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Trouble in Paradise? Emotional and Social Loneliness Among International Retirement Migrants

Esma Betül Savaş[1, 2], Kène Henkens[1, 2, 3], and Matthijs Kalmijn[1, 4]

[1] Netherlands Interdisciplinary Demographic Institute, Royal Netherlands Academy of Arts and Sciences, University of Groningen

[2] Department of Health Sciences, University Medical Centre Groningen

[3] Department of Sociology, University of Amsterdam

[4] Faculty of Behavioural and Social Sciences, University of Groningen

People who migrate at a later age are vulnerable to loneliness: They are challenged to maintain social ties in the origin country while establishing new ties in the destination. In the present study, we investigate (a) the differences in loneliness levels between retirement migrants and older adults who reside in their country of origin (nonmigrants) and (b) the determinants of emotional and social loneliness among retirement migrants. We employ the survey of Dutch retirement migrants abroad (DRM, 2021: Henkens et al., 2022), including 4,995 Dutch retirement migrants residing in 40 destination countries and 1,338 nonmigrants residing in the Netherlands (aged 66–90). Our results showed that retirement migrants were socially lonelier than nonmigrants; however, they were not emotionally lonelier. Among retirement migrants, those who had lost contact with good friends in the country of origin were both emotionally and socially lonelier. Retirement migrants who had more neighbor contact and a higher sense of belonging to the destination were emotionally and socially less lonely. Furthermore, those who had lost contact with their children and had a higher sense of belonging to the Netherlands were emotionally lonelier. The present study presents new insights into the interplay between aging and migration by using a unique representative survey of individuals who migrated at a later age to a new country and points to the risks of the increasingly popular phenomenon of international retirement migration. Differences in levels and predictors of emotional and social loneliness highlight the importance of studying these dimensions separately.

Public Significance Statement

This study suggests that older adults who move abroad after the age of retirement are at a higher risk of loneliness than those who stay, especially social loneliness. It further highlights the importance of migration-related risk factors of loneliness, such as not being able to maintain ties with their adult children in the country of origin.

Keywords: loneliness, aging, migrants, lifestyle

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Esma Betül Savaş https://orcid.org/0000-0002-0989-4229

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Correspondence concerning this article should be addressed to Esma Betül Savaş, Netherlands Interdisciplinary Demographic Institute, Royal Netherlands Academy of Arts and Sciences, University of Groningen, Lange Houtstraat 19, 2511 CV, The Hague, The Netherlands. Email: savas@nidi.nl

Loneliness is a state individuals experience when they are not content with either the quality or the quantity of their social relationships (de Jong Gierveld, 1987). Older adults are particularly vulnerable to loneliness since they are susceptible to age-related changes and losses (Fry & Debats, 2002). Loneliness in older ages is a risk factor for lower well-being and adverse health outcomes and is associated with a higher mortality risk (Hong et al., 2023; Steptoe et al., 2013). There are numerous risk factors associated with loneliness in old age, including the loss of one's partner and friends, declining health, and loss of social roles through retirement (Dahlberg et al., 2022; Pinquart & Sörensen, 2001). Geographical uprooting is another risk factor of loneliness as individuals are challenged to create new social networks while still nurturing their ties with their older network (De Witte & Van Regenmortel, 2021; Fokkema, 2023; Weiss, 1973).

An extreme example of geographical uprooting is moving to a country with potentially different cultural norms and values. Especially those who migrate at older ages can be vulnerable to loneliness as leaving behind the familiar social and cultural environment and adapting to a new environment can generate loss and cause stress (Berry et al., 1987; van Campen et al., 2018). Migration studies have focused on the link between having a migrant status and loneliness in old age, showing that older migrants from non-European countries who migrated to Europe are particularly vulnerable to loneliness (Fokkema & Ciobanu, 2021). These studies have predominantly focused on vulnerabilities associated with the lower socioeconomic status and worse health conditions of labor migrants and their relatives (Fokkema, 2023; ten Kate, 2023). Most of the labor migrants in these studies migrated at younger ages; therefore, the focus has been on older migrants rather than on people who migrated at an older age. Until now, little is known about the role that the migration-related risk factors play for individuals who relocate when they are already older.

International retirement migrants are a distinct group of older migrants who move abroad around retirement age to a new country and are often driven by a pursuit of a better quality of life in a destination with a warmer climate, lower cost of living, and more tranquility (Spaan et al., 2023). Common examples of retirement migrants are British retirees in Spain, U.S. retirees in Mexico, and Japanese retirees in Malaysia, although the origin and destination countries have been expanding. Retirement migrants have been portrayed as relatively privileged as they migrate from wealthier Northern and Western countries to less wealthy Southern and Eastern countries (Repetti & Calasanti, 2023). Research shows that retirement migrants are often healthy and have the financial means and the desire to migrate (King et al., 1998; Savaş et al., 2023). Additionally, retirement migrants have fewer family and community ties in their country of origin compared to their nonmigrant counterparts; however, they more often have a partner (Savaş et al., 2024). Although retirement migrants report being satisfied with their lives (Savaş et al., 2022), they may still face struggles during their migration, such as not being able to make new close friends in the destination or losing their close ties due to their relocation. These struggles related to migration, if persistent, may lead to feelings of loneliness.

To fully understand the development of loneliness, Weiss (1973) had distinguished between two dimensions: social and emotional loneliness. Emotional loneliness often stems from the absence of an intimate figure, such as a partner or a best friend, while social loneliness stems from the absence of a broader group of contacts and a sense of community. Underlying this typology of loneliness is the argument that different types of relationships may meet different interpersonal needs (Weiss, 1973). When a specific type of relationship is lost or nonexistent, the resulting sense of loneliness depends on the particular need that relationship used to satisfy. Weiss (1973) argued that attachment and social integration are two of the most important interpersonal needs: While attachment is provided by relationships in which the person receives a sense of safety and security, social integration is provided by a network of relationships in which individuals share interests and concerns. According to Weiss (1973), feelings of emotional loneliness arise when the need for attachment is unmet, while feelings of social loneliness arise when the need for social integration is unmet. Due to their conceptual differences, social and emotional loneliness may require different ameliorations. For example, interventions targeting emotional loneliness may focus on enhancing interpersonal skills and building supportive relationships, while interventions targeting social loneliness may aim to increase social participation and community engagement (Weiss, 1973).

Researchers have shown that although emotional and social loneliness dimensions are somewhat correlated, they have several different predictors (Dahlberg & McKee, 2014; de Jong Gierveld et al., 2009; Fierloos et al., 2021). For example, older age and low educational background predicted higher levels of social and emotional loneliness in a study studying 2,251 older adults, while living without a partner was associated only with higher emotional loneliness (Fierloos et al., 2021). Furthermore, a study conducted with 1,255 older adults in Britain showed that men were more likely to show higher levels of social loneliness, whereas those who did not receive informal care were more likely to show higher levels of emotional loneliness (Dahlberg & McKee, 2014). Research studying the relationship between quality of marriages and emotional and social loneliness in later life found that smaller social networks and less contact with children predicted higher emotional and social loneliness (de Jong Gierveld et al., 2009). However, women in second marriages experienced higher emotional loneliness, whereas older men with disabled spouses experienced higher social loneliness.

Loneliness has come up as a theme in few qualitative studies focusing on retirement migrants (Ahmed & Hall, 2016; Huber & O'Reilly, 2004; Oliver, 2017; Sampaio, 2018), some even considering it as one of the "black spots in paradise" (Huber & O'Reilly, 2004). Researchers have noted that people were hesitant to discuss the subject during interviews due to the negative connotation loneliness has (Huber & O'Reilly, 2004). Because international retirement migrants constitute a small and dispersed group, the extent to which retirement migrants feel lonely and the predictors of different dimensions of loneliness have not been thoroughly investigated with nationally representative data. Using a unique sample design, we collected a large-scale representative national survey of international retirement migrants from the Netherlands in 40 different destination countries (Henkens et al., 2022). Using these new data, we investigate two main research questions: (1) What are the differences in emotional and social loneliness levels between retirement migrants and older adults who reside in their country of origin (nonmigrants)? (2) What are the migration-related determinants of emotional and social loneliness?

The present study advances existing research in multiple ways. First, by employing a quantitative approach and collecting data from a representative sample of retirement migrants, our study offers a

comprehensive overview of loneliness within this group of older adults. Second, by focusing on retirement migrants, we obtain new theoretical insights into the interplay between aging and migration and how they relate to loneliness. Treating migration as a challenging life event, we theorize on several migration-related predictors of loneliness. Third, we expand upon literature on loneliness by investigating both emotional and social loneliness. This distinction is especially important to study for retirement migrants since, as will be elaborated upon below, migration at an older age may affect the conditions for the two dimensions of loneliness differently, with people being more at risk of experiencing social loneliness than emotional loneliness.

Framework and Hypotheses

Loneliness, albeit distressing, is a universal human experience. Although it has been conceptualized in slightly different ways throughout the years due to its multidimensional and subjective nature (Tzouvara et al., 2015), we draw upon the conceptualization that loneliness is an unpleasant feeling associated with either a lack of certain relationships or dissatisfaction with their quality (de Jong Gierveld, 1998; Perlman & Peplau, 1981). Unlike social isolation which reflects the objective number of social relations, loneliness reflects the subjective evaluation of social relations (Perlman & Peplau, 1981). Loneliness in older adults is affected by personal, social, and cultural resources and restrictions (Barjaková et al., 2023).

According to a systematic review of longitudinal risk factors of loneliness in older adults, general risk factors include but are not limited to not being married/partnered, a low level of social activity, and a limited social network (Dahlberg et al., 2022). Several personality traits have also been associated with higher levels of loneliness, such as introversion and neuroticism (Buecker et al., 2021). In addition to these general risk factors, older migrants are vulnerable to migration-related factors related to their transnational lifestyle and the feeling of belonging to the destination country (Fokkema, 2023; Pan et al., 2023). Expanding these theoretical insights, in the following section, we present hypotheses on (1) differences in loneliness between migrants and nonmigrants and (2) differences in loneliness levels among retirement migrants tied to migration-related factors.

Migrants Versus Nonmigrants

Most people wish to have at least one social contact to whom they can confide their personal worries and feelings (Weiss, 1973). If such a confidant is missing, the risk of emotional loneliness increases. When moving to a different country, individuals are removed from their social networks and the cultural environment they were socialized in. For some older adults, this change can severe their ties to familiar social networks that have supported them throughout their lives. Many retirement migrants move away from their families, therefore have less face-to-face contact with their adult children (Spaan, 2023). For older adults, frequent contact with family can help reduce feelings of loneliness as close relatives provide companionship in addition to daily support such as housework and transportation. For older migrants, the lack of frequent family contact, which might result in less support exchange, may lead to feelings of emotional loneliness. At the same time, retirement migration is often a step taken by a couple (Savaş et al., 2024). A romantic partner is often the most important intimate figure in one's life (Green, 2015), and research has shown that not having a romantic partner was strongly related to emotional loneliness. Although retirement migrants may be affected by the loss of support from their larger family, they often have their partner to continue the emotional support throughout their migration experience. Therefore, although there might be an association between retirement migration and emotional loneliness, this association may not be strong.

At older ages, people may experience changes in their social networks due to major life events, such as retirement. For some, relocation can be seen as an opportunity to reshape social network in old age by creating new social contacts (Gillespie & Fokkema, 2024). However, relocation can also be socially disruptive for older adults as it is a challenge to establish new ties due to the difficulties of learning a new language and adapting to new social norms in advanced age. Furthermore, newly created relationships might not be as fulfilling as previous relationships that have been fostered for decades in the country of origin. Interviews conducted with British retirement migrants in Spain have revealed that migrants regarded their new relationships in the destination as somewhat superficial and cursory (Banks, 2004; Huber & O'Reilly, 2004). This was seen in discussions of several British men regarding making friends in Spain "… one knows so little about people's pasts, that you never know whether they can be trusted, and that one never knows when someone is going to go back to Britain—or when you may lose a friend" (Huber & O'Reilly, 2004, p. 345). Considering the difficulty of making new friends in addition to the possible lack of depth in newly created relationships, migrants may feel socially lonelier than nonmigrants.

> *Hypothesis 1:* Retirement migrants are expected to be socially lonelier than older adults who have stayed in their country of origin. This association is expected to be less strong for emotional loneliness.

Differences Among Migrants

Retirement migrants are a heterogeneous group including individuals with different backgrounds and experiences. Among retirement migrants, the impact of migration on loneliness may vary due to how their social ties and their sense of belonging are affected after migration. Changes in migrants' social ties and sense of belonging may occur due to the difficulty of establishing new ties in the country of destination and the loss of social ties in the country of origin (Fokkema, 2023). Therefore, we argue that the differences in loneliness levels of retirement migrants can be explained by the differences in how well they are able to (a) maintain ties in the country of origin and (b) establish ties in the destination country.

Maintaining Ties in the Country of Origin. Most retirement migrants move away from their families, which may drastically change their relationship with their adult children. Research has shown that larger geographical distance between retirement migrants and their children is associated with less face-to-face contact (Spaan, 2023). Reduced face-to-face contact means less availability to provide support for older adults and their children (York Cornwell & Goldman, 2021). In older ages, individuals are more often in need of physical support in addition to emotional support, which is difficult to provide from a distance. The challenges in maintaining contact with adult children could result in feeling

emotionally lonely for retirement migrants, especially if they experience higher loss of contact.

People generally build close friendships during their youth and adulthood years, a period that retirement migrants spend in their country of origin. Especially for those socialized in individualistic societies, friendships are shown to be important for protecting one from feeling lonely (Lykes & Kemmelmeier, 2014). Close friendships in later life often include those who have known each other for decades, meaning they are a crucial support system in addition to or sometimes as a replacement to family. After migration, retirement migrants can sustain their close friendships through visits and communication via digital contact. However, some may lose this intimate tie because of restrictions relocation imposes on regular contact. Therefore, losing contact with close friends after migration may increase the risk of feelings of emotional loneliness.

Sense of belonging, which encompasses attachments to people, social groups, places, identities, and values (Yuval-Davis, 2006), is negatively associated with feelings of loneliness (Klok et al., 2017). When studying migrants, researchers often focus on migrants' multifaceted sense of belonging: to the origin country and to the destination country (Ruan & Cheung, 2024). Retirement migrants have been connected to their origin country for most of their lives; therefore, they might want to keep their own cultural identity after migration. Having a high sense of belonging to the origin could therefore be an important psychological resource to protect one from loneliness, especially during the migration process (Gustafson, 2001). Although a higher sense of belonging to the country of origin may also contribute to feelings of homesickness as migrants might yearn for their countries of birth (Baldassar, 2008), symbolic attachment and visits to the country of origin might alleviate these negative feelings. Therefore, a higher sense of belonging to the origin may be associated with lower levels of emotional loneliness.

> *Hypothesis 2:* Losing contact with children and friends in the country of origin and a lower sense of belonging to the origin country are associated with a higher risk of emotional loneliness. These associations are expected to be less strong for social loneliness.

Establishing Ties in the Destination Country. Establishing good friendships in the destination is crucial as long-distance relationships might not be able to fulfill the same needs as local relationships, particularly for everyday assistance and practical help (Nisic & Petermann, 2013). A failure to establish ties within the destination country can result in social isolation and feelings of loneliness (Hurtado-de-Mendoza et al., 2014). To create a supportive social network in the destination, friendships can be built with others. Having a good friend in the destination can alleviate one's social loneliness by providing emotional support in times of need and by involvement in community and cultural activities (Wessendorf & Phillimore, 2019). Therefore, having at least one good friend in the destination may be associated with lower levels of emotional and social loneliness for retirement migrants.

Especially in older ages, neighbors are an important source of instrumental support (ten Kate, 2023; Thomése et al., 2003). Compared to more intimate ties such as family and close friends, neighbors can provide help without causing any obligations to return the favor. Contact with neighbors can not only enhance social engagement but also provide individuals access to information and novel resources that are different from the ones they have access to through their intimate ties (Granovetter, 1973; Gray, 2009). Neighbors may play an important role in protecting retirement migrants from loneliness as they become a crucial part of their social support in the destination considering their lack of familial ties in proximity. Therefore, retirement migrants who have more frequent contact with their neighbors in the destination may show lower levels of emotional and social loneliness.

Retirement migrants are often challenged to integrate into the destination country due to linguistic and cultural differences (Gustafson & Laksfoss Cardozo, 2017; Iorio, 2020; King et al., 2019; Lardiés-Bosque et al., 2016). Learning the destination language is a crucial part of integration as it paves the way for socializing with the locals and learning more about the culture. Research has shown that being less proficient in the destination language is associated with higher levels of loneliness in migrants (Cela & Fokkema, 2017). However, retirement migrants face more difficulties to learn a new language because of their age (Savaş et al., 2023). Although difficult, being able to communicate in the destination language lowers the barrier between the locals and the retirement migrants for building relationships. Therefore, higher proficiency in the destination language may decrease the risk of social loneliness for retirement migrants.

Residing in a different country which has different traditions and norms risks the extent to which one feels a sense of belonging in the destination (Lee et al., 2010). Individual characteristics combined with the receptiveness of the destination society to migrants can influence the willingness to integrate and thus create a sense of belonging to the destination. Lack of a sense of belonging to the destination can result in loneliness and feeling like an outsider (Verkuyten, 2018). A higher sense of belonging to the host country is associated with lower levels of loneliness in migrants (de Jong Gierveld et al., 2015; Klok et al., 2017). Therefore, for retirement migrants, feeling a sense of belonging to the destination country may decrease the risk of social loneliness.

> *Hypothesis 3a:* Establishing more friendships and having more neighbor contact in the destination are expected to be associated with lower risk of social and emotional loneliness.
>
> *Hypothesis 3b:* Higher destination language proficiency and sense of belonging to the destination are expected to be associated with lower levels of social loneliness. These associations are expected to be less strong for emotional loneliness.

Method

Data and Study Sample

To examine our research questions, we collected data from Dutch retirees living abroad (retirement migrants) and Dutch retirees residing in the Netherlands (nonmigrants). It was estimated that only a small fraction of the population aged 65 and over in the Netherlands was an international retirement migrant in 2021. For this reason, a targeted sampling strategy was needed to obtain representative data. For the data collected from Dutch retirees living abroad, the sample was drawn by the Social Insurance Bank, which

executes the public pension system in the Netherlands. The migrant sample was defined as people who were born in the Netherlands and were between the ages of 66 and 90 in 2021, who accrued their Dutch basic state pension (Algemene Ouderdomswet) by living at least 35 years in the Netherlands after reaching age 15 and who were receiving their pension in a country outside of the Netherlands at the moment of data collection. We covered 98% of the population by limiting the study population to the 40 most common destination countries. People who lived in Belgium or Germany were excluded as individuals might be involved in border migration. Return migrants, people who had initially migrated to the Netherlands when they were younger due to reasons such as employment but later returned to their country of origin upon reaching retirement age, were excluded as this would require a separate conceptual and empirical treatment. The probability sample was contacted via Social Insurance Bank and our fieldwork agency for a web-based and/or paper-and-pencil questionnaire. The response rate was 45% resulting in an effective sample size of 6,110.

Before analyzing the data, we excluded people who migrated before age 50; who did not fit in the age range of 66–90; who indicated that they were not born in the Netherlands or were residing in the Netherlands, Belgium, or Germany at the time of data collection despite our sample frame; and who had missing items for the loneliness scale. This resulted in an effective analytical sample of 4,995 retirement migrants.

To make a comparison group of nonmigrants, we fielded our questionnaire in an adjusted form in the Longitudinal Internet studies for the Social Sciences panel. Longitudinal Internet studies for the Social Sciences is a representative survey of the Dutch population administered by CentERdata (Tilburg University, The Netherlands). The nonmigrant group included 1,364 individuals between the ages 66 and 90 in 2021 who were born and still living in the Netherlands. We excluded people who had missing items for the loneliness scale, resulting in an effective analytical sample of 1,338 nonmigrants.

Measures

The six-item de Jong Gierveld Loneliness Scale (de Jong Gierveld & van Tilburg, 2006) is used to measure loneliness as a unidimensional (overall loneliness) and bidimensional concept (emotional and social loneliness). In this article, we employ the bidimensional approach. Three emotional loneliness items are "I experience a general sense of emptiness," "I miss having people around me," and "I often feel rejected." Three social loneliness items are "There are plenty of people I can rely on when I have problems," "There are many people I can trust completely," and "There are enough people I feel close to." By following de Jong Gierveld and van Tilburg's (2010) steps, the answer categories *yes* and *more or less* were coded into 1 and the answer category *no* was coded into 0 on negatively formulated items, while the answer categories *no* and *more or less* were coded into 1 and the answer category *yes* was coded into 0 for the positively formulated items (de Jong Gierveld & van Tilburg, 2010). Emotional and social loneliness range from 0 to 3 with 3 being intensely emotionally or socially lonely (Cronbach's $\alpha = .69$ and .82, Kuder–Richardson Formula 20 = .67 and .78, respectively). Emotional and social loneliness were treated as continuous by following the steps of de Jong Gierveld and van Tilburg (2010; see Table A1 in the Appendix for when they are treated categorical).

General Risk Factors of Loneliness

To investigate whether being a migrant increases the risk of loneliness, we added a dummy for the migrant status (0 = *nonmigrant*, 1 = *migrant*).

We controlled for 10 general risk factors of loneliness. Age was measured as a continuous variable. Gender was measured as a dummy variable (0 = *men*, 1 = *women*). Current partnership status was measured as a categorical variable with four levels (1 = *partnered*, 2 = *divorced*, 3 = *widowed*, 4 = *single*). Having children was measured as a dummy variable (0 = *no children*, 1 = *have children*). Education was appropriated to the continuous International Standard Level of Education scale according to the last diploma individuals have received (Schröder & Ganzeboom, 2014). Perceived income adequacy was measured by the question "How well can you get by on your current income?" with five answer categories ranging from 1 (*very poorly*) to 5 (*very well*). Self-rated health was measured by the question "How is your health in general?" with five answer categories ranging from 1 (*very poor*) to 5 (*very good*).

Extraversion and emotional stability were measured by seven-item scales (Cronbach's $\alpha = .83$ and .86, respectively) from the International Personality Item Pool personality inventory (Goldberg et al., 2006). People were asked to describe themselves accurately with five answer categories ranging from 1 (*completely wrong*) to 5 (*absolutely correct*). The items for extraversion included "(a) don't talk much (b) feel good in the company of people (c) stay in the background (d) start conversations (e) have little to say (f) talk to many different people at parties (g) am quiet in the company of strangers." The items for emotional stability included "(a) get stressed easily. (b) I am relaxed most of the time (c) get alarmed easily (d) Get upset easily (e) my mood changes often (f) I have frequent mood swings (g) I often feel depressed." These two personality traits were selected as they were shown to be the most strongly associated with loneliness in a recent meta-analysis (Buecker et al., 2021).

Civic engagement was measured retrospectively for ages 50–65 to adjust for preexisting differences in social integration between migrants and nonmigrants. We used a five-item scale (Cronbach's $\alpha = .60$) with the questions "When you were still living in the Netherlands, between the ages of 50 and 65, did you do the following?" for migrants and "Between the ages of 50 and 65, did you do the following?" for nonmigrants. The answer categories were "(a) practicing a sport (b) participating in an association or club (c) being active for a volunteer organization (d) attending religious service (e) being active for the neighborhood" for both surveys. The answers which ranged from 0 (*did not*) to 3 (*often*) were summed up and coded 0 (*none for all items*) to 15 (*often for all items*).

Migration-Related Factors

To investigate the role of migration-related factors on loneliness, we added 11 variables corresponding to two groups of risk factors: maintaining ties to the origin and establishing ties in the destination country. Duration of stay and geographical distance were added as additional control variables. Duration of stay was coded as the

number of years retirement migrants spent in the destination country. Geographical distance was measured as the distance in kilometers from the destination to the Netherlands (centroid to centroid). Both variables were log-transformed.

Loss of contact with children was operationalized as a categorical variable (0 = *no children*, 1 = *low loss*, 2 = *medium loss*, 3 = *high loss*). A three-item scale with Cronbach's α of .71 was used to create categories *low loss* to *high loss*. This scale included the following question and items: "What is your opinion on the following statements? (a) I would like to see my child(ren) more often. (b) I miss my child(ren). (c) My child(ren) visit me less often than I expected when I emigrated" with five answer categories ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale was computed by averaging the scores across the items and was normally distributed. Those scoring less than 2 were classified as experiencing *no loss*, those scoring between 2 and 4 were categorized as experiencing *medium loss*, and those scoring above 4 were classified as experiencing *high loss*. These thresholds were determined relative to the distribution of scores, with the *medium loss* category spanning within 1 *SD* from the mean, *low loss* below 1 *SD*, and *high loss* above 1 *SD*. Respondents who reported having no children were categorized separately.

Loss of contact with good friends in the country of origin was measured as a dummy variable (0 = *no*, 1 = *yes*) when respondents answered the question "Are there any close friendships that have been lost since you emigrated?" Although the variable names are similar, the phrasing of questions regarding loss of contact with children and with friends differs due to the nature of these relationships.

Sense of belonging to the country of origin was measured with a three-item scale (Cronbach's α = .85) with five answer categories ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale included the following question and items: "What is your opinion about the Netherlands? (a) I feel at home in the Netherlands (b) I really feel connected to the Netherlands (c) The Netherlands is a part of my identity." The scale was computed by averaging the scores across the items.

Friendship in the destination was measured as a dummy variable (0 = *have no good friends*, 1 = *have at least one good friend*). The variable was constructed by combining the following question: "Do you have close friendships with (1) people from your country of residence? (2) migrants with a Dutch background? (3) other migrants?" If the respondent responded yes to any of these questions, they were coded into 1; if they responded no to all questions, they were coded into 0.

Two neighbor variables were added corresponding to contact with locals and migrants in the neighborhood. The question measuring these variables was "How often did you have contact (1) with people from the destination country in your neighborhood? (2) with other emigrants in your neighborhood?" Five answer categories were 1 (*none*), 2 (*less than once a month*), 3 (*once or more times a month*), 4 (*once or more times a week*), and 5 (*almost every day*). These two neighborhood contact measures were treated as separate variables.

Destination language proficiency was measured by respondents' answer to the question "How well can you communicate with the people in your country or region in their native language?" The five answer categories ranged from 1 (*not at all*) to 5 (*very good*).

Sense of belonging to the destination country was measured by a three-item scale with Cronbach's α of .85. The scale included the following question and items "What is your opinion about *the country where you now live*? (a) I feel at home in this country (b) I really feel connected to this country (c) This country is a part of my identity." Five answer categories ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale was computed by averaging the scores across the items.

Analytic Strategy

All analyses have been performed with two dependent variables: emotional loneliness and social loneliness. For the first research question regarding the difference between migrants and nonmigrants, we used two bivariate and two multivariate linear regression models to examine the effect of having a migrant status on emotional and social loneliness.

The bivariate models only included migrant status as the independent variable. In the multivariate models, we controlled for sociodemographic, psychological, and social risk factors of loneliness to see if the effect of migration status remained when general risk factors of loneliness were accounted for. Especially factors related to social abilities and needs such as extraversion, emotional stability, and civic engagement in the origin country were important to include to account for the selectivity of retirement migration in terms of loneliness.

For the second research question, we used two multivariate linear regression models to examine the effect of migration-related factors on emotional and social loneliness among retirement migrants. In addition to controlling for general risk factors of loneliness, we focused on migration-related risk factors. Several changes were made to the control variables. We removed the having children variable as we added a variable regarding relationship with children instead. We further added duration of stay in the destination country as an additional control variable to account for how time spent in the destination might relate to individuals' feelings of loneliness. We also added geographical distance between the origin and the destination as a control variable to account for the possible difficulties in keeping in contact with the country of origin. As presented in Table A2 in the Appendix, we took an additional stepwise approach and conducted regression analyses with and without control variables.

Analyses were performed using Stata 18. All continuous dependent and independent variables were standardized before they were added to the models. To test significant differences between effect sizes of emotional and social loneliness, we performed Zellner's seemingly unrelated regression analysis with the *sureg* command combined with the *test* command. This analysis mainly allowed us to (a) compare the effect sizes of migrant status on social and emotional loneliness and (b) compare the effect sizes of migration-related factors on social and emotional loneliness.

The variable which had the largest number of missing cases was civic engagement with 6% missing cases. All the remaining variables had less than 3% missing cases. Multiple imputation procedures using *mi impute* in Stata 18 were employed to deal with the missings in the independent variables corresponding to two research questions. We imputed the variables with missing values 20 times. Regression analyses were performed with the imputed data set. Multiple imputation models were estimated using *mi estimate: reg* in Stata 18.

Transparency and Openness

The present study was not preregistered. The data we have collected under the project title of "A Place to Grow Old? The Risks and Rewards of International Retirement Migration" have been approved by the research ethics committee of the Faculty of Spatial Sciences, University of Groningen in the Netherlands. Extensive information on the data set and the data collection process can be found in our online codebook (Henkens et al., 2022). To support transparency and openness, the relevant data can be obtained without cost by request via Royal Netherlands Academy of Arts and Sciences–Data Archiving and Networked Services (Kalmijn & Henkens, 2023). Our code is published online in APA's repository on the Open Science Framework at https://osf.io/u3skx/.

Results

Descriptives

Table 1 presents emotional and social loneliness items separately. The emotional loneliness items are negatively formulated whereas the social loneliness items are positively formulated. In general, respondents had low levels of emotional loneliness. A slightly larger percentage of nonmigrants reported to be more emotionally lonely compared to nonmigrants. Social loneliness levels were relatively higher for both migrants and nonmigrants. Retirement migrants more often reported to be socially lonely compared to nonmigrants.

Table 2 displays the means, standard deviations, and ranges of all dependent and independent variables including general and migration-related factors. As seen in Table 2, there were some differences between the composition of migrants and nonmigrants. A smaller portion of retirement migrants compared to nonmigrants were women (31% and 51%) and had children (75% and 84%). A larger portion of retirement migrants (77%) were partnered compared to nonmigrants (69%).

The correlation between emotional and social loneliness was low (.26). Correlations between independent variables were also relatively low. The highest correlations were between duration of stay and age (.39), emotional stability and health (.28), and sense of belonging to the origin and to the destination (−.28). The correlation matrix of all variables can be found in Table A3 in the Appendix.

Migrants Versus Stayers

Table 3 displays the results of the bivariate linear regression analyses of emotional and social loneliness including a dummy for migrant status and the results of the multivariate linear regression analyses also including the control variables. We hypothesized that retirement migrants would be socially lonelier than nonmigrants and that this association would be less strong for emotional loneliness (Hypothesis 1). In line with our hypothesis, retirement migrants reported higher levels of social loneliness compared to nonmigrants, but their levels of emotional loneliness were not higher. Comparison of effect sizes between models showed that the effect size of migration status in the social loneliness model was significantly larger than in the emotional loneliness model. These results support Hypothesis 1 on the stronger association of social loneliness and migration status.

As for the general risk factors, there were several common predictors of emotional and social loneliness: Being single or divorced compared to having a partner was associated with a higher risk, whereas having higher income, having better health, being more extraverted, and being emotionally stable were associated with a lower risk of emotional and social loneliness. There were also some differences in predictors of emotional and social loneliness. Being a woman and being involved in more activities in the origin country between the ages of 50 and 65 were associated with a higher risk of emotional loneliness. On the contrary, being a woman and being involved in more activities in the origin country between the ages of 50 and 65 were associated with a lower risk of social loneliness. Being widowed compared to being partnered was also associated with a lower risk of social loneliness while also being associated with higher risk of emotional loneliness. Furthermore, being highly educated was associated with a higher risk of social loneliness.

Differences Among Migrants

Table 4 displays the results of linear regression analyses of the migration-related risk factors of loneliness among retirement migrants. The first column shows the results for the emotional loneliness model, and the second column shows the results for the social loneliness model. Both models controlled for duration of stay in the destination country and geographical distance in addition to general risk factors of loneliness mentioned in the previous section.

Table 1
Responses to Emotional and Social Loneliness Items From the de Jong Gierveld Scale Divided by Migrant Status

Scale item	Migrant (%)	Nonmigrant (%)	Significance test
Emotional loneliness items			
I experience a general sense of emptiness	15	21	$\chi^2 = 23.09^{**}$
I miss having people around me	26	26	$\chi^2 = 0.40$
I often feel rejected	8	10	$\chi^2 = 2.66$
Social loneliness items			
There are plenty of people I can rely on when I have problems	65	71	$\chi^2 = 20.81^{**}$
There are many people I can trust completely	50	61	$\chi^2 = 44.70^{**}$
There are enough people I feel close to	56	68	$\chi^2 = 66.89^{**}$

Note. $N_{migrants} = 4{,}995$, $N_{nonmigrants} = 1{,}338$. The emotional loneliness items are negatively formulated, whereas the social loneliness items are positively formulated. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
$^{**}p < .01$.

Table 2
Means, Proportions, Standard Deviations, and Ranges of All Variables Divided by Migrant Status

Variable	Migrant *M*/% (*SD*)	Range	Nonmigrant *M*/% (*SD*)	Significance test
	General risk factors of loneliness			
Age	73.8 (5)	66–90	74 (5.5)	$F = 1.28$
Women	31%		51%	$\chi^2 = 180.16^{**}$
Partnership status				
Single	7%		13%	$\chi^2 = 45.66^{**}$
Partnered	77%		69%	$\chi^2 = 31.63^{**}$
Divorced	7%		4%	$\chi^2 = 18.97^{**}$
Widowed	9%		14%	$\chi^2 = 25.93^{**}$
Have children	75%		84%	$\chi^2 = 50.94^{**}$
Education (International Standard Level of Education)	61.4 (20.5)	23–87	56.3 (22.6)	$F = 59.77^{**}$
Perceived income adequacy	4.1 (0.8)	1–5	4.1 (0.7)	$F = .72$
Self-rated health	3.8 (0.8)	1–5	3.6 (0.7)	$F = 56.61^{**}$
Extraversion	3.4 (0.7)	1–5	3.3 (0.7)	$F = 10.82^{*}$
Emotional stability	3.9 (0.7)	1–5	3.9 (0.6)	$F = 9.71^{*}$
Civic engagement	3.6 (3.4)	0–15	4.9 (3.7)	$F = 133.62^{**}$
	Migration-related risk factors of loneliness			
Loss of contact with children				
No children	25%			
Low loss	5%			
Medium loss	55%			
High loss	15%			
Lost contact with a good friend since migration	52%			
Sense of belonging to the Netherlands	3.2 (0.9)	1–5		
Have at least one good friend in the destination	94%			
Neighborhood contact with locals	3.6 (1.1)	1–5		
Neighborhood contact with migrants	2.5 (1.3)	1–5		
Destination language proficiency	3.3 (1.2)	1–5		
Sense of belonging to the destination	3.6 (0.8)	1–5		
Duration of residence	11.5 (7.1)	0–39		
Geographical distance (in kilometers)	3474.1 (4054.1)	279.5–18293.9		

Note. $N_{migrants} = 4{,}995$, $N_{nonmigrants} = 1{,}338$. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
$^{*}p < .05$. $^{**}p < .01$.

Maintaining Ties in the Country of Origin

Our hypothesis regarding ties in the country of origin stated that keeping more ties in the country of origin is associated with a lower risk of emotional loneliness (Hypothesis 2). Several variables provided support for this hypothesis: Losing contact with children and losing contact with friends were associated with higher levels of emotional loneliness. We expected that the association between ties in the country of origin and loneliness would be less strong for social loneliness than for emotional loneliness. We found partial support for this argument: The effect of having lost contact with children was significantly larger for emotional loneliness than for social loneliness. However, contrary to our hypothesis, sense of belonging to the Netherlands was associated with higher levels of emotional loneliness and lower levels of social loneliness which could indicate a homesickness effect. The difference between the effect sizes of sense of belonging to the Netherlands in social and emotional loneliness models was significant.

Establishing Ties in the Destination Country

Our first hypothesis regarding ties in the destination country stated having a good friend in the destination and frequent neighbor contact are associated with a lower risk of social and emotional loneliness (Hypothesis 3a). Several factors provided support for this hypothesis: Neighborhood contact with locals and migrants was associated with lower levels of social and emotional loneliness. Interestingly, having at least one good friend in the destination was only associated with lower levels of social loneliness. However, as we expected, no significant differences in effect sizes were found between social and emotional loneliness in friendship and neighborhood contact with locals and migrants.

For destination language proficiency and sense of belonging to the destination, we hypothesized that the association would be stronger for social loneliness than for emotional loneliness (Hypothesis 3b). We found partial support for Hypothesis 3b: The effect of sense of belonging to the destination was significantly larger for social loneliness than for emotional loneliness. Although destination language proficiency was only significantly associated with social loneliness and not emotional loneliness, there was no difference in effect sizes between the two models.

We added duration of stay and geographical distance as additional control variables. Duration of stay was associated only with higher levels of social loneliness, whereas geographical distance was only associated with higher levels of emotional loneliness. The results for general risk factors of loneliness were similar to the results seen in Table 3, with two main differences. Among retirement migrants, being older was associated with lower levels of social loneliness. Unlike in Table 3, education had no significant association with any dimensions of loneliness.

Table 3
Linear Regression Coefficients of Emotional and Social Loneliness for Bivariate and Multivariate Models Including Migration Status

Variable	Emotional loneliness	Social loneliness
Bivariate analysis		
Migrants[a]	−.092** (.031)	.238** (.031)
Constant	.072** (.027)	−.187** (.027)
Adjusted R^2	.0012	.0093
Multivariate analysis		
Migrants[a]	.017 (.030)	.221** (.031)
Age	.018 (.012)	.001 (.013)
Women	.058* (.025)	−.061* (.026)
Partnership status (reference: Partnered)		
Single	.152** (.044)	.090* (.046)
Divorced	.329** (.047)	.136** (.048)
Widowed	.525** (.040)	−.114** (.041)
Have children	.054 (.028)	−.069* (.029)
Education (International Standard Level of Education)	−.006 (.012)	.025* (.013)
Perceived income adequacy	−.070** (.012)	−.091** (.013)
Self-rated health	−.114** (.012)	−.047** (.013)
Extraversion	−.029* (.012)	−.165** (.013)
Emotional stability	−.265** (.013)	−.129** (.013)
Civic engagement	.029* (.012)	−.084** (.013)
Constant	−.163** (.039)	−.105** (.040)
Adjusted R^2	.1591	.1090

Note. $N = 6{,}333$. Standard errors are in parentheses. Adjusted R^2–based on nonimputed models. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
[a] Effect sizes differ significantly between emotional and social loneliness models.
* $p < .05$. ** $p < .01$.

To understand the extent to which our grouping of migration-related risk factors (maintaining ties in the origin and establishing ties in the destination) explained variances for social and emotional loneliness, we examined model fit indices (adjusted R^2) based on nonimputed models. Table 5 displays the adjusted R^2 results for emotional and social loneliness models including (a) only ties in the origin variables, (b) only ties in the destination variables, (c) ties in the origin variables with control variables, and (d) ties in the destination variables with control variables. As seen in the first column, maintaining ties in the origin provided explained more variance for emotional loneliness than for social loneliness, although the difference was small. As seen in the second column, establishing ties in the destination explained more variance in social loneliness than in emotional loneliness. As seen in the third and fourth columns, once control variables were added, more variance in emotional loneliness was explained overall.

Discussion

Loneliness is associated with negative mental and physical health outcomes, especially in older ages. Relocation at an older age can pose unique challenges as it often involves leaving behind familiar surroundings, routines, and support networks, which can lead to feelings of loneliness. The changes in social networks due to relocation, despite potentially leading to feelings of loneliness, have received little attention in previous research. In this article, we focused on migration as a socially challenging event and investigated how the migration-related risk factors and aging develop together by studying a unique group of individuals who migrate at a later age. Although retirement migrants were identified to be in a higher socioeconomic status and healthier than nonmigrants (Savaş et al., 2024) which are often characterized as important protective factors of loneliness, our results showed that they were more vulnerable to social loneliness than nonmigrants, which is associated with the lack of a broader social network rather than intimate ties.

The notable contrast in social loneliness levels between migrants and nonmigrants suggests that the extensive social ties cultivated over a lifetime by retirement migrants are not effectively replicated in the destination country, possibly due to advancing age. Additionally, their newly formed friendships may fall short of meeting expectations for close companionship, particularly as familial support becomes less accessible due to distance. Despite experiencing greater social loneliness, retirement migrants do not differ significantly in emotional loneliness compared to nonmigrants. This finding, although intriguing, aligns with the understanding that retirement migration is often a partner project (Savaş et al., 2024) in which partners serve as a crucial support system throughout the migration process.

In this article, we theorized on migration-related risk factors of loneliness by categorizing two sets of predictors: maintaining ties in the origin country and establishing ties in the destination. Our results showed that both categories played a role in explaining loneliness levels of retirement migrants. Unlike previous research which put more emphasis on the ability to create ties in the destination (Fokkema & Ciobanu, 2021), we showed that not being able to maintain ties with family and friends in the country of origin also played an important role as a risk factor for loneliness, especially emotional loneliness. In addition to migration-related factors, we controlled for several general demographic risk factors of loneliness. Demographic variables such as partnership status explained more of the variance in emotional loneliness, which corroborates previous research on differences between these two dimensions of loneliness (Wolfers et al., 2022).

There were common correlates of social and emotional loneliness, such as neighborhood contact with locals and migrants. As family members and friends in the origin are geographically remote and more difficult to access, neighbors are crucial in coping with feelings of loneliness as well as in helping during emergencies (Pinquart & Sörensen, 2001). In older ages, neighbors and friends often overlap because physical proximity is important in determining friendship later in life (Pinquart & Sörensen, 2001). Expanding on the importance of neighbors in old age, we showed that having more frequent contact with neighbors was associated with lower levels of emotional and social loneliness. Therefore, neighborhood context provides opportunities to establish a new supportive social network in the destination for retirement migrants.

There were notable differences in several predictors of emotional and social loneliness. Sense of belonging to the destination was especially important in protecting one from feelings of social loneliness. This is in line with previous research emphasizing the importance of belonging to the destination country for older migrants (de Jong Gierveld et al., 2015), marking it as an important migration-related risk factor of loneliness. High loss of contact with adult children was only associated with higher emotional loneliness and not social loneliness. Having at least one good friend in the destination and destination language proficiency were

Table 4
Linear Regression Coefficients of Emotional and Social Loneliness for Retirement Migrants

Variable	Emotional loneliness	Social loneliness
Maintaining ties in the origin country		
Loss of contact with children (reference: No children)		
Low loss	−.157* (.062)	−.280** (.066)
Medium loss	−.009 (.030)	−.051 (.032)
High loss[a]	.306** (.040)	.049 (.043)
Lost contact with a good friend since migration	.130** (.025)	.196** (.027)
Sense of belonging to the Netherlands[a]	.060** (.014)	−.074** (.015)
Establishing ties in the destination country		
Have a good friend in the destination	−.026 (.053)	−.119* (.056)
Neighborhood contact with locals	−.058** (.013)	−.047** (.014)
Neighborhood contact with migrants	−.048** (.013)	−.052** (.014)
Destination language proficiency	−.014 (.014)	−.050** (.015)
Sense of belonging to the destination country[a]	−.161** (.014)	−.206** (.014)
Control variables		
Duration of residence (log)	.003 (.017)	.038* (.018)
Geographical distance (log)	.027* (.012)	.016 (.013)
Age	.012 (.015)	−.034* (.015)
Women	.094** (.028)	−.099** (.030)
Partnership status (reference: Partnered)		
Single	.110* (.051)	.151** (.054)
Divorced	.330** (.048)	.140** (.050)
Widowed	.510** (.044)	−.095* (.047)
Education (International Standard Level of Education)	−.010 (.013)	.014 (.014)
Perceived income adequacy	−.050** (.013)	−.062** (.014)
Self-rated health	−.093** (.013)	−.035* (.014)
Extraversion	.008 (.013)	−.115** (.014)
Emotional stability	−.214** (.014)	−.102** (.014)
Civic engagement	.031* (.013)	−.051** (.014)
Constant	−.390** (.114)	−.113 (.121)
Adjusted R^2	.2198	.1676

Note. N = 4,995. Standard errors are in parentheses. Adjusted R^2–based nonimputed models. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
[a] Effect sizes differ significantly between emotional and social loneliness models.
* $p < .05$. ** $p < .01$.

only associated with lower levels of social loneliness and not emotional loneliness. These results highlight the combined effect of aging and the migration-related risk factors, showing the negative impact that the loss of intimate attachment figures in later life has on emotional loneliness and emphasizing the importance of creating a supportive broader network in the destination to protect against social loneliness.

Our study incorporates several innovative elements. First, prior studies have predominantly focused on those who migrated in early adulthood as labor migrants and those who migrated later in life for family reunification (Fokkema, 2023). We widened the scope of research on loneliness among older migrants by focusing on retirees in search of a better way of life, namely, international retirement migrants. Second, by investigating emotional and social loneliness separately, we have come to a better understanding of loneliness in older adults who migrate at a later age. Third, by collecting data from a large representative sample of retirement migrants around the world, we have given a comprehensive understanding of loneliness among international retirement migrants.

This study has several limitations, the main limitation being its cross-sectional design. Without data on loneliness levels before migration, it is difficult to determine whether retirement migrants

Table 5
Adjusted R^2 of Different Emotional and Social Loneliness Models, With and Without Control Variables Added to the Models

	Without control variable		With control variable	
Loneliness dimension	Maintaining ties in the origin	Establishing ties in the destination	Maintaining ties in the origin	Establishing ties in the destination
Emotional loneliness	.0533	.0666	.1848	.1965
Social loneliness	.0255	.0919	.1150	.1497

Note. Adjusted R^2–based nonimputed models. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.

were already lonelier prior to their relocation, which may have potentially influenced their decision to migrate. However, we have taken selectivity into account by including several control variables such as extraversion and civic engagement between ages 50 and 65. Second, we have focused more on the quantity of relationships and less so on the quality of relationships. By adding the quality of relationships, future research can further our understanding of loneliness in older migrants. Third, Dutch retirement migrants are a selected group of migrants regarding their characteristics and cultural background, and the predictors of their loneliness may be different than other types of migrants with different characteristics and cultural backgrounds. Future research might investigate differences in migration-related factors between retirement migrants and other types of migrants such as labor migrants who migrated much earlier in the life course. At last, we do not have information on those who might have returned to their country of origin due to their high levels of loneliness, which might indicate that we might be underestimating retirement migrants' loneliness levels.

Older migrants face double jeopardy as they are vulnerable to both age-related and migration-related risk factors of loneliness. Despite being described as one of the "black spots in paradise", loneliness among individuals who move abroad around retirement age had not been studied quantitatively with a representative sample. Our study is the first to establish that retirement migrants experience higher levels of social loneliness than nonmigrants, though their emotional loneliness does not differ. Our results provide evidence for considerable heterogeneity within the retirement migrant population in their loneliness levels, depending on how they maintain their existing social ties in the origin country and how they establish new ties in the destination country.

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(*Appendix follows*)

Appendix

Supplementary Analyses

Table A1
Ordered Logistic Regression Coefficients of Loneliness for Retirement Migrants

Variable	Emotional loneliness	Social loneliness
Maintaining ties with the origin country		
Loss of contact with children (reference: No children)		
No loss	−.608** (.190)	−.592** (.138)
Medium loss	−.025 (.081)	−.087 (.066)
High loss	.674** (.099)	.105 (.088)
Lost contact with a good friend since migration	.344** (.066)	.402** (.055)
Sense of belonging to the Netherlands	.184** (.037)	−.158** (.030)
Establishing ties in the destination country		
Having a good friend in the destination	.024 (.133)	−.258* (.117)
Neighborhood contact with locals	−.139** (.034)	−.099** (.029)
Neighborhood contact with migrants	−.105** (.035)	−.104** (.028)
Communicating in the destination language	−.053 (.036)	−.105** (.030)
Sense of belonging to the destination country	−.405** (.036)	−.433** (.031)
Control variables		
Duration of residence (log)	.005 (.046)	.071 (.038)
Geographical distance (log)	.059 (.032)	.033 (.027)
Age	.031 (.038)	−.072* (.032)
Women	.287** (.072)	−.217** (.062)
Partnership status (reference: Partnered)		
Single	.191 (.136)	.284* (.110)
Divorced	.757** (.116)	.290** (.104)
Widowed	1.121** (.106)	−.206* (.099)
Education (International Standard Level of Education)	−.025 (.035)	.031 (.029)
Perceived income adequacy	−.128** (.033)	−.130** (.028)
Self-rated health	−.208** (.033)	−.069* (.029)
Extraversion	.012 (.036)	−.236** (.030)
Emotional stability	−.511** (.035)	−.218** (.030)
Civic engagement	.099** (.035)	−.104** (.029)
Cut1	1.844** (.296)	−.221 (.250)
Cut2	3.171** (.298)	.645** (.250)
Cut3	4.472** (.304)	1.527** (.251)
Pseudo R^2	.1234	.0714

Note. N = 4,995. Standard errors are in parentheses. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
* $p < .05$. ** $p < .01$.

(*Appendix continues*)

Table A2

Linear Regression Coefficients of Emotional and Social Loneliness for Retirement Migrants, With and Without Control Variables

Variable name	Emotional loneliness		Social loneliness	
	No control	With control	No control	With control
Maintaining ties in the origin country				
Loss of contact with children (reference: No children)				
No loss	−.182** (.066)	−.157* (.062)	−.319** (.067)	−.280** (.066)
Medium loss	−.047 (.031)	−.009 (.030)	−.096** (.032)	−.051 (.032)
High loss	.361** (.042)	.306** (.040)	.046 (.043)	.049 (.043)
Lost contact with a friend since migration	.199** (.026)	.130** (.025)	.226** (.027)	.196** (.027)
Sense of belonging to the Netherlands	.054** (.015)	.060** (.014)	−.099** (.015)	−.074** (.015)
Establishing ties in the destination country				
Have a good friend in the destination	−.094 (.056)	−.026 (.053)	−.216** (.057)	−.119* (.056)
Neighborhood contact with locals	−.074** (.014)	−.058** (.013)	−.063** (.014)	−.047** (.014)
Neighborhood contact with migrants	−.049** (.014)	−.048** (.013)	−.080** (.014)	−.052** (.014)
Communicating in the destination language	−.032* (.014)	−.014 (.014)	−.081** (.014)	−.050** (.015)
Sense of belonging to the destination country	−.182** (.014)	−.161** (.014)	−.241** (.014)	−.206** (.014)
Control variables				
Geographical distance (log)		.027* (.012)		.016 (.013)
Duration of residence (log)		.003 (.017)		.038* (.018)
Age		.012 (.015)		−.034* (.015)
Women		.094** (.028)		−.099** (.030)
Partnership status (reference: Partnered)				
Single		.110* (.051)		.151** (.054)
Divorced		.330** (.048)		.140** (.050)
Widowed		.510** (.044)		−.095* (.047)
Education (International Standard Level of Education)		−.010 (.013)		.014 (.014)
Perceived income adequacy		−.050** (.013)		−.062** (.014)
Self-rated health		−.093** (.013)		−.035* (.014)
Extraversion		.008 (.013)		−.115** (.014)
Emotional stability		−.214** (.014)		−.102** (.014)
Civic engagement		.031* (.013)		−.051** (.014)
Constant	−.045 (.060)	−.390** (.114)	.174** (.061)	−.113 (.121)
Adjusted R^2	.1047	.2198	.1195	.1676

Note. N = 4,995. Standard errors are in parentheses. Adjusted R^2–based nonimputed models. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.

* $p < .05$. ** $p < .01$.

(*Appendix continues*)

Table A3

Correlation Matrix of All Dependent and Independent Variables: Correlations Below the Diagonal Are for Migrants, Above the Diagonal Are for Nonmigrants

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Emotional loneliness	—	.28*	.08*	−.06*	.07*	−.22*	.06*	.20*	−.06*	−.17*	−.21*	−.15*	−.35*	−.03	.01
2. Social loneliness	.27*	—	.04	.09*	.07*	−.04	.01	−.02	−.01	−.16*	−.09*	−.26*	−.22*	−.20*	.12*
3. Age	.06*	−.01	—	.06*	−.04	−.14*	−.02	.23*	−.09*	−.02	−.06*	.01	−.05	.12*	−.10
4. Women	.09*	−.07*	−.04*	—	−.08*	.21*	−.02	−.19*	.20*	.03	.01	−.07*	.15*	−.02	−.01
5. Single	.00	.04*	.02	.09*	—	−.57*	−.08*	−.15*	.05	−.09*	−.09*	−.06*	.00	−.10*	.30*
6. Partnered	−.15*	−.02	−.12*	−.13*	−.48*	—	−.32*	−.61*	.01	.11*	.09*	−.01	.02	.06*	−.17
7. Divorced	.08*	.05*	.00	−.05*	−.08*	−.52*	—	−.09*	.07*	−.03	.00	.05	−.01	.00	−.01
8. Widowed	.15*	−.04*	.16*	.16*	−.08*	−.58*	−.09*	—	−.11*	−.04	−.03	.04	−.02	.02	−.05
9. Education (International Standard Level of Education)	−.07*	−.05*	−.01	−.07*	−.01	.04*	−.02	−.03*	—	.21*	.07*	.11*	.12*	.15*	.11*
10. Perceived income adequacy	−.14*	−.14*	.04*	.02	−.04*	.09*	−.11*	.01	.22*	—	.16*	.15*	.17*	.12*	.02
11. Self-rated health	−.21*	−.14*	−.08*	−.01	−.02	.04*	−.02	−.02	.10*	.22*	—	.18*	.23*	.09*	−.01
12. Extraversion	−.11*	−.23*	−.07*	.06*	−.02	.04*	.00	−.03*	.13*	.08*	.11*	—	.31*	.17*	−.06
13. Emotional stability	−.32*	−.20*	−.02	−.13*	.02	.00	.00	−.02	.11*	.15*	.28*	.26*	—	.08*	−.06
14. Civic engagement	.01	−.11*	.01	.05*	−.04*	.03	.00	.00	.11*	.05*	.06*	.14*	.06*	—	−.1
15. Have no children	−.02	.03*	−.15*	.04*	.12*	−.05*	−.05*	.03	.02	.03*	−.01	−.05*	−.03*	−.05*	—
16. No loss	−.05*	−.05*	.04*	.01	.02	−.03*	.03*	.00	−.02	.01	.03*	−.02	.02	−.01	−.13*
17. Medium loss	−.09*	−.05*	.09*	−.07*	−.09*	.05*	.02	−.01	.05*	.03*	.05*	.06*	.07*	.02	−.64*
18. High loss	.17*	.06*	.04*	.04*	−.03	.01	.02	−.01	−.07*	−.09*	−.08*	.00	−.07*	.03*	−.25*
19. Lost contact with a friend since migration	.12*	.13*	.00	−.03	−.01	−.04*	.03*	.04*	−.02	−.07*	−.07*	−.01	−.07*	.06*	.00
20. Sense of belonging to the Netherlands	.11*	−.03*	.02	.05*	−.07*	.07*	−.05*	−.01	.04*	.06*	.01	.04*	−.03	.09*	−.02
21. Have a good friend in the destination	−.07*	−.11*	−.05*	.06*	−.01	.01	−.01	.00	.09*	.06*	.08*	.15*	.08*	.09*	.01
22. Neighborhood contact with locals	−.13*	−.14*	−.07*	−.01	.00	−.01	.01	.01	.09*	.04*	.07*	.15*	.10*	.12*	.01
23. Neighborhood contact with migrants	−.07*	−.09*	−.06*	.07*	−.01	−.02	−.01	.04*	.02	.05*	.04*	.12*	.05*	.08*	.01
24. Communicating in the destination language	−.08*	−.15*	.04*	.12*	.00	.01	−.03*	.02	.19*	.08*	.11*	.17*	.08*	.08*	.00
25. Sense of belonging to the destination country	−.24*	−.26*	−.01	.03*	.03*	−.05*	.01	.04*	−.04*	.06*	.09*	.15*	.14*	.04*	.02
26. Geographical distance (log)	.06*	.06*	.03*	−.11*	.04*	−.06*	.06*	.00	−.09*	−.03*	−.02	−.09*	−.01	−.01	.04*
27. Duration of residence (log)	.04*	.01	.39*	.05*	−.03*	−.04*	−.03*	.11*	.03*	.04*	−.04*	−.03	−.01	−.01	−.01

Variable	16	17	18	19	20	21	22	23	24	25	26	27
16. No loss	—											
17. Medium loss	−.24*	—										
18. High loss	−.10*	−.47*	—									
19. Lost contact with a friend since migration	−.01	−.04*	.06*	—								
20. Sense of belonging to the Netherlands	−.07*	.00	.07*	−.04*	—							
21. Have a good friend in the destination	−.03*	.02	−.03*	.03*	.00	—						
22. Neighborhood contact with locals	−.02	.01	−.02	.02	−.03	.19*	—					
23. Neighborhood contact with migrants	−.01	.02	−.03*	.01	.01	.20*	.15*	—				
24. Communicating in the destination language	.00	−.01	.01	.00	.05*	.09*	.21*	−.13*	—			
25. Sense of belonging to the destination country	.01	.01	−.05*	−.05*	−.27*	.10*	.17*	.01	.22*	—		
26. Geographical distance (log)	.04*	−.09*	.05*	.10*	.03*	−.03*	−.05*	.02	−.12*	−.04*	—	
27. Duration of residence (log)	−.01	.00	.02	.12*	.05*	.02	−.02	−.05*	.22*	.02	.04*	—

Note. DRM 2021 v1.3. DRM = Dutch Retirement Migrants abroad.
* $p < .05$.

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