FACTORS THAT INFLUENCE THE SENSE OF ATTACHMENT TO THE COMMUNITY IN THE JAPANESE SUBURBAN POPULATION

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Abstract: Aim: This study aimed to identify what drives community attachment among suburban residents. Methods: In a cross-sectional analysis, 4,301 individuals (1,792 males, 2,480 females) from four Japanese regions were surveyed in 2019. A negative binomial regression model adjusted for area, age, and sex was used to calculate prevalence ratios (PRs) and 95% confidence intervals (CIs) for neighborhood attachment factors. Multiple imputation with the fully conditional specification method addressed missing values. Results: The prevalence of the sense of attachment to the community was 82.3%. Years of residence ≥ 20 vs. ≤ 10 years (PR: 1.07; 95% CI: 1.01–1.13); satisfaction with the environment of nursing care in the residential area (PR: 1.06; 95% CI: 1.03–1.09); ease of walking on the streets (PR: 1.09; 95% CI: 1.06–1.13); satisfaction with natural surroundings of the community (PR: 1.37; 95% CI: 1.23–1.54); satisfaction with the convenience of daily shopping, medical care, welfare, and cultural facilities (PR: 1.05; 95% CI: 1.02–1.09); satisfaction with engagement with neighbors and community (PR: 1.13; 95% CI: 1.08–1.18); presence of people in the community who can be consulted about problems (PR: 1.07; 95% CI: 1.03–1.11); degree of relationship with neighbors who would speak upon meeting vs. almost no relationship (PR: 1.13; 95% CI: 1.09–1.18); and presence of close friends in the community (PR: 1.07; 95% CI: 1.02–1.12) were significantly associated with a sense of attachment to the community. Conclusion: When developing a community, the factors that influenced the sense of attachment to the community should be considered by municipalities.

Keywords: older population, residential settings, movement to new residences, societal surroundings, natural surroundings

Introduction

The concept of community attachment has been increasingly recognized as a vital contributor to individual well-being. Previous studies in diverse geographical contexts have underscored this relationship. For instance, Harris (1995) found that in the United States, a strong sense of place attachment was positively correlated with the quality of life among both domestic and international residents(Harris, Werner, Brown, & Ingebritsen, 1995). Tartaglia's study, conducted in 2013 in Italy, underscored a notable link between the sense of connection to a place and multiple aspects of well-

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being. This link includes not only physical and psychological health but also enhanced social connections and contentment with one's physical surroundings (Tartaglia, 2013).

In the context of Japan, particularly in suburban areas, there is a significant demographic and social transformation, marked by population decline and weakening of community bonds. This situation has its roots in the post-World War II urbanization trends, which led to a concentration of over half the nation's population in major metropolitan areas. This resulted in housing shortages, prompting extensive suburban development. However, since the 1990s, there has been a notable reverse migration to urban centers, spurred by factors such as lower land costs and increased availability of condominiums. This trend predominantly attracts younger individuals and families, leaving suburban areas with a mainly aging population. This demographic shift poses challenges not only to the local economy but also to the community ties, which play a crucial role in social functions like crime prevention and disaster response.

Considering this context, the objective of this research is to explore the factors that contribute to the sense of community attachment among suburban populations in Japan. Understanding these factors is essential for devising strategies to strengthen community bonds, which is key to enhancing public health outcomes and the overall quality of life in these dynamically changing suburban landscapes.

Materials and Methods

In this cross-sectional analysis, we focused on 11,204 individuals from four suburban areas in Japan. These regions are situated in Osaka (Regions A and B), Aichi (Region C), and Kanagawa Prefecture (Region D), with the study conducted in the early part of 2019. Each region exhibits a population aging rate higher than the national average of 26.7% (Ministry of Health, Labour and Welfare, 2021), with figures of 30.2% in Region A, 41.6% in Region B, 38.6% in Region C, and 45.5% in Region D. These regions, identified as new towns (Aoki & Kadono, 2020), are facing significant challenges: rapid aging of their populations and a decline in the number of inhabitants. The selection of these specific regions was based on the practicality of the research and the availability of local support and consent, particularly from the leaders of the community councils in these regions. Prior to conducting the survey, due to the lack of direct access to resident information, we distributed questionnaires to every household within these communities. The heads of the local community associations played a pivotal role in the distribution process, with a special emphasis on requesting the household heads to complete the surveys. Approximately one week after the distribution, the surveys were collected back by the leaders of these associations. No financial or other forms of incentives were provided to encourage participation in this study. Completion and return of the questionnaire was considered as consent for participation. This research received sanction from the Ethics Review Committee of the

Graduate School of Human Life Science at Osaka City University, as indicated by approval number 19-27.

Definition of the sense of attachment to the community

Participants were asked about their sense of attachment to their community with the question, 'Do you feel a sense of attachment to your community of residence?' The possible responses were: 1. Very much, 2. Somewhat, 3. Neutral, 4. Not so much, 5. Not at all. In this study, 'presence of sense of attachment to the community' was defined as selecting either 'Very much' or 'Somewhat.

Questionnaire for characteristics and living environment

This survey aimed to gather data on various aspects including employment status (categorized as either employed or unemployed), living arrangements (either living alone or with others), proximity of family members (either nearby or not), duration of residency in the current location (less than or equal to 9 years, between 10 and 19 years, or 20 years and above), type of housing (single or others), adequacy of local nursing care facilities (rated as sufficient or insufficient), walkability of nearby streets (satisfaction level), presence of natural elements in the neighborhood (satisfaction level), convenience of accessing everyday necessities like shopping, healthcare, welfare services, and cultural centers (satisfaction level), level of interaction and engagement with neighbors and the community (satisfaction level), availability of confidants in the community for discussing problems (either available or not), nature of relationship with neighbors (ranging from no relationship to casual conversation), existence of close friends within the community (either present or not), and involvement in social activities (either active or not).

Statistical analysis

In our statistical examination, we presented the characteristics and environmental factors as percentages. The calculation of prevalence ratios (PRs) and their 95% confidence intervals (95% CIs) in relation to community attachment was performed using a negative binomial regression model. To adjust the PRs for attachment to the community based on various characteristics and environmental conditions, factors such as residential area, age groups (under 39, 40 to 64, and 65 or older), and gender were considered. For the treatment of incomplete data, the multiple imputation method was employed, specifically utilizing the fully conditional specification (FCS) approach (Lee & Carlin, 2010). This resulted in creating five complete datasets. These were analyzed using the FCS option in the PROC MI command in SAS, and the consolidated findings were derived using the PROC MIANALYZE process. We set a significance level at 0.05 for statistical relevance. All statistical

analyses were carried out using SAS software, version 9.4, from SAS Institute Inc., based in Cary, NC, USA.

Results

From those solicited for the study, 4,113 individuals (representing a 36.7% response rate) returned completed questionnaires. 82.3% of these respondents demonstrated a positive sense of attachment to their community.

Table 1 displays factors associated with the sense of attachment to the community. Several factors were found to be significantly related to a stronger sense of community attachment. These include a longer duration of residency in the current location (≥ 20 vs. ≤ 10 years) with a PR of 1.07 (95% CI: 1.01–1.13); a positive evaluation of local nursing care facilities (PR: 1.06; 95% CI: 1.03–1.09); ease of walking in neighborhood streets (PR: 1.09; 95% CI: 1.06–1.13); satisfaction with the community's natural environment (PR: 1.37; 95% CI: 1.23–1.54); and the convenience of accessing everyday necessities like shopping, healthcare, welfare services, and cultural centers (PR: 1.05; 95% CI: 1.02–1.09). Additionally, interaction and engagement with neighbors and the community (PR: 1.13; 95% CI: 1.08–1.18), the presence of confidants in the community for discussing problems (PR: 1.07; 95% CI: 1.03–1.11), the nature of relationships with neighbors (PR: 1.13; 95% CI: 1.09–1.18), and the existence of close friends within the community (PR: 1.07; 95% CI: 1.02–1.12) were also significantly associated.

Table1. Factors associated with the sense of attachment to the community (n = 4,113)

Variable	Category	The sense of attachment to the community		Multivariate PR (95% CI)[1,2]
		Absent (%)	Present (%)	
Employment status	Not employed	36.4	40.9	Ref
	Employed	63.6	59.2	1.00(0.97 − 1.03)
Living arrangements	Alone	15.7	13,7	Ref
	With others	84.3	86.3	1.03(0.98 − 1.07)
Proximity of family members	Absent	61.2	55.9	Ref
	Present	38.8	44.1	1.03(1.00 − 1.05)*
Duration of residency in the current location (years)	≤10	16.9	10.2	Ref
	10 to 19	22.9	16.9	1.01(0.95 − 1.07)
	≥20	60.2	72.9	1.07(1.01 − 1.13)*

Type of housing	Single	88.3	93.6	Ref
	Others	11.7	6.4	0.94(0.87－1.00)
Adequacy of local nursing care facilities	Not sufficient	90.5	80.7	Ref
	Sufficient	9.5	19.4	1.06(1.03－1.09)*
Walkability of nearby streets	Not satisfied	52.6	32.4	Ref
	Satisfied	47.5	67.6	1.09(1.06－1.13)*
Presence of natural elements in the neighborhood	Not satisfied	16.9	4.1	Ref
	Satisfied	83.1	95.9	1.37(1.23－1.54)*
Convenience of accessing everyday necessities like shopping, healthcare, welfare services, and cultural centers	Not satisfied	76.8	64.6	Ref
	Satisfied	23.2	35.4	1.05(1.02－1.09)*
Level of interaction and engagement with neighbors and the community	Not satisfied	48.0	22.8	Ref
	Satisfied	52.0	77.2	1.13(1.08－1.18)*
Availability of confidants in the community for discussing problems	Absent	47.2	27.4	Ref
	Present	52.8	72.7	1.07(1.03－1.11)*
Nature of relationship with neighbors	Almost no relationship	49.6	24.7	Ref
	Talking if met	50.4	75.3	1.13(1.09－1.18)*
Existence of close friends within the community	Absent	39.8	21.2	Ref
	Present	60.2	78.8	1.07(1.02－1.12)*
Involvement in social activities	Absent	97.4	93.5	Ref
	Present	2.6	6.5	1.03(0.99－1.07)

[1] The analysis employed a negative binomial regression model that was adjusted based on factors such as the area of residence, age categories (under 39, between 40 and 64, and 65 years or older), and gender.

[2] In the multivariate model, all variables were included for comprehensive analysis.

* Statistical significance was noted where P is less than 0.05.

Discussion

This cross-sectional analysis indicates a range of factors that have a significant correlation with the level of community attachment. Many of these factors are related to socio-demographics, the residential environment, and interpersonal relationships.

In our research, we observed a connection between the duration of residency within a community and the development of attachment to that place. This observation aligns with prior research (Lewicka, 2010; Raymond, Brown, & Weber, 2010)indicating a link between how long individuals live in a place and their emotional connection to it. However, given the cross-sectional nature of this study, establishing a cause-and-effect relationship or the directionality of this link was not possible. It might be that extended periods of living in a community lead to stronger attachments, or alternatively, that those who feel a deeper attachment are more inclined to stay. Both possibilities seem plausible in this context. When a location meets the needs of its residents, they may form a dependency on that place, increasing the likelihood of their prolonged stay. As their residency extends, the place may become integral to their identity, reinforcing their preference to remain there.

In line with earlier research, the findings of our current study indicate that factors such as the walkability of streets (Samaneh, Mohammad Reza, & Mohammad Saeid, 2020), appreciation of the community's natural environment (Marino Bonaiuto, Aiello, Perugini, Bonnes, & Ercolani, 1999), and the accessibility of daily necessities like shopping, healthcare, welfare services, and cultural facilities (Sugihara & Evans, 2000) play a significant role in fostering a sense of attachment to the community. In our study, we uncovered a unique finding: residents' satisfaction with the local nursing care environment is linked to their sense of belonging in the community. Notably, since 2004, Japan has been leading globally in terms of its elderly population percentage, which escalated to 28.7% by 2020 (Statistics Bureau, Ministry of Internal Affairs and Communications, 2020). With Japan experiencing continuous demographic aging, the portion of its population requiring long-term care has been on the rise, reaching 18.3% in 2021. Additionally, a significant majority (73.4%) of this group expressed a preference for receiving long-term care in their own homes (Ukawa, Kato, Lee, Ohara, & Mori, 2023). This preference was particularly strong among those who were content with the nursing care facilities in their area. The correlation between satisfaction with nursing care environments and community attachment might be influenced by the ease of accessing information about social services. For instance, in a study of 539 Japanese individuals aged between 40 and 64, those who favored institutional long-term care tended to have less access to information regarding social services and local government policies, as indicated by a multivariate odds ratio of 1.20 (95% CI: 1.02–1.42) (Sugimoto, Kashiwagi, & Tamiya, 2017). Consequently, enhancing the range of information sources and elevating awareness about social services can potentially address concerns

and reinforce the feeling of connectedness within the community. To achieve this, it's essential to spread information regarding care services through diverse outlets.

Additionally, this study highlighted the role of social elements in fostering community attachment. We observed significant correlations between community attachment and factors such as enjoyment in interactions with neighbors, the availability of trusted individuals for discussing personal issues, the quality of relationships with neighbors, and having close friends within the community. Our findings align with various research that has shown connections between community attachment and aspects like the presence of friends and relatives in the neighborhood(Kasarda & Janowitz, 1974), the proximity of non-relative friends (Mesch & Manor, 1998), the strength of social bonds and relationships (M. Bonaiuto, Fornara, & Bonnes, 2006), as well as the depth and frequency of interactions with neighbors (Moser, Ratiu, & fleury-Bahi, 2002). These factors range from casual neighborhood acknowledgments to more intimate interactions, such as entrusting neighbors with keys or seeking assistance (Lewicka, 2005). Moreover, our study suggests that attachment to a place influences community involvement. People with strong ties to their local area often participate in community activities, such as joining clubs or volunteering (Cuba & Hummon, 1993),. This is supported by research indicating a link between place identity and active participation in local events and organizations (Lewicka, 2010). Such involvement not only reflects but also potentially enhances place attachment, creating a reinforcing cycle.

The findings from this research have some limitations. First, the inability of the cross-sectional design to this study limits our ability to establish temporal relationships. Second, this research was restricted to four distinct regions in Japan, raising questions about the applicability of the results to other regions.. Third, the possibility of a selection bias towards participants more conscious of their health could have impacted our findings. The survey's response rate was notably low, which might be attributed to various factors such as the unavailability of some householders to contact the survey collectors due to daytime occupations, or the challenges faced by elderly or disabled residents in responding to a self-administered survey. Fourth, the reliability of the responses may be influenced by the fact that the survey's questions and provided answer choices were not subjected to a formal validation process.

Conclusion

Although this study has limitations due to its cross-sectional nature, several factors are significantly associated with a sense of attachment to the community. These factors include a positive evaluation of local nursing care facilities, walkability of nearby streets, presence of natural elements in the neighborhood, and convenience of accessing everyday necessities like shopping, healthcare, welfare

services, and cultural centers. Also, interaction and engagement with neighbors and the community, availability of confidants for discussing problems, the nature of relationships with neighbors, and the existence of close friends within the community were found to be significantly associated with this sense of attachment. Longitudinal studies are needed to clarify the temporal relationships between these factors and community attachment. However, it is important for local authorities to consider the social and interpersonal connections of the elderly population to foster their sense of belonging in the community.

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Declaration of Interest Statement

The authors declare that they have no conflict of interest.

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