traditional gender norms and societal expectations that prioritize family care over career advancement (Lalani et al. 2024). On the contrary, adult caregiving is associated with leaving rural areas in the future, and there are more male than female adult caregivers among rural millennials. This disparity is exacerbated by limited workplace supports and resources tailored to caregivers, which may compel many men to seek opportunities in urban settings to improve their financial conditions and caregiving capabilities (Henning-Smith and Lahr 2018; Bouldin et al. 2017).

Older millennials are more likely to stay in rural areas in the future, suggesting that higher age and life stage may contribute to greater location stability. As they age, millennials may prioritize stability, family proximity and rural lifestyle benefits, including affordability and work-life balance (Erickson et al. 2018; Adams and Komu 2021).

4.4 | Study Limitations

One challenge in this study is endogeneity, which can undermine the reliability of the results. Endogeneity arises when an explanatory factor is influenced by the outcome it is meant to explain, or by an unobserved variable, complicating causal interpretation. In this study, we use current attitudes toward digital availability, environmental concerns, and work-life balance to explain past rural staying behaviour. While this approach

provides useful insights, it raises concerns about reverse causality—individuals' attitudes may have shifted as a result of their staying decision. Therefore, these associations should be interpreted with caution. To address this issue, we employed two strategies. First, we applied logistic regression models that control for potential confounding variables, thereby isolating the effects of the key attributes on the staying behaviour of millennials. Second, we conducted robustness checks to ensure the stability of the estimates across different model specifications. Additionally, we acknowledge the cross-sectional nature of the data set as a study limitation. Unlike longitudinal studies, it does not distinguish between a presumed cause and its possible effect. Nonetheless, the survey provides unique data about millennials in rural and urban areas of the North Central Region.

5 | Conclusions

The general findings related to past, current and future rural staying reveal significant differences between rural stayers and their urban counterparts. Millennials who have remained in rural areas tend to prioritize internet availability, outdoor spaces, and environmental quality more than those who live in urban areas. Additionally, rural stayers report higher life satisfaction compared to urban dwellers, suggesting that those who choose to stay often find a greater sense of well-being in rural areas. However, income disparities exist as rural stayers are less likely to have higher household incomes compared to urban stayers, which might influence staying decisions over time.

Notable gender differences emerge in staying behaviour, with women placing greater emphasis on the availability of the internet and environmental factors in their decision to stay. Thus, internet availability is a significant factor for women who plan to stay in rural areas, reflecting the growing role of digital connectivity in providing opportunities for remote work, education and social engagement. The emphasis on environmental quality suggests that rural communities can further enhance staying/immobile behaviour by promoting their natural assets and maintaining environmental quality.

The decision to stay in rural areas is a complex phenomenon, influenced by various factors, including personal, social and economic dynamics. Given the intricate relationship of these factors, further research is essential to deepen our understanding of the various motivations behind millennials' staying behaviour. For example, caregiving responsibilities show different dynamics: caregiving for older adults is often temporary, whereas raising children involves longer-term commitments that may encourage residential stability. These patterns suggest a meaningful avenue for future research into how different caregiving roles influence staying decisions. By broadening the scope of this study, policymakers and community leaders could be better equipped with effective strategies to promote rural staying behaviour among millennials.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in the Purdue University Research Repository at <https://doi.org/10.4231/2DEM-Z333>.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Appendix Millennials: Summary statistics of three groups of millennials: past rural stayers, current rural stayers, and future rural stayers in the North Central Region in the U.S.