



Continuity among stayers: Levels, predictors and meanings of place attachment in rural shrinking regions

Marieke E. van der Star^{a,b,*}, Cody Hochstenbach^b

^a Department of Sociology and Human Geography, University of Oslo, Oslo, Norway

^b Geography, Planning and International Development Studies, University of Amsterdam, Amsterdam, the Netherlands

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ABSTRACT

In many countries, social and economic disparities between regions appear to be on the rise, with the increasing demand for urban living mirrored by the decline of more peripheral regions. Increasingly often, this concerns shrinking rural regions. This paper focuses on residents' place attachment in two such regions: Sogn og Fjordane in Norway and Noord Friesland in the Netherlands. We study levels, predictors and meanings of place attachment by drawing on both quantitative survey data and qualitative in-depth interviews. Our findings reveal generally high levels of place attachment in both regions, likely reflecting stability among rural stayers. Women, the employed, long-term residents and those speaking the local language report significantly higher levels of attachment in both regions. Our qualitative material underscores that individual biographies are actively shaped by the social, cultural and physical dimensions of place. Respondents construct images of living in a rural idyll where a sense of normalcy, familiarity and natural quality is maintained. We argue these findings help understand *why* residents stay put in the face of regional decline.

1. Introduction

In many countries, center-periphery divides are on the rise. Larger cities and their metropolitan regions are the loci of economic and population growth. Conversely, peripheral and rural regions are marked by stagnating or declining populations, selective outmigration and struggling economies (Elshof et al., 2014; Haase et al., 2014; Rauhut and Littke, 2016; Stockdale, 2004; Wolff and Wiechmann, 2018). These processes may impact individuals' place attachment. On the one hand, regional decline may have a negative impact as it represents a disruption that can contribute to feelings of loss and estrangement (Martinez-Fernandez et al., 2012). On the other hand, those residents that do decide to stay or return in the face of decline, may have done so for positive reasons (Guimarães et al., 2016; Hollander, 2011; Rérat, 2014a), which would imply high levels of attachment. Furthermore, rural communities are typically characterized by high levels of residential stability and relatively strong social ties which may translate in high levels of attachment (Anton and Lawrence, 2014; Rérat, 2014b).

This paper studies residents' place attachment – which we understand as the bonding between individuals and their environment (Scannell and Gifford, 2010) – in the specific context of rural regions

with a shrinking population size. People relate to their environment in important ways, as places take on personal meanings and come to figure in individuals' biographies (Fenster, 2005). Place attachment and the related concept of belonging have been studied in a variety of contexts, ranging from stable rural communities (e.g. Raymond et al., 2010) to rapidly changing urban neighborhoods (e.g. Brown et al., 2003; Pinkster, 2016). While few studies actually do so, we argue it is increasingly important to study place attachment in rural areas marked by population decline.

Not only are more regions facing population decline, making it ever more urgent to understand how residents staying put relate to their environment (Haartsen and Venhorst, 2010), but place attachment may also shape local residents' responses to potential effects (Hospers, 2013). More broadly, the degree and form of attachment may, ultimately, also inform feelings of regional resentment in the wake of deepening core-periphery divides (De Lange et al., 2022; Rodríguez-Pose, 2018).

Recognizing that place attachment is multifaceted as residents may be more or less attached to different aspects of place, we stratify place attachment according to different dimensions. To do so, we adapt and apply the conceptual model of place attachment developed by Raymond et al. (2010), who distinguished between place identity, place

* Corresponding author. Department of Sociology and Human Geography, University of Oslo, P.O. Box 1096 Blindern, 0317 Oslo, Norway.

E-mail address: m.e.van.der.star@sosgeo.uio.no (M.E. van der Star).

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dependency, social bonding and nature bonding as relevant dimensions of place attachment. Their model is particularly suited for this study, as it has been developed in the context of a rural community. Our subsequent goals are threefold. First, we gauge levels of place attachment among residents. Second, we assess how and to what extent place attachment differs among residents. In other words: we are interested in the individual-level predictors of place attachment. Third, moving beyond a quantitative perspective, we also seek to gain a deeper understanding of residents' experiences and meanings of place. These aims are reflected in the following research questions:

What are the levels and predictors of (different dimensions of) place attachment for residents of shrinking rural regions?

What are the meanings these residents ascribe to place and place attachment?

In answering these questions, we turn to a comparative case study of two largely rural regions that are experiencing population decline: Sogn og Fjordane in Norway, and Noord Friesland in the Netherlands. To address the first question, we conducted a tailor-made survey among the residents of Sogn og Fjordane (N = 471) and Noord Friesland (N = 484). We analyze these data through multivariate regression models. To further grasp the meanings of place attachment in the individual biographies of residents, we subsequently conducted in-depth semi-structured interviews with residents of both regions (N = 10 and N = 8 respectively).

The paper progresses as follows: the next section presents a literature overview of studies on place attachment, key predictors and the particular case of shrinking regions. We then elaborate on our data and methods, before describing the specific context of both regions. Subsequently, our quantitative and qualitative findings on the levels, predictors and meanings of place attachment feed into a conclusion section.

2. Literature review

2.1. Place attachment and belonging

The concept of place attachment is an extensively researched theme within several scholarly disciplines and at different geographical scales. Place attachment finds its roots in humanistic geography, where scholars such as Relph (1976), Tuan (1974, 1977) and Buttimer (1980) introduced the concept 'sense of place' to describe the emotional bond between the individual and the place. A few decades later a range of other terms have been brought into use, ranging from sense of place, sense of belonging, feeling at home and place attachment, used side by side in many different disciplines, often drawing on different methodologies (Hidalgo and Hernández, 2001). Place attachment has been described as an affective or emotional bond between people and specific places (Hummon, 1992; Shumaker and Taylor, 1983) or to emphasize the cognitive connection to a particular setting (Low and Altman, 1992). Some others pointed to the difficulty to disentangle place attachment from residential satisfaction (Hidalgo and Hernández, 2001). Although different definitions exist, we define place attachment in this research as: a (positive) bond that develops between people and their environment, which connects people to local places through different dimensions – e.g. personal, community and natural environment context (Hummon, 1992; Low and Altman, 1992; Raymond et al., 2010; Shumaker and Taylor, 1983; Williams and Vaske, 2003).

Following Raymond et al. (2010), we operationalize place attachment as a four-dimensional concept,¹ consisting of place identity, place

dependency, social bonding and nature bonding. Place identity refers to general feelings about a specific place, both physically and symbolically, that contribute to who we are and how we define ourselves. Place dependency entails a functional connection between the place and the individual and the dependency on a place, e.g. the dependency on a place for employment. Social bonding represents the mutual social interaction between the individual and other people like family and friends resulting in a feeling of belonging. Nature bonding refers to the connection between an individual and the physical environment, both in terms of explicit nature characteristics and in terms of implicit meaning (e.g. historical meaning of the landscape).

Besides place attachment, we draw on the more qualitative concept of *sense of belonging*, which can be defined as 'a sense of ease with one's surroundings' and emphasises the importance of belonging in a context of the self and society (May, 2011, p.372). Following May (2011) and Antonsich (2010), belonging can be distinguished in two ways. On the one hand personal *place belongingness* entails a feeling of being 'at home' and sense of self. On the other hand, there is a *politics of belonging* where the identity of individuals is created by interacting with others and hence distinguishing between people that are similar and different resulting in a clear distinction between in and outsiders. This is in line with Massey (1994, pp. 168–169) who states that place identity is shaped through interaction with others.

The relationship between the individual and place attachment is multi-faceted. While a positive relation can contribute to the wellbeing of an individual (Junot et al., 2018; Rollero and De Piccoli, 2010; Scannell and Gifford, 2017), a negative relationship can result in place-based displacement and a loss of belonging, e.g. when the physical environment drastically changes (Davidson, 2009; Duyvendak, 2011; Pinkster, 2016; Rollero and De Piccoli, 2010). Pinkster (2016) described how residents of working class urban neighborhoods experienced a loss of belonging due to neighborhood changes. Similarly, within a rural context the in-migration of gentrifiers could also lead to processes of rural gentrification and displacement (Phillips et al., 2021). Furthermore, people can demonstrate an emotional attachment to a certain place, demonstrated by a strong aesthetic and sensory attachment to the environment (Pinkster and Boterman, 2017). These studies underscore that feelings of home can relate to home as a physical as well as symbolic place (Antonsich, 2010).

2.2. Place attachment: scale and predictors

When studying place attachment, it is important to consider scale. Most place attachment research has been conducted at the neighborhood level, because residential satisfaction and attachment are typically rooted in the neighborhood, making this the most commonly used spatial context (Hidalgo and Hernández, 2001; Lewicka, 2011). In a 2010 study, Lewicka found 70% of studies on place attachment focusing on the neighborhood, 20% on the dwelling and 10% on other scales. Several scholars emphasize the importance of spatial scale for attachment (Hidalgo and Hernández, 2001; Low and Altman, 1992; Sebastien, 2020). Furthermore people could feel attachment to multiple geographical scales in varying degrees, and different spatial scales can be related to different forms of attachment. Hidalgo and Hernández (2001, p.279) for example described in their study that physical attachment was observed strongest in relation to the city, while social attachment related more closely to the actual house. Following Feldman (1990), residents can also develop a wider 'settlement identity', when residents identify themselves in relation with a wider landscape, for instance when they speak of themselves as 'mountain persons' or 'small town persons' (Feldman, 1990, p.202).

Literature on place attachment in non-urban areas is scarce (Hidalgo and Hernández, 2001). The few studies conducted within rural areas, report relatively high levels of attachment (Anton and Lawrence, 2014; Hollander, 2011; Lewicka, 2005) with place identity playing an important role as the choice for rural living is partly driven by a

¹ In contrast to Raymond and colleagues (2010), we capture 'social bonding' as one dimension, not distinguishing between family and friends bonding. We further consider place identity and place dependency as two separate concepts, rather than two poles of the same concept.

symbolic connection to specific attributes of the area (McCool and Martin, 1994) such as social connections or environmental qualities (Gieling et al., 2017). Studies conducted within the rural context show that specific local characteristics play an important role in shaping belonging to rural village culture. Besides peace and quiet (Haartsen and Stockdale, 2018), the nostalgic aspect of rural village life is important as well. Stockdale et al. (2018) observe in their research that rural residents develop a sense of belonging by contrasting their lifestyles with those of urbanites. They “report nostalgically about the values that they perceive have been lost from cities but retained in the rural” (ibid., p.8), hence demonstrating a division between in and outsiders in valuing social and physical characteristics of the rural village life.

Place attachment is particularly relevant to study in places facing population decline (Haartsen and Venhorst, 2010). Although economic activity and education are often considered prime reasons for longer-distance moves (Fielding, 1992; Kooiman et al., 2018), place attachment is a strong predictor of staying in the area and reduces moving incentives (Barreira et al., 2019; Clark et al., 2017; Guimarães et al., 2016; Westin, 2016). Place attachment can also have indirect positive effects via the willingness to contribute to the physical place. While place attachment in general can lead to environmentally responsible behavior (Gosling and Williams, 2010; Vaske and Kobrin, 2001), it can also motivate residents to get involved in strategies to face population decline as an opportunity rather than a threat (Hospers, 2013).

At the individual level, demographic, socio-economic and socio-cultural factors shape place attachment. Length of residence is often seen as the best predictor for place attachment, also when controlled for age (Lewicka, 2005, 2010, 2011; Westin, 2016). Individual place attachment enhances the older one is, and the longer one is living at a certain place (Anton and Lawrence, 2014; Hidalgo and Hernández, 2001; Lewicka 2010). Relatedly, though hardly taken into account, speaking the local language may also enhance attachment (Tulloch, 2006). Additionally, women have the tendency to feel more attached than their male counterparts (Anton and Lawrence, 2014; Westin, 2016). Some studies show that having children is a negative predictor for home attachment (Brown et al., 2004; Lewicka, 2010) while family ties and roots may enhance it (Clark et al., 2017).

Past research demonstrates that people with a lower education level are generally more attached to place (Lewicka, 2005; Rollero and De Piccoli, 2010). Furthermore, residents with high income and education levels are in general more mobile resulting in weaker local bonds. Conversely, homeownership may positively relate to attachment, as owners tend to be more involved and socially interactive with their neighbors. This is at least in part a selection effect, but may also relate to homeownership’s economic investment function (Hidalgo and Hernández, 2001; Lewicka, 2011; Mesch and Manor, 1998).

2.3. Shrinking regions

Although the concept of shrinkage is often used to refer to a declining number of residents, it represents a more complex process, with a reciprocity between economic, demographic, social and cultural processes. It is triggered by the onset of economic decline, with industries closing down and local job opportunities waning. Labour and capital have become more mobile as a consequence of globalization and the shift towards more cognitive-cultural modes of production in the Global North (Bontje and Musterd, 2012; Martinez-Fernandez et al., 2012; Scott, 2011). In recent decades, the result has not only been a reshuffling of “winning” and “losing” regions, but also an increase in regional socio-spatial disparities (Hochstenbach and Arundel, 2020; Hoekstra et al., 2020) and an increase in left-behind places (Rodríguez-Pose, 2018). Demographic developments such as population ageing, declining fertility rates and changing household composition can further spur decline, also due to shifting residential preferences. The residential orientation of younger adults is increasingly urban as they postpone

settling down (Buzar et al., 2005; Hochstenbach and Boterman, 2018) with affluent and upwardly-mobile young adults particularly likely to leave shrinking regions (Faggian and McCann, 2009; Fielding, 1992; Kooiman et al., 2018).

Population decline hits different types of areas, such as deindustrializing cities, peripheral regions and rural communities. To our knowledge, most research on shrinking areas in the European context concerns urban areas, often those facing deindustrialization (Bontje and Musterd, 2012; Guimarães et al., 2016; Haase et al., 2016; Martinez-Fernandez et al., 2012; Reckien and Martinez-Fernandez, 2011). Resulting findings may not be directly transferable to rural areas facing population decline (Hospers and Syssner, 2018). Studies that concern shrinking rural areas are often conducted in Eastern or Central Europe (Gentile et al., 2012; Tammaru and Sjöberg, 1999; Ubarevičienė and Van Ham, 2017). Studies that do focus on the rural mostly concern migration motives (Bijker et al., 2015; Nedomysl, 2008; Stockdale, 2004) and particularly the propensity to return after finishing education (Bjarnason and Thorlindsson, 2006; Haartsen and Thissen, 2014; Rauhut and Littke, 2016; Rérat, 2014a, 2014b; Thissen et al., 2010; Trell et al., 2012) rather than focusing on stayers (Lengerer et al., 2022; Stockdale and Haartsen, 2018). Our present study therefore focuses on a relatively understudied class of places: rural regions facing population and economic decline. Within this specific regional context, we focus on levels and experiences of attachment of those that stay put.

3. Data and methods

For this paper, we applied an explanatory sequential mixed methods design (Creswell and Plano Clark, 2018). We first collected and analyzed quantitative survey data before doing qualitative in-depth interviews. The former inform our understanding of levels of place attachment and their individual predictors, while the latter elaborate on residents’ experiences of place and the meanings they ascribe to them.

3.1. Quantitative research

Our quantitative research focuses on all adult residents (aged 18 or older) living in Sogn og Fjordane or Noord Friesland. Survey data were collected between November and December 2019 in Sogn og Fjordane, and March and May 2020 in Noord Friesland. The survey was distributed through municipal and local interest-organizations who published the survey on their website, social media pages and newsletter. Additionally, the survey was distributed through social media pages mainly moderated by local residents. The questionnaire was written in the language of the country, i.e. Dutch and Norwegian (*bokmål*), to enhance respondents’ understanding and therefore internal reliability. A total of 1249 respondents filled in the survey. Cases with missing answers on any of the included variables (22.7%), respondents below 18 years old (0.2%) and those who did not live in the area (0.6%) were excluded from the analyses, resulting in a final sample of 955 respondents.

The survey consisted of 52 closed multiple choice questions, focusing on residential and migration history of the respondent, their parents and potential partner, reasons for moving, evaluation of place attachment and its different dimensions, wishes to move and background information. In operationalizing place attachment as our key dependent variable, we followed Raymond et al. (2010) by distinguishing the dimensions of (1) place identity, (2) place dependency, (3) social bonding and (4) nature bonding.

We measure each dimension of place attachment using four or five Likert-scale questions, such as ‘I am proud of Sogn og Fjordane’, ‘The fjords and mountains are important to me’ and ‘I would miss the people in Friesland if I would live somewhere else’. These statements were scored by the respondent on a Likert-scale from 1 (totally disagree) to 5 (totally agree). To enhance internal validity and reduce response bias, we used some negative-wording questions. Additionally, the statements have been checked for coherence and measurement of the same concept

Table 1
Descriptive statistics of modelled variables per country and combined.

	The Netherlands		Norway		Total	
	%	Mean	%	Mean	%	Mean
Place attachment (1–5)		4.0		4.3		4.1
Sex: female (ref: male)	63.8		66.7		65.2	
Age		47.8		45.3		46.6
Length of stay (% of age)		87.2		78.4		82.9
Income						
Low	24.4		10.8		16.7	
Medium	42.1		62.4		53.1	
High	10.1		18.0		14.0	
N/A	23.3		8.7		16.1	
Education level						
Low	19.8		15.3		17.6	
Middle	34.3		22.7		28.6	
High	45.9		62.0		53.8	
Employment: full-time (ref: other)	34.7		65.6		49.9	
Partner raised in the region (not)	66.3		63.1		64.7	
Parents raised in the region (ref: both)						
One	13.4		25.7		19.5	
None	14.5		19.7		17.1	
Speaks regional dialect/language (ref: no)	83.9		81.7		82.8	
Norway (ref: the Netherlands)					49.3	
N	484		471		955	

(Cronbach's Alpha: 0.937). The final score on place attachment was measured by taking the unweighted mean of the four dimensions, resulting in an interval variable on a scale from 1 to 5.

We estimated various (OLS) linear regression models to assess the individual-level predictors of place attachment, adding interaction terms to unravel region-specific patterns. Table 1 presents the descriptive statistics for the independent variables in our presented models. We also ran additional models including other variables such as housing tenure but these did not yield significant relations or substantially improve model fit. There are some biases in our data: females and the highly educated are overrepresented. While these biases may skew our descriptive findings, they are unlikely to influence associations between individual-level predictors and place attachment. Data were checked for outliers and multicollinearity. We use robust standard errors (Huber Sandwich Estimator) to account for some heteroskedasticity in our models.

3.2. Qualitative research

Following up on the surveys, we conducted 18 interviews with residents living in one of the two shrinking areas (10 in Sogn og Fjordane, 8 in Noord Friesland). Of the 955 respondents who completed the survey, 121 (N = 57/NL = 64) indicated to be willing to participate in an in-depth interview. From these respondents, we selected interviewees based on diverse demographic characteristics (e.g. age, gender) and from a diversity of residential places (both larger and smaller villages) in order to gain different perspectives.

The interviews were semi-structured, with a topic list serving as a road map for the interview. Respondents were asked to elaborate on their residential history, places of importance, and attachment to their region. Respondents were asked to elaborate on their local environment to gain a rich, in-depth understanding of their attachment. Interviews lasted between 45 and 90 minutes, and were conducted in Dutch or Norwegian. They gave informed consent and all agreed to record the interview. Data collection in Sogn og Fjordane took place before Covid-19 (December 2019), but in Noord Friesland this was done in the midst of the pandemic (April–June 2020). This meant that while interviews in the former were typically conducted in public spaces or at the respondents' homes, in the latter they had to be conducted online using Zoom. The necessity to conduct interviews online may have created more physical and emotional distance. The first author of this study carried out the survey, approached respondents and conducted the

interviews. She is a native Dutch speaker and fluent in Norwegian. Norwegian interviewees were able to express themselves in their local dialect, while respondents in Friesland were interviewed in Dutch. We transcribed and analyzed the interviews using the software programme Atlas.ti, using the different dimensions of place attachment as a starting point.

4. Regional context

In this paper we analyzed levels and predictors of place attachment in two declining regions: Noord Friesland in the Netherlands, and Sogn og Fjordane in Norway (Fig. 1). For the purpose of our study, a key difference between both countries is the level of urbanity. Whereas the Netherlands is a densely populated and urbanized country, Norway is characterized by highly dispersed and more rural population patterns. 85% of regions in the Netherlands are characterized as mostly urban, while only 12% of the regions in Norway are considered predominantly urban and 35% is characterized as close to a city (Brezzi et al., 2011; Haartsen et al., 2003). Although Norway is characterized by a relatively low population density, the majority of settlements (82%) are categorized as *tettsteder* (urban areas) (SSB, 2021). By comparing these countries, we can gauge the extent to which levels and predictors of place attachment are similar across contrasting contexts.

We selected the two regions because they are experiencing both population and economic decline. Noord Friesland is located in the county of Friesland in the north of the Netherlands, and consists of two administrative areas (northeast- and northwest Friesland), and six municipalities.² The region has a total population of 185,595 residents (2020). The landscape of the area is characterized by dykes along the Wadden Sea and church villages. The regional economy – centered around agriculture, construction, industry, tourism and regional services – is lagging behind national trends. The region's population is expected to decline 6% by 2040 (CBS, 2019).

Sogn og Fjordane is a county in the south of Norway, situated along the North Sea. Towards the sea, the landscape flattens out and a rocky coast appears. It is characterized by its deep fjords and steep mountains, up to 2400 m above sea level inland. The region's economy is mostly based on natural resources, such as fishing and agriculture but also

² Noardeast-Fryslân, Dantumadiel, Achtkarspelen, Tytsjerksteradiel, Waadhoeke and Harlingen.

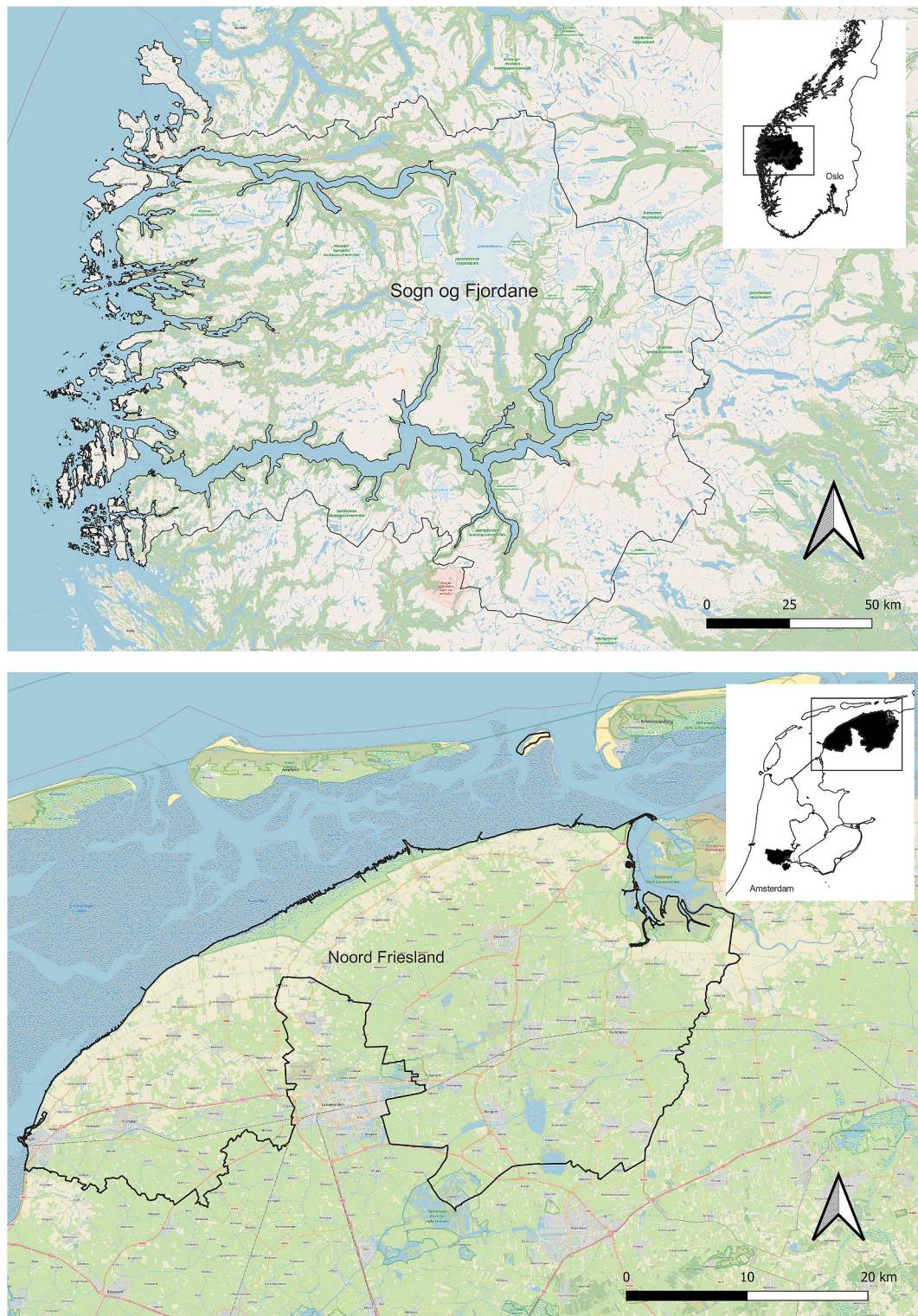


Fig. 1. Maps of Sogn og Fjordane (top) and Noord Friesland (bottom). Data source: CBS/Kadaster (2020) and Geonorge (2019).

tourism and renewable energy (Sogn og Fjordane Fylkeskommune, 2014). The county consists of 26 municipalities and has a total population of 109.774 (in 2019).³ There are some variations in population

³ The county of Sogn og Fjordane existed at the time of the research project, but since the first of January 2020, the county has merged with Hordaland into 'Vestland'.

development within the county. Some municipalities, especially the remote areas, face substantial population decline, while the more urbanized municipalities have a positive growth rate. Overall, Sogn og Fjordane's population is projected to decline 2% by 2040 (SSB, 2020). The region is therefore considered, and indeed treated, both in policy and public debate as stagnating or declining.

Both areas share various important common characteristics. In both regions policies are in place to counter population decline and preserve

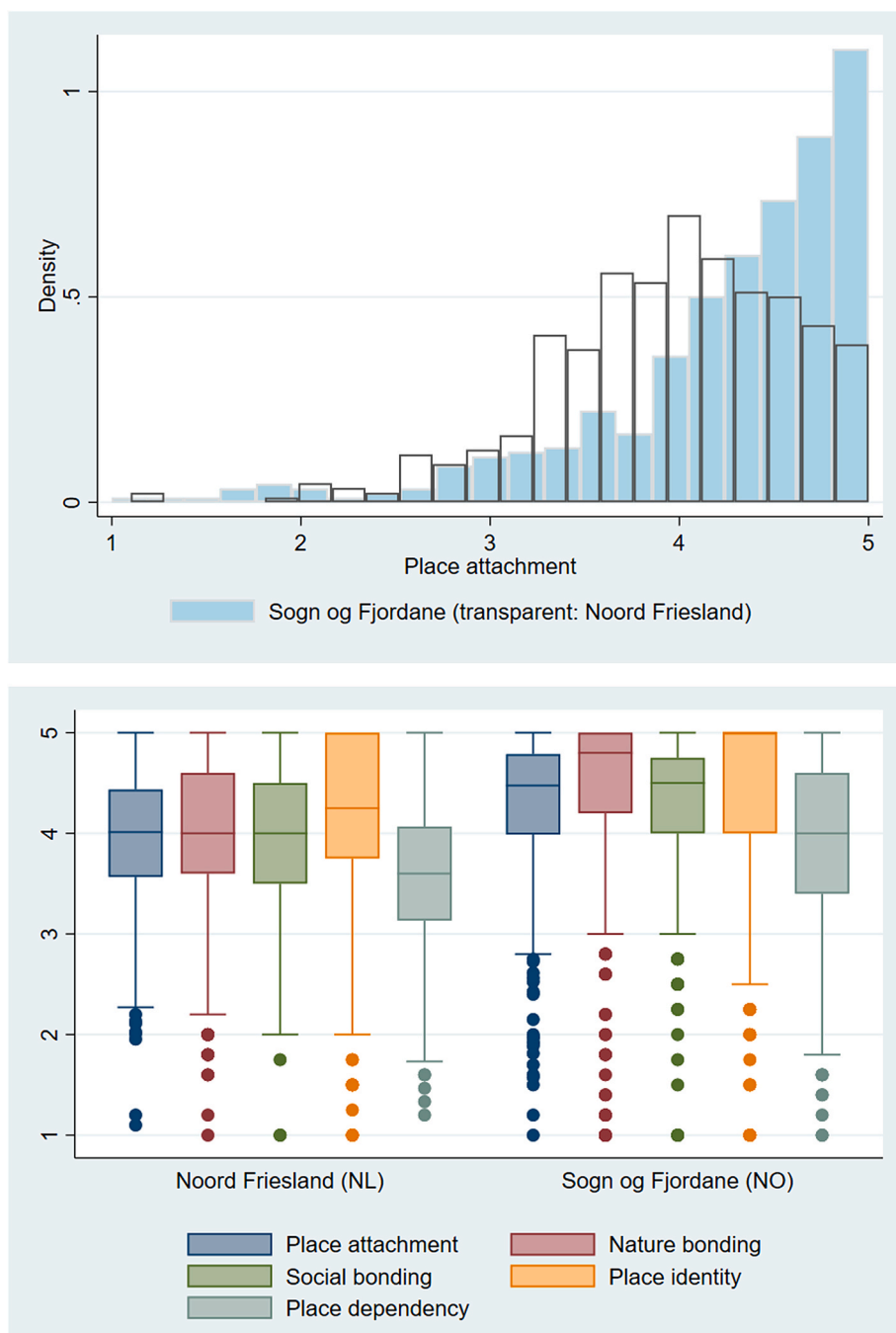


Fig. 2. Histogram of self-reported place attachment in Sogn og Fjordane (Norway) and Noord Friesland (the Netherlands) (top panel) and box plots of self-reported sub dimensions of place attachment in both regions (bottom panel).

facilities and accessibility within the region, including explicit programs in Sogn og Fjordane to attract new residents (e.g. Grimsrud and Aure, 2013). In addition, while overall urbanity levels are highly different between both countries, these two regions belong to the least urbanized in their respective countries. Another similarity is that both regions have a common local language (Netherlands) or dialect (Norway), which distinguishes them from the rest of the country. In Friesland, Frisian is the official minority language that is written and spoken. In Sogn og Fjordane, the first written language in most municipalities is nynorsk⁴

⁴ To cover multiple dialects, we asked in the survey about ‘a dialect spoken in Sogn og Fjordane’.

(the second written language in Norway), which was developed in the 19th century based on west-Norwegian dialects. Effectively, nynorsk represents the spoken dialects in these regions. We considered it important that the local dialect or language should have more or less the same position in both areas, as this could play an important role in shaping place attachment (Tulloch, 2006).

5. Dimensions of place attachment

Respondents in both Sogn og Fjordane (Norway) and Noord Friesland (the Netherlands) report relatively high levels of attachment to their region (Fig. 2, top panel). On a scale of 1–5, mean levels of place attachment stood at 4.26 in Sogn og Fjordane and 3.95 in Noord

Friesland. These results thus underscore that place attachment is higher among Norwegian respondents. While scores close to 5 are most common in Sogn og Fjordane, scores in Noord Friesland mostly hover around the 4 mark.

Norwegian respondents also consistently report higher scores on the four dimensions of place attachment than their Dutch counterparts (Fig. 2, bottom panel). There are also relative differences: in Noord Friesland, place identity scores highest among the dimensions with a mean score of 4.15, while social bonding and nature bonding follow with mean scores of 4.04 and 4.03 respectively. Conversely, in Sogn og Fjordane, the highest scores were reported for nature bonding (4.42) and place identity (4.41). Social bonding and place dependency follow at 4.35 and 3.85 respectively. Respondents in both regions thus emphasize the importance of their region’s identity and their attachment to it. The nature component appears substantially more important in Sogn og Fjordane than in Noord Friesland. This reflects that the former region is characterized by a particularly low population density and extensive nature, while the latter is dominated by (often historic) villages and agriculture – although respondents certainly make reference of the nearby Wadden Sea and its intertidal wetlands.

5.1. Multivariate analyses

To gauge the association between individual-level characteristics and levels of place attachment, we apply multivariate modelling. Our specific aim here is to identify individual-level predictors of place attachment, and to identify to what extent these are similar between both regions. To that aim, we first estimate regression models for both regions separately (Table 2), and then focus on a combined analysis with region-specific interaction terms (Table 3).

The country-specific regression models reveal various patterns, some of which differ between both regions and some of which show similarities (Table 2). In both Noord Friesland and Sogn og Fjordane, results show that females report significantly higher levels of place attachment than males. Furthermore, we also find that those in full-time employment are significantly more attached in both regions than those who are not. Other similar patterns are, unsurprisingly, that those speaking the local language and those who spend a larger share of their lives in the region report significantly and substantially higher levels of place attachment. Interestingly, income does not appear to be related place attachment.

There are also differences between both regions. In Noord Friesland, we find a positive association between age and place attachment, while respondents whose parents are not from the region are less attached.

Table 2
OLS regression models per country. Dependent variable: degree of place attachment.

	Model 1: Noord Friesland			Model 2: Sogn og Fjordane		
	Coef		P	Coef		P
Sex: female (ref: male)	0.203	***	0.001	0.246	***	0.000
Age	0.005	**	0.023	-0.001		0.557
Length of residence (% of age)	0.263	*	0.065	0.559	**	0.010
Income (ref: middle)						
Low	0.032		0.687	-0.034		0.798
High	-0.004		0.959	0.054		0.417
N/A	-0.038		0.590	-0.095		0.367
Education level (ref: middle)						
Low	0.268	***	0.001	-0.060		0.553
High	0.094		0.144	-0.091		0.241
Employment: full-time (ref: other)	0.110	*	0.066	0.164	**	0.022
Partner raised in the region (not)	0.046		0.460	0.113	*	0.091
Parents raised in the region (ref: both)						
One	-0.180	*	0.055	0.000		0.996
None	-0.320	***	0.003	0.098		0.423
Speaks regional dialect/language (ref: no)	0.381	***	0.000	0.539	***	0.002
Constant	2.954	***	0.000	3.144	***	0.000
N	484			471		
R ²	22.6			23.0		

Respondents with a lower education are also significantly more attached to their place than those with a middle education level. All these associations didn’t turn out significant in Sogn og Fjordane. Conversely, while statistically significant in both regions, we find substantially stronger associations of sex, length of residence and speaking the local language, with place attachment in Sogn og Fjordane.

5.2. Interaction terms

We subsequently ran models combining both regions (Table 3, model 1) and adding interaction terms (models 2 and 3). These models return similar results to those discussed above: females, those with a lower education, those in full-time employment and those who speak the local language report significantly higher levels of place attachment. Length of residence also shows a strong positive association. Finally, the model confirms that respondents from Sogn og Fjordane report significantly higher levels of place attachment than those from Noord Friesland.

In the second model we add an interaction effect between education level and region, with the associated margins plotted in the top panel of Fig. 3. This plot highlights that while place attachment does not significantly differ along the lines of education in Sogn og Fjordane, there is variation in Noord Friesland with significantly higher levels of place attachment for the low educated.

Models showed that females and those speaking the local language are significantly more attached than others. The third model therefore adds a three-way interaction term between sex, language and country, with the predictive margins plotted in Fig. 3 (bottom panel). The interaction highlights an interesting pattern: the Dutch case confirms positive associations of sex and language with place attachment, but in the Norwegian case we see a particular interaction between sex and language. That is, among Norwegian males, there is no significant difference between those that speak the local language and those that do not, but among females there is a clear substantial and significant difference.

5.3. Additional analyses

In addition to the presented models, we ran alternative models including a host of other variables such as housing tenure and household composition. These variables did not show significant associations and did not substantially alter outcomes on other variables. Furthermore, we ran regression analyses on the different dimensions of place attachment: place identity, place dependency, social bonding and nature bonding (see Appendix A). Statistical associations are generally similar to those

Table 3
OLS regression models per country with interaction terms. Dependent variable: degree of place attachment.

	Model 1			Model 2			Model 3		
	Coef		P	Coef		P	Coef		P
Sex: female (ref: male)	0.221	***	0.000	0.221	***	0.000	0.222		0.131
Age	0.002	*	0.083	0.002		0.236	0.002	*	0.081
Length of residence (% of age)	0.372	***	0.002	0.379	***	0.001	0.377	***	0.001
Income (ref: middle)									
Low	0.044		0.521	0.036		0.596	0.047		0.500
High	0.040		0.442	0.038		0.462	0.042		0.425
N/A	-0.050		0.382	-0.046		0.427	-0.044		0.450
Education level (ref: middle)									
Low	0.153	**	0.014	0.305	***	0.000	0.148	**	0.018
High	0.028		0.572	0.100		0.116	0.028		0.568
Employment: full-time (ref: other)	0.154	***	0.001	0.146	***	0.001	0.150	***	0.001
Partner raised in the region (not)	0.085	*	0.059	0.083	*	0.067	0.088	*	0.055
Parents raised in the region (ref: both)									
One	-0.062		0.256	-0.067		0.218	-0.066		0.226
None	-0.141	*	0.085	-0.138	*	0.092	-0.143	*	0.081
Speaks regional dialect/language (ref: no)	0.440	***	0.000	0.445	***	0.000	0.449	***	0.001
Norway (ref: Netherlands)	0.316	***	0.000	0.479	***	0.000	0.484	***	0.006
Education level # Country									
Lower # Norway				-0.364	***	0.003			
High # Norway				-0.178	*	0.076			
Sex # Dialect/language # Country									
Male # Yes # Norway							-0.251		0.196
Female # No # Norway							-0.272		0.241
Female # Yes # Netherlands							-0.040		0.802
Female # Yes # Norway							-0.154		0.594
Constant	2.874	***	0.000	2.840	***	0.000	2.882	***	0.000
N	955			955			955		
R ²	24.6			25.3			25.1		

in the main models. There are some interesting exceptions though: while income did not show any significant association with overall attachment, we do find that low-income residents report somewhat higher levels of place dependency – their livelihood may be tied to the region – while high-income residents report higher levels of nature bonding. Age is only significantly and positively related to nature bonding. Furthermore, parental origin is only significantly associated with place identity and social bonding. This is not the case for place dependency and nature bonding. This intuitively makes sense: residents whose parents are from the region may have a stronger social connection to the area, and their identity may be more intertwined with it. These models suggest that although there are strong common patterns across dimensions, people with different characteristics may be attached to different dimensions of place.

6. Qualitative results

6.1. Weak ties and casual contacts

The qualitative data, in-depth interviews with ten residents of Sogn og Fjordane and eight of Noord Friesland, give deeper insight into how these residents relate to their respective region. Interestingly, respondents from both regions did not raise (the prospect of) population and economic decline as a prominent topic.

Although respondents certainly acknowledge the importance of the proximity of friends and family, they place more emphasis on the importance of *weak ties* and *casual contacts* feeding their attachment to place. One respondent from Noord Friesland remarked that “all village residents say hello to each other, even to newcomers they don’t know, that doesn’t matter. You get sucked into this and I can appreciate it.” Various other respondents similarly remarked how they appreciate casual and unplanned conversations in the street. Relatedly, respondents emphasize how village life is characterized by high levels of togetherness (*saamhorigheid*) and social cohesion. This is evidenced by an active local social life, e.g. through a volunteer-run community center and the organization of activities particularly for the elderly. In addition,

respondents value the familiarity with other residents (e.g. “you know who works at the local supermarket, and otherwise you know the family of that person”) contributing to a feeling of social bonding. Various respondents subsequently argue these examples of neighborliness and togetherness add to a feeling of familiarity and *positive social control*:

“You have a sort of social control, that’s also safety, people look after each other in a positive way [...] You know each other and you know a bit how things go, so that’s also safety which is good. You tend to forget about it because it’s almost normal for us, but that is really how it still goes around here.” (Noord Friesland, male, 64 years old).

More or less explicit in their narratives is the overarching idea that such examples of neighborliness and togetherness may have been lost elsewhere (e.g. in larger cities), but continues to be part of village life. They subsequently identify themselves as typical ‘village persons’ (also see [Feldman, 1990](#)).

Respondents from Sogn og Fjordane very similarly emphasize how their social belonging is shaped by the many casual contacts with neighbors, positively referring to the ability to spontaneously visit each other. Interestingly, various respondents also refer to the region’s geography in this regard, suggesting a shared experience of isolation, being surrounded by fjords and mountains. The lack of a clear center such as a larger city is further said to shape a regional rather than highly localized belonging:

“There’s not a whole lot of people living in Sogn og Fjordane, we have to stick together against the rest as it were. There’s many small places here. You have to travel long distances using the ferry, but on the other hand that also connects us. You don’t have the same attitude towards time and distance compared to when you live in a city. It is different from many other places, that also makes it unique.” (Sogn og Fjordane, female, 29 years old)

6.2. Identity through language

Interviewed respondents from both Noord Friesland and Sogn og

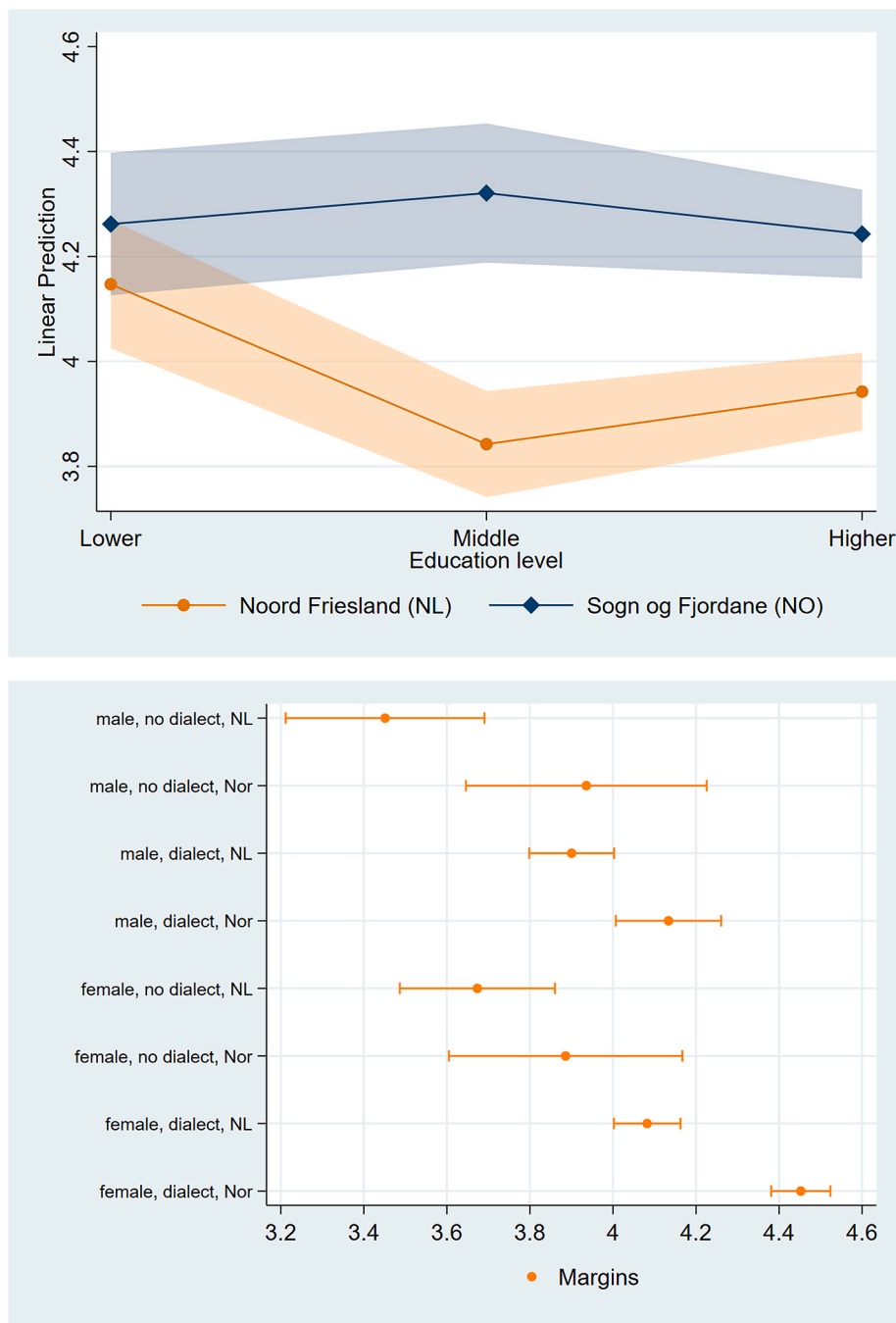


Fig. 3. Predictive margins for the interaction between education and country (top panel), and between sex, (command of the local) language and country (bottom panel). See Table 3, models 2 and 3 for accompanying regression models.

Fjordane explain how the regions are closely intertwined with their identities. Personal and regional identities are linked through specific customs, traditional activities and assumed personality traits such as ‘typical’ dry humor. Especially important though is regional language or dialect, as the quantitative analyses above also indicate. Most respondents acknowledge language as being central to the identity of the region and, by extension, their own identity. A respondent discussing Frysian language explains:

“For me it’s just very important, it’s my mother tongue and it’s of course a minority language and it is important it continues to exist. So I speak and write it, and if someone doesn’t understand it I switch to Dutch. But only if they really don’t understand it. If someone has lived here for a longer period and still doesn’t understand, then I

think: if I migrate to America I also have to speak English.” (Noord Friesland, female, 62 years old)

A respondent from Sogn og Fjordane echoes this view:

“My dialect is important, because it is such a big part of my identity, speaking the ‘sogning’ dialect. I will never let go of that. I speak ‘sogning’ or English, nothing in between.” (Sogn og Fjordane, female, 57 years old)

These quotes are exemplary for a widely felt sentiment that local language, as well as regional heritage more broadly, are threatened to be lost and therefore require active preservation. A consequence is that language becomes an instrument not only to shape their own identity (“by recognizing the same dialect, you know s/he is *one of us*”), but also

to create outsiders – newcomers should adapt by learning the language – and to actively oppose the dominant culture in the country that presumably threatens to outstrip regional heritage. Local language makes explicit where you are rooted, especially in Norway where dialects differ from village to village, together as it has (sub)regional similarities in dialects which enhances a subregional attachment. Local language therefore embodies pride of coming from and belonging to a specific place.

Interestingly, though, while many Frysian respondents share such a view they do simultaneously put it into a wider perspective, arguing this sentiment isn't specifically unique. They communicate the expectation that people from many other regions experience an essentially similar place identity:

“Of course I am Frysian, I speak Frysian and feel Frysian, but that would not have been different if I grew up in Groningen I think.” (Noord Friesland, female, 46 years old)

This stands in sharp contrast to most Sogn og Fjordane respondents, who do emphasize a perceived unique position of their region vis-à-vis other regions, citing its isolated position and very low population density as factors.

6.3. Nature as home

The quantitative analyses suggested that in both regions, but especially in Sogn og Fjordane, nature plays an important part in shaping place attachment. In the interviews, respondents elaborate on the beauty of local nature – the fjords, mountains and forests – and the time they spend in it. But their relationship with local nature goes deeper than that. Several respondents mention how natural beauty fills them with pride, and how nature is closely connected to who they are:

“Yes, nature is very different here. When I am gone from the area, and then when I return, I know exactly where ‘my nature’ begins again.” (Sogn og Fjordane, male, 65 years old)

It is remarkable how multiple interviewees similarly refer to “my nature,” demonstrating a particularly close and personal connection:

“I used the nature often when I was growing up, so it feels super good to be back again. I have a lot of memories about it [nature], I love this type of landscape and how it looks. That has to do with the many memories I have from my childhood.” (Sogn og Fjordane, female, 35 years old)

Several respondents echo similar views of how local and regional nature shapes their identity, not in the least because it takes them back to their childhood or youth. Nature endows them with a sense of familiarity which ties them to their area, both functionally and emotionally. Functionally as they know the area well and know all the (hiking) trails for instance. Emotionally, because it gives them a feeling of safety – explicitly referring to the protective feeling the tall and steep mountains give. Other respondents expressed that they feel safe in a coastal landscape and feel rather trapped surrounded by steep and tall mountains. Nature, in other words, helps respondents feel rooted in the area, which translates into feelings of home.

Nature can also be a proxy for other feelings of attachment, for instance culture and the idea how local and regional identities tie into intergenerational histories. Family stories construct these identities, adding to a specific feeling of safety (“I feel safe here, [...] because 150 years ago they knew exactly where to build this house”) and respondents express a desire for *intergenerational continuity*, handing local family history over to the next generation:

“It's important that the farm is handed down to the next generations. The parents are very proud that a new generation can live on the farm, and can again raise a new generation.” (Sogn og Fjordane, female, 29 years old).

Those living in Noord Friesland also reveal attachment to local nature, though in somewhat different ways. In discussing nature, most interviewed respondents emphasized the open rural landscape with ample space and panoramic views. Several respondents associate this with a sense of freedom, while others use natural qualities to more or less implicitly create a contrast with other, more urbanized regions:

“You can *still* see the starry sky here, it is *still* dark here, it is *still* quiet here, relatively speaking, in the evening and at night. The fresh air, that's also an aspect of nature you not always dwell upon.” (Noord Friesland, male, 64 years old, emphasis added).

Several respondents from Noord Friesland further underscore the point how they associate the local open landscape with home, e.g. upon returning from somewhere else the spaciousness feels like “coming home.”

In sum, the interviews further underscore that place attachment in Noord Friesland and Sogn og Fjordane is multidimensional and complex. Social ties, regional identities and nature all feed a sense of local attachment and home. These dimensions are multifaceted themselves, and clearly relate to each other.

7. Conclusion

This paper has investigated levels and meanings of place attachment in two rural regions facing population decline, Sogn og Fjordane in Norway and Noord Friesland in the Netherlands, drawing on a combination of tailor-made quantitative survey data and in-depth resident interviews. From the findings, we can draw various key conclusions that we argue have wider applicability.

First, this paper underscores the importance of studying place attachment in rural settings, specifically rural settings facing the prospect of population and economic decline. Most research into place attachment and the related concept of belonging has been conducted in urban settings (Hidalgo and Hernández, 2001; Lewicka, 2011). In the context of regional population decline, studying place attachment can reveal *why* residents may decide to stay put, which may help to formulate policies to uphold regional livability and welfare. The paper further confirms the usefulness of the place attachment model of Raymond et al. (2010) for such settings. The model's key components of place identity, place dependency, social bonding and nature bonding map on to both residents' quantitative assessments and qualitative interpretations of place attachment.

From a geographical perspective, a key question is the relevant scale to study place attachment. The vast majority of urban studies center on the smaller neighborhood or dwelling level (Lewicka, 2011). In this study, we conceptualized attachment at the larger level of rural regions. Throughout the interviews, however, respondents reflected on feelings of attachment to multiple geographical scales. On the one hand respondents relate to forms of local attachment to their village or even residential street through the widespread emphasis on friendly but casual contacts with direct neighbors. Social relations shape place identities and attachment. Respondents project these social relations onto the region, resulting in a form of regional attachment, with respondents talking about ‘their’ region against the rest of the country in the face of rural-urban disparities. This is also clearly illustrated by the example of the commonly expressed feeling that the region has to stick together to withstand negative pressures from outside. Dialect or language often amplifies this either local, subregional or regional attachment. Future research could further unravel the multi-scalar dimensions of rural place attachment.

Second, our comparative study yields interesting insights by mostly highlighting similarities between the two case studies. In studying the levels and predictors of place attachment – the first research question informing our study – we find that respondents generally report high levels of attachment. This is in line with previous studies (Anton and Lawrence, 2014; Hollander, 2011; Lewicka, 2005). These likely reflect

stability among rural stayers despite both regions facing the prospect of future population loss and economic decline. Levels of attachment were still higher in Sogn og Fjordane than in Noord Friesland. Women, the employed, long-term residents and those speaking the local language report significantly higher levels of attachment in both regions. Differences also exist, e.g. we found lower-educated residents to be significantly more attached in Noord Friesland while no significant association for education could be found in Sogn og Fjordane.

Furthermore, in studying the meanings of place attachments – the second question of our study – the qualitative results demonstrate that individual biographies are not only set in but also shaped by the place of residence. Residents consider local customs, traditions and language an integral part of their identity, therefore deserving maintenance and protection. Particularly local language, or dialect, is emphasized as crucially shaping a sense of community, and attachment to the region. It is not merely a shared *social* identity though, an aspect commonly emphasized in studies of urban neighborhoods, but a *physical* one too. Respondents talk about the natural environment in terms of *their* (“my”) nature, and associate it with coming home, familiarity and security.

Third, in line with Stockdale et al. (2018), respondents from both regions construct narratives of living in a rural community where people still look after each other by maintaining warm though not necessarily strong contacts with neighbors. Following Moris (2021), residents construct a narrative of preserving a sense of (rural) normalcy that has been lost elsewhere. Cities, in contrast, become sites of anonymity, deviance, and disconnection from nature. In her study of a working-class Amsterdam neighborhood, Pinkster (2016, p.888) describes how residents frame their neighborhood “as existing quite separately from the rest of the city and functioning as a self-sufficient social system.” Similarly, this study finds rural residents constructing an image of living in a rural idyll lost elsewhere.

Yet, respondents suggest their rural idyll may be at risk, through a weakening of social ties and the erosion of local customs, traditions and language. This would pressurize place attachment and identity (see Massey, 1994). While other studies link such perceived threats to residents’ concerns over the influx of ‘other’ newcomers (Davidson, 2009), such population turnover appears mostly absent in both Sogn og Fjordane and Noord Friesland. One *implicit* concern may be that residents worry about future decline undermining local community life and economic base. Residents may respond by clinging onto their regional identities, emphasizing these, as various respondents for example expressed a reluctance to switch from speaking their dialect to either Norwegian or Dutch, and by opposing to the dominant national culture more generally. In a way, respondents express stronger concerns over an outside culture encroaching on their rural life than about outsiders actually moving in.

In conclusion, in this paper we have argued for studying place attachment in rural settings, specifically those facing shrinkage. Using both quantitative and qualitative methods we have demonstrated high levels of overall attachment, while unravelling the components, predictors and meanings of place attachment. We expect it to be fruitful to develop longitudinal research designs, keeping track of residents’ level of attachment as population decline unfolds. While our respondents report high levels of attachment, this may itself be the case of selective out-migration. Those lacking attachment or experiencing spatial dislocation may have disappeared from our radar. A longitudinal design may therefore give insight to what extent a drop in place attachment may be a predictor for subsequent regional out-migration.

Author statement

Marieke E. van der Star: Conceptualisation, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review and editing, Visualization, Project administration.; Cody Hochstenbach: Formal analysis, Writing – original draft, Writing – review and editing, Visualization, Supervision, Project administration.

Data availability

The data that has been used is confidential.

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Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jrurstud.2022.11.010>.

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