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Adult Child Migration and Elderly Multidimensional Well-Being: Comparative Analysis Between Moldova and Georgia

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Abstract
Despite growing concern over the potential consequences of migration for the "left behind," few systematic attempts have been made to document the relationship between the migration of an adult child and the well-being of his or her elderly parent(s) remaining in the country of origin. This article proposes a multidimensional elderly well-being index that enables the identification and comparison of outcomes between elderly individuals with and without adult migrant children in Moldova and Georgia, two former Soviet states that are both experiencing demographic and mobility transitions. The outcomes of elderly individuals with and without children living abroad are compared to illustrate in what domains child absence through migration corresponds to differing well-being outcomes. The findings suggest that the migration of an adult child is not as significant a factor in shaping

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well-being outcomes as would be expected based on past literature; other factors may play much stronger roles in shaping of well-being.

Keywords

migration, elderly, multidimensional poverty, Moldova, Georgia

Moldova and Georgia are two former Soviet states that have inherited complex political, social, and economic systems, which even so many years after the dissolution of the Soviet Union can be considered in transition. Despite the prioritization of social protection reforms in both countries, high rates of poverty persist in both, particularly among the elderly population receiving low public pensions (Sidorenko & Zaidi, 2013). In addition to the erosion of state support for the aging population, many older persons have experienced changes in their informal support networks through the (international) migration of kin. As the populations of both Moldova and Georgia age, the challenge also grows of meeting the needs of a growing elderly population amid changes in both formal and informal social support systems. This challenge requires a greater understanding of how elderly individuals with migrant family members fare, particularly when those migrants are potential pillars of support who can help an individual navigate the aging process.

Moldova and Georgia provide excellent case studies through which the well-being of elderly persons with migrant children can be explored. Both countries have significant shares of the population over the age of 65, and by 2025, over 15% of the population of both countries are expected to be in the 65+ age cohort (Chawla, Betcherman, & Banerji, 2007). In addition to the growing share of elderly individuals among their populations, both countries have experienced rapid emigration movements since the 1990s, with potentially important implications for how the elderly population navigates the transition to older age. Large-scale emigration from Moldova began at the end of the 1990s, when the Russian economic crisis peaked and over 70% of the population lived below the poverty line (International Monetary Fund [IMF], 2006). Continued economic vulnerability has promoted large-scale emigration since, with over 21.5% of the total population thought to be residing abroad in 2010, primarily in countries such as the Russian Federation, Ukraine, and Italy (Ratha, Mohapatra, & Silwal, 2010). In Georgia, periodic civil conflict, political instability, and continuing economic uncertainty contributed to consistently high emigration flows since 1991. Georgia experienced sharp and protracted economic decline during the transition to

independence, and by 1999, 60% of the population lived below the poverty line (IMF, 2003). Just as in Moldova, emigration from Georgia reflected these economic concerns, with emigration sharply increasing at the end of the 1990s. Continuing economic insecurity has inspired high continuous flows of emigration: By 2010, 25.1% of the total population was thought to live abroad, the majority of whom were dispersed throughout the Russian Federation, Armenia, Ukraine, Greece, and Israel (Ratha *et al.*, 2010).

The large scale of migration has inspired discussion on the consequences of migration for the elderly "left behind," many of whom have not only experienced the absence of an adult child but also the simultaneous responsibility of caring for grandchildren left in their care. Despite an active public discourse on the topic—particularly in Moldova—there are no systematic assessments of the potential consequences of migration for the elderly remaining in the country of origin. This article provides a first attempt to do so by elaborating a multidimensional well-being index that enables the comparison of well-being outcomes between elderly individuals with and without adult children living abroad. The multidimensional index provides a holistic and concrete measurement method of elderly specific well-being across the dimensions of physical health and independence, housing well-being, social well-being, and emotional well-being. Well-being on both the total index and the individual domain level provide a sense of how "well" an elderly individual is; when elderly well-being is compared by child migration status, this article details how a child's migration status appears to lead to ambiguous outcomes (insignificant results) in terms of social, emotional, and housing well-being in both Georgia and Moldova.

The first section of this article assesses the potential linkages between migration and elderly well-being with a brief survey of existing studies on the impacts of migration on the well-being of elderly kin. The following section explores the concept of well-being and how it can be tailored to the unique vulnerabilities of the aging population. Description of the data and methodology follows before the results of the elderly well-being index are explored. The article then concludes with a discussion of the results of both bivariate and multivariate models.

Migration and Well-Being

Given the role of the family in supporting elderly individuals as they age, the migration of an adult child may be expected to affect the overall well-being of an elderly individual. Older individuals must often rely on external resources to achieve minimum acceptable standards of well-being. The most

obvious sources of such aid and support are members of the immediate and extended family, on whom the lion's share of the elder care burden falls in societies lacking adequate (public) care and support structures for the aging.

Moldova and Georgia are two such countries with limited state support for elderly care. Since the end of the Soviet period, elder care has largely fallen on individuals: Social services and public goods such as meals and health services that were entirely state subsidized are now financed almost exclusively by household budgets (Bezemer, 2006). Public expenditure on health care in particular has rapidly deteriorated in both Moldova and Georgia, and given increasing health-care needs with older age, the financial burden levied on the elderly is considerable. Universal entitlements, low pension ages, high numbers of aging individuals, and low rates of labor-market entry have threatened the sustainability of pension systems in both Moldova and Georgia, inspiring ongoing parametric reform. In the early 2000s, the reforms resulted in old-age benefits that did not meet subsistence levels and were often delivered months late. In Moldova, over 29% of pensioners who live alone fall under the poverty line, which is higher than the national average (IMF, 2011).

Individuals aged 65 and older were also recently assessed as being the most socially excluded in terms of economic standards, social services, and participation in social networks and political platforms. Compared to over 30% of the total population, over 45% of all elderly persons in Moldova were considered excluded (United Nations Population Fund and HelpAge International, 2012), highlighting the substantial risks the elderly face.

Limited public services provisions, insufficient pensions, and general economic insecurity make elderly individuals more reliant on members of their personal networks to achieve an acceptable standard of living. The transition from planned to market economy, however, has inherently changed the structure of the labor market, with more working-age individuals emigrating to urban areas for work. This in turn has changed family residency arrangements and care practices (King & Vullnetari, 2006), leading to fewer (young) family members available to aid elderly kin. International migration in particular can weaken (kin-based) informal social care structures that cannot be supplemented by formal support systems (Grant, Falkingham, & Evandrou, 2009).

While migration can heighten an already existing elder care "crisis," it can also support household expenditures and buoy incomes in the face of insufficient state provisions. The new economics of (labor) migration (NELM) theory makes this link especially clear. The NELM theory sees migration as a household-level decision made in response to economic constraints in the

native labor market. Migration is seen as a means of overcoming market failures by sending an individual abroad to work, thus diversifying sources of income and protecting the household against economic shocks in the home country (Massey et al., 1993; Stark & Bloom, 1985; Taylor, 1999). The failure of the state to ensure adequate pension provisions and to provide social services needed by the elderly population is symptomatic of larger market inadequacies that could incentivize migration. While the physical absence of a household member may decrease the support an elderly individual receives, resources generated by the migration process—such as remittances—may supplement this loss.

The clear links among the demographic transition, public finance reforms, and migration of the "middle generation" of working-age adults have not been explored in great depth. Prior research that has explored the potential implications for migration on elderly individuals has predominantly focused on particular aspects of elderly well-being such as physical health or time allocation, which makes it difficult to determine the "net effect" of migration and the elderly left behind.

In terms of physical health, several studies on the elderly parents of migrants in Mexico have found consistently negative correlations between migration and health outcomes. A study by Kanaiaupuni (2000) found that many elderly individuals who had to live independently following the migration of a child lacked physical support for routine daily activities, which contributed to declining physical and emotional health. Antman (2010) found that the elderly parents of migrants reported higher levels of health deterioration than their cohorts without children in migration, and they were also more likely to experience stroke or heart attack. In both studies, declining physical health was seen as a contributing factor to declining emotional health, illustrating the mutually reinforcing nature of different aspects of well-being as well as the importance of viewing these aspects together.

The rapid structural and socioeconomic changes that have swept the former Soviet states and inspired large-scale migration have been linked to declining emotional well-being among elderly individuals with children abroad. Grant, Falkingham, and Evandrou (2009) found in Moldova that elderly individuals with children living abroad expressed feelings of loss and abandonment while simultaneously accepting the migration situation as a necessary sacrifice. Similar sentiments were expressed in Albania (King & Vullnetari, 2006). Another study conducted by Abas and colleagues (2009) in Thailand found contrary results: Reported levels of depression were lower among elderly individuals with children in migration than those without, which could suggest that migration does correspond to positive

outcomes—either because of benefits directly generated by migration (remittances) or because children with emotionally unwell parents are less likely to enter migration in the first place.

Changes to both physical and emotional well-being may also be related to changes in daily activities of elderly individuals. Adding to the finding of Kanaiaupuni (2000)—that changes in family coresidence may correspond to declining physical health—several other studies have suggested that the shift in daily tasks and responsibilities may challenge the well-being of elderly individuals affected by migration. Chang, Dong, and MacPhail (2011) found in China that elderly individuals in migrant households spent more time on farm work, off-farm work, and domestic tasks than individuals without a household member in migration. In Moldova, the change in domestic tasks may be especially challenging when they include the assumption of childcare duties. Several studies, such as that of Salah (2008) and Prohnitchi (2005), found that when adult children migrate without taking their children with them, elderly grandparents may take on the primary responsibility for childcare, despite not having the financial resources or mental capabilities for it. Pensioners who rely exclusively on small public pensions and who lack access to state childcare benefits are especially vulnerable to poverty following the assumption of care duties (HelpAge International, 2008).

What many past studies have highlighted is the complexity of postmigration changes to the household. As migration in both Moldova and Georgia has occurred within a context of wide-reaching social, political, and economic uncertainty and disruption, it is difficult to disentangle the unique influence of migration on elderly well-being. An essential part of this process is defining elderly well-being and translating it into measurable outcomes.

Defining Well-Being

To be measured and compared, well-being must first be defined and, importantly, adapted for the given population. The elderly are unlike other population groups in their needs and constraints, and it is thus important to determine the unique components of elderly well-being. A starting point in this process is in understanding well-being as a concept that can be further specified into a functional measurement instrument.

Different disciplines have tackled the concept of well-being in different ways, both from theoretical and from practical perspectives. The World Health Organization's proposed quality-of-life (QOL) measurement instrument formulated in 1995 provides a good starting point to defining well-being. The instrument was designed to function independent of culture and

generation and was based on the idea that quality of life is "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (World Health Organization quality of life [WHOQOL], 1995, p. 1405). This definition explicitly identifies subjective QOL—an individual's own perception—as key to determining wellness. The QOL measurement tool designed by WHO was designed to yield a multidimensional QOL profile with scores clustered around 6 domains comprised of 24 subdomains. The domains chosen were physical health, psychological health, level of independence, social relationships, environment, and personal beliefs (WHOQOL, 1995).

The WHO instrument was explicitly designed for adaptation to specific populations, and while it provides an essential basis for construction of an elderly specific well-being instrument, additional insight can be gained from other, elderly specific sources. Working from the understanding that elderly well-being is the result of successful adaptation and aging (Brandtstädter & Greve, 1994), practitioners from fields such as gerontology, psychology, and health have proposed that successful aging is navigated through different domains of QOL. Farquhar (1995), for instance, has suggested that health and mobility, family relationships, social contacts, activities, emotional well-being, and material circumstances are all essential components of elderly well-being. Cummins (2003) proposed a similar list, adding life philosophy and meaningful future outlooks as components. In 2011, the Stanford Centre on Longevity Index was tested by Kaneda, Lee, and Pollard using four basic domains that encompass elements of the previous instruments: emotional well-being, social well-being, material well-being, and physical well-being (including mobility and nutrition). This last index—much like the WHO QOL instrument—broadly represents key domains of well-being within which more specific indicators can be elaborated.

Within the context of elderly well-being, it is especially important to consider the close relationship between and among different components of wellness. While it is true of any age-group that health or wellness in one domain can affect the attainment of well-being in another, domains of wellness become more mutually reinforcing later in life, with changes in one domain bearing more consequences for attainment in another. Several authors have pointed out, as one example, the role that basic mobility plays in the maintenance of social relationships: As mobility deteriorates, so too does an individual's ability to maintain personal relationships, which may in turn damage an individual's emotional health (Fillenbaum, 1984; Ward, Barnes, & Gahagan, 2012). Single deprivations thus easily become multiple

deprivations, compounding both the incidence and the intensity of deprivation (Ward et al., 2012). Given this high level of overlap, any definition of well-being should explicitly recognize the importance of assessing different component of QOL or well-being side by side as complementary aspects of a whole.

Based on the surveyed definitions, the observed dimensional overlaps, and particular characteristics of elderly well-being as opposed to other population groups, the following definition of elderly well-being is proposed and operationalized:

> Well-being is a multidimensional state of personal being comprised of both self-assessed (subjective) and externally-assessed (objective) positive outcomes across four realms of opportunity: physical health or well-being, emotional health, housing living standards, and social interaction.

Understanding how migration can affect well-being—and through what channels—not only helps frame expectations but also helps highlight the unique vulnerabilities the process of migration introduces to the lives of those affected.

Based on previous studies and on the situation of the elderly in Moldova and Georgia, the migration of an adult child is anticipated to correspond to some differences in well-being outcomes. In the analysis that follows, several hypotheses are tested: (1) the physical well-being of elderly individuals with adult children living abroad will be worse than that of their contemporaries without children in migration; (2) the emotional well-being of elderly individuals may not differ based on adult child migration, as migrant self-selection would lead adult children with emotionally unwell elderly parents to delay migration; (3) the housing living standards of elderly individuals with a child in migration are expected to be better than those of individuals without migrant children given the receipt of remittances; and (4) the social well-being of elderly individuals with and without children living abroad are not expected to differ, as elderly individuals with similar levels of mobility are expected to maintain social contacts regardless of child location.

Data and Methodology

Within the project "the Effects of Migration on Children and the Elderly Left Behind in Moldova and Georgia," nationally representative household data were collected between September 2011 and March 2012 in Moldova and March and December 2012 in Georgia. In Moldova, 3,571 households were

Table 1. Characteristics of Household Containing One or More Elderly Persons Aged 60 and Older.

	Moldova	Georgia
No. of elderly individuals in the total sample	2,278	3,407
Adult child residency		
Proportion of elderly with children***	91.3	80.5
Proportion of elderly with a child abroad***	30.7	17.7
Proportion of elderly with a child in the household***	29.9	45.2
Proportion of elderly with a child in the same country**	74.7	71.1
Proportion of elderly with a child abroad receiving remittances**	13.0	17.0
Household composition		
Living alone***	23.4	14.8
Living with a partner***	26.2	15.0
Living with other adults***	29.6	38.6
Living in HH with children below 18 years old***	20.9	31.7

Note. HH = household. Authors' calculation based on migration survey. Sample weights have been applied to make the data representative for the whole population.
***$p < .01$. **$p < .05$. *$p < .1$. Significance levels based on χ^2 test of independence.

surveyed and 4,010 households were surveyed in Georgia. As the project focused specifically on children and the elderly, a high number of households in both countries contained these population groups: In Moldova, 1,743 households contained one or more elderly person aged 60 or older, while in Georgia, the sample of households with an elderly individual included 2,204 households. In both countries, all regions were sampled, excepting the breakaway territory of Transnistria in Moldova and the de facto independent regions of Abkhazia and South Ossetia in Georgia.

Information on the demographic features of household members, household living conditions, members' migration histories, and characteristics and conditions of the elderly was collected in the survey. Individual elderly characteristics, such as work history, physical health and nutrition, mental health, mobility, and relationships with household and nonhousehold members, were collected directly from individuals over the age 60. Household-level features such as housing characteristics and assets were collected from the primary respondent in each household and assumed to apply to all household members equally.

Table 1 provides descriptive information on elderly individuals in Georgia and Moldova. Some differences between the countries are worth noting: While in Moldova a higher proportion of elderly people had children and a

child abroad, more elderly individuals in Georgia lived with their children in the same household. The proportion of elderly persons with a child who lived in the same country was slightly higher in Moldova than in Georgia. The proportion of the elderly with children living abroad who received remittances was below 20% in both countries, with a slightly higher proportion in Georgia than in Moldova. Household composition among the elderly also significantly differed between countries. In Moldova, the proportion of individuals living alone or with a partner was much higher than in Georgia, where almost 40% lived in households with other adults and 31% lived in multigenerational households or households with children (when compared to almost 30% and 21% in Moldova, respectively).

The selectivity of migrants also differed between the two countries: In Moldova, almost 60% of migrants were male, while in Georgia, a larger proportion of migrants were female (54%). Georgian migrants also tended to be slightly older than migrants in Moldova (41 years old on average when compared to 35 years old) and to have a slightly higher level of education. While the average migrant in Moldova had attained lower secondary education, Georgian migrants achieved, on average, a secondary degree and had incomplete tertiary education.

These initial descriptive differences may suggest that the experiences of elderly persons "left behind" differ between the two countries. The different migration selectivity and patterns of child coresidency are just a few of the factors that would likely influence how elderly individuals in postmigration households are affected by the migration experience.

Indicators

For the purpose of this multidimensional well-being analysis, an elderly specific well-being index was designed, which was comprised of indicators allocated to one of several domains of well-being. An index was chosen for its multidimensional structure, inherently comparative nature, and replicability. As the same survey tool was implemented in both Moldova and Georgia, the same set of indicators was elaborated for both populations. The resulting elderly well-being index contains four dimensions: physical well-being, social interaction, emotional well-being, and housing living standards. Most indicators are on individual level and retain the elderly individual as the unit of analysis. While some household-level indicators such as income, assets, and living conditions are included, many of the indicators chosen reflect the unique situation and opinion of the elderly person. The dimensions and indicators of the elderly well-being index are presented in Table 2.

Table 2. Elderly Well-Being Indicators per Dimension.

Dimension	Indicator	Threshold	Weights in MWI
Physical well-being	Individual has retained basic mobility functions	Mobility index ≥ 0	1/8
	Individual has no difficulty self-administering medication		1/8
Housing well-being	Individual is living in house with appropriate flooring, electricity and access to safe water		1/4
Social well-being	Individual has regular contact with family or friends	At least once a week	1/4
Emotional well-being	Individual is not depressed	Depression index >12 (scale 4–23)	1/8
	Individual is satisfied with current life	Life satisfaction >6 (scale 1–10)	1/8
Total IWB			1

Note. IWB = indicator well-being; MWI = multidimensional well-being.

Physical well-being is comprised of a composite indicator measuring the elderly individual's basic mobility functions as well as an indicator assessing the ability to take medication without help, which is used as a proxy to measure functional independence. The mobility indicator was created through factor analysis based on dummy variables that measure the elderly individual's ability to perform essential daily functions (such as, bathing, dressing, walking, and going to the bathroom without assistance), all of which are correlated with each other.

The housing dimension is measured through an indicator that captures whether the elderly individual lives in a house with proper flooring quality, access to safe drinking water, and electricity.

Extensive literature supports the idea that a good relationship with family and people in the community helps improve overall elderly well-being (Fillenbaum, 1984; Kaneda, Lee, & Pollard, 2011; Ward et al., 2012). Therefore, the dimension of social inclusion encompasses relationships with family and community members, as both types of social ties are important in shaping well-being outcomes. Elderly individuals who had social interaction with family or friends at least once a week were considered well-off.

Finally, the indicators chosen to measure emotional well-being were self-reported depression and self-reported current life satisfaction. These two

indicators indicate level of self-perceived wellness. Depression and life satisfaction were measured using a set of questions designed for the Mental Health Inventory (MHI-38).[1] The choice to measure depression using self-reported questions reflects the view that self-reported measures are usually better than clinical diagnostic tools, as they measure causes of late-life depression, such as coping with chronic illnesses, disability, feeling of loneliness, and so on. (Kaneda et al., 2011). The indicator of life satisfaction was measured using a 10-point Likert-type scale in which respondents rated satisfaction with their current life. Based on the Cantril Self-Anchoring Striving Scale,[2] a score of 7 or higher indicates that an individual is "thriving" or satisfied with his or her own life.

Method

Well-being with respect to each of the indicators noted above was analyzed separately. An elderly individual was considered not deprived if she or he met the well-being threshold for a given indicator. Indicator well-being (IWB) rates were then calculated by counting the number of elderly persons who met the requirement, expressed as a share of all elderly persons (Roelen et al., 2011; Roelen & Gassmann, 2012):

$$\text{IWB}_x = \frac{1}{n} \sum_{i=1}^{n} I_{ix},$$

where n is the number of elderly for which the indicator is observable and I_{ix} is a binary variable taking the value 1 if the elderly person i has reached the threshold and 0 if the elderly person has not with respect to indicator x. Indicators observed at household level, such as for housing well-being, were translated to all elderly persons living in the respective household, assuming equal access and intrahousehold distribution.

A second step involved building a multidimensional well-being index inspired by the methodology developed by Alkire and Foster (2011) for the measurement of multidimensional poverty. An elderly person was considered multidimensionally well if the weighted combination of indicators was 70% or more of the total. Each domain was assigned equal weight, and each indicator within a domain was also equally weighted. This facilitates the interpretation of results (Atkinson, 2003) but also asserts that each dimension is considered of equal importance. Weights can be determined in various ways, such as through participatory processes, based on expert opinion or derived from survey data. The decision to set the cutoff at 70% of the aggregated indicators follows the cutoff used for prior multidimensional

child well-being indices (Roelen & Gassmann, 2012). The incidence (or headcount rate) of multidimensional well-being is the percentage of elderly individuals considered well as a proportion of all elderly individuals.

In order to compare well-being rates between elderly individuals with and without a child abroad, bivariate analysis was conducted to determine whether the percentage of elderly individuals meeting the well-being threshold in a specific indicator was significantly different between the cohorts of the elderly and between countries. Multivariate analysis was subsequently applied to control and identify other correlates that determine elderly well-being, such as personal characteristics of the elderly individual as well as regional or household characteristics. Separate binary outcome models were estimated for selected indicators using standard probit models:

$$\Pr(y_i = 1 | x_i) = \Phi(x_i \beta), \text{with } i = 1, \ldots, N$$

where y_i is the binary outcome variable, Φ is the standard normal distribution function, x_i is a vector of explanatory variables, and β is a vector of coefficients to be estimated. The dependent variable is the probability that an individual is vulnerable with respect to a specific indicator. The models were estimated with robust standard errors, and results are presented as average marginal effects.

Due to several reasons, we could not use a proper identification strategy to correct for the problem of selectivity and reverse causality, such as propensity score matching (PSM) or instrumental variable estimation. First, the lack of premigration data and retrospective questions would make it difficult to implement a PSM technique. Second, many of the variables that would be used in absence of premigration data to predict child migration, such as housing conditions, are included in the dependent variable (the multidimensional index). This would violate the conditional independence assumption, which needs to be satisfied in propensity score analysis. Finally, it was not possible to find appropriate instruments that behaved similarly in both countries, among other reasons due to the fact that we are not analyzing household-level migration but migration of an adult child that can belong to any household.

Results

Table 3 provides an overview of well-being rates attained by the elderly in each country for each indicator as well as for the total multidimensional index. Well-being rates are split by child migration status (after removing from the sample elderly individuals without children), and differences in

Table 3. Domain and Multidimensional Well-Being Rates.

	Housing (%)	Mobility (%)	Medication (%)	Contact (%)	Depression (%)	Life Satisfaction (%)	MWI (%)
Moldova							
No. of obs:	1,543						
Child abroad	78.7	60.1	72.9	66.8	70.5	38.6	49.6 (67.0)[a]
No child abroad	80.2	55.2	69.9	66.7	71.2	40.3	51.3 (64.8)
Total	79.6	56.9	70.9	66.7	71.0	39.7	50.7 (65.6)
Significance levels		*					
Georgia							
No. of obs	2,204						
Child abroad	78.0	64.4	79.3	67.9	61.4	25.0	50.8 (69.3)
No child abroad	73.9	58.3	72.9	61.2	58.4	22.5	42.6 (61.4)
Total	74.8	59.6	74.3	62.6	59.1	23.0	44.4 (64.4)
Significance levels	*	*	***	**	***	***	***
Significant differences between countries	***		***	**	***	***	***

Note. MWI = multidimensional well-being. Authors' calculations. †p < .1. *p < .05. **p < .01.
aMean scores of the multidimensional index are shown in parentheses.

outcomes between Moldova and Georgia are indicated at the bottom. Well-being rates differ considerably across dimensions. While life satisfaction is achieved by only 23% of elderly persons in Georgia and nearly 40% in Moldova, housing well-being is attained by almost 80% percent of the elderly in Moldova and nearly 75% in Georgia. Emotional well-being rates and self-independence (proxy by the ability of the elderly to self-administer medication) are higher in Moldova, while elderly in Georgia are more likely to be mobile. On the total index level, approximately 51% of elderly individuals can be considered well-off in Moldova, while in Georgia, only 44.4% of the elderly attain multidimensional well-being rates.

Comparing well-being rates by child migration status, significant differences appear in both countries. In Moldova, differences in well-being rates occur between the two elderly cohorts in the domains of mobility; in Georgia, significant differences are observed in the dimensions of physical and social well-being and in the overall multidimensional index. In both countries, elderly individuals with a child abroad have higher levels of physical well-being. In Georgia, elderly individuals with a child abroad also attain higher rates of social well-being and multidimensional well-being.

Based on this bivariate analysis, migration appears to be an important factor that explains some differences in elderly well-being rates in both countries, albeit to a greater extent in Georgia than in Moldova. The relationship between migration and well-being is likely influenced by other factors or features of an individual's life, for which a multivariate approach is needed. Probit analysis was applied in which other explanatory variables beyond the migration status of a child were included. Covariates included household characteristics (such as rural/urban locale, household composition, and highest level of education attained in the household) as well as personal characteristics of the elderly person (such as age, sex, pension receipt, and whether they give or receive support from adult children). Finally, as a child's migration can be expected to influence elderly well-being differently depending on the presence and location of other children, dummy variables were also included that indicated whether an elderly individual had a child in the same household and/or in the same country.

The determinants of the different well-being dimensions in Georgia and Moldova are shown in Tables 4 and 5, respectively. The models both confirm and contradict some of the results of the bivariate analysis. While in Georgia only physical well-being remains significant, with a child living abroad positively correlated with mobility and independence, the migration of a child in Moldova does not appear to affect elderly well-being in any of the indicators.

Table 4. Determinants of Dimension Well-Being in Georgia.

	House	Medication	Mobility	Contact	Depression	Life Satisfaction	MWI
Age 70+	−0.03 (0.02)	−0.18** (0.02)	−0.24** (0.02)	−0.15** (0.03)	0.02 (0.03)	−0.04 (0.02)	−0.17** (0.02)
Male	0.01 (0.02)	0.06** (0.02)	0.12** (0.02)	0.14** (0.03)	0.10** (0.03)	0.01 (0.02)	0.10** (0.02)
Moldovan	−0.01 (0.09)	0.02 (0.09)	−0.07 (0.09)	−0.08 (0.11)	−0.24* (0.12)	−0.13 (0.13)	−0.10 (0.12)
Urban	0.15** (0.02)	0.10** (0.02)	0.05† (0.02)	0.06* (0.03)	0.06* (0.03)	−0.01 (0.02)	0.09** (0.03)
Highest achieved education (ref category: Higher)							
Upper secondary	−0.08† (0.04)	0.04 (0.04)	−0.09† (0.05)	−0.03 (0.05)	0.03 (0.05)	−0.11* (0.05)	−0.07 (0.05)
Postsecondary	−0.14** (0.03)	−0.05† (0.03)	−0.06* (0.03)	−0.11** (0.03)	−0.03 (0.04)	−0.11** (0.03)	−0.14** (0.03)
Household composition (ref category: living alone)							
Living with a partner	0.08† (0.04)	0.09* (0.04)	0.01 (0.05)	−0.03 (0.05)	−0.04 (0.05)	0.12* (0.05)	0.03 (0.05)
Living with other adults	0.03 (0.05)	0.12** (0.04)	0.10* (0.05)	−0.05 (0.05)	−0.03 (0.05)	0.01 (0.05)	0.03 (0.05)
Living in a household with children	−0.00 (0.05)	0.12** (0.05)	0.09† (0.05)	0.00 (0.05)	−0.03 (0.06)	0.05 (0.05)	−0.01 (0.06)
Appropriate housing					−0.02 (0.03)	0.04 (0.03)	
Migrant child	0.02 (0.04)	0.06† (0.04)	0.07* (0.04)	0.06 (0.04)	−0.00 (0.05)	0.01 (0.04)	0.04 (0.04)
Child in the HH	−0.01 (0.04)	−0.07† (0.04)	−0.03 (0.04)	−0.07† (0.04)	0.01 (0.04)	0.07* (0.04)	−0.04 (0.04)
Child in the country	−0.05 (0.05)	−0.01 (0.05)	−0.01 (0.05)	0.02 (0.06)	−0.06 (0.06)	−0.09† (0.05)	−0.07 (0.05)
Migrant Child × Remittances	0.02 (0.04)			0.19** (0.05)	0.08† (0.04)	0.01 (0.04)	0.08* (0.04)
Poverty status	−0.11** (0.02)		−0.12** (0.02)		−0.13** (0.03)	−0.12** (0.03)	−0.21** (0.03)
Supported adult children		0.21** (0.03)	0.24** (0.03)	0.20** (0.03)	0.12** (0.03)	0.02 (0.02)	0.22** (0.03)
Got support from adult children		−0.11** (0.02)	−0.15** (0.03)	−0.01 (0.03)	0.04 (0.03)	−0.03 (0.03)	−0.09** (0.03)
Observations	2,204	2,204	2,204	2,204	2,204	2,204	2,204
F stat	10.4	15.0	20.2	13.0	5.9	5.2	20.9
Prob >F	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note. HH = household; MWI = multidimensional well-being. Authors' calculations. Robust standard errors in parentheses. Some independent variables have been excluded in some of the regressions due to possible endogeneity, high correlation with the dependent variable, or lack of explanatory power.
†$p < .1$. *$p < .05$. **$p < .01$.

Table 5. Determinants of Dimension Well-Being in Moldova.

	House	Medication	Mobility	Contact	Depression	Life Satisfaction	MWI
Age 70+	0.00 (0.02)	−0.23*** (0.02)	−0.25*** (0.02)	−0.12*** (0.03)	−0.04 (0.03)	0.00 (0.03)	−0.16*** (0.03)
Male	0.01 (0.02)	0.06** (0.03)	0.08*** (0.03)	0.13*** (0.03)	0.08*** (0.03)	−0.00 (0.03)	0.13*** (0.03)
Moldovan	−0.04† (0.03)	−0.04 (0.03)	−0.08* (0.03)	−0.02 (0.03)	−0.02 (0.03)	0.07† (0.03)	−0.04 (0.03)
Urban	0.17*** (0.02)	−0.03 (0.03)	−0.03 (0.03)	−0.07* (0.03)	0.02 (0.03)	0.03 (0.03)	0.04 (0.03)
Highest achieved education (ref category: Higher)							
Lower secondary	−0.12*** (0.03)	−0.17*** (0.04)	−0.26*** (0.04)	−0.13*** (0.04)	−0.17*** (0.04)	−0.08† (0.04)	−0.23*** (0.04)
Upper secondary	−0.04 (0.04)	−0.15*** (0.05)	−0.18*** (0.05)	−0.02 (0.05)	−0.13* (0.05)	−0.08 (0.05)	−0.11* (0.05)
Postsecondary	−0.06* (0.03)	−0.09* (0.04)	−0.10* (0.04)	−0.06 (0.04)	−0.12** (0.04)	−0.08† (0.04)	−0.12** (0.04)
Household composition (ref category: living alone)							
Living with a partner	−0.00 (0.03)	0.01 (0.04)	0.02 (0.04)	0.00 (0.04)	0.08* (0.04)	0.02 (0.04)	0.06 (0.04)
Living with other adults	−0.05 (0.03)	−0.08† (0.04)	−0.01 (0.05)	−0.11* (0.05)	0.00 (0.05)	−0.03 (0.05)	−0.10* (0.05)
Living in a household with children	−0.06† (0.04)	−0.13*** (0.05)	−0.04 (0.05)	−0.22*** (0.05)	−0.01 (0.05)	−0.03 (0.05)	−0.17*** (0.06)
Appropriate housing					0.07* (0.03)	0.08* (0.03)	
Migrant child	−0.00 (0.03)	−0.00 (0.03)	−0.02 (0.04)	−0.04 (0.04)	0.02 (0.04)	−0.01 (0.04)	−0.03 (0.04)
Child in the HH	−0.01 (0.03)	−0.04 (0.04)	−0.09* (0.04)	−0.03 (0.04)	−0.01 (0.04)	0.03 (0.05)	−0.02 (0.05)
Child in the country	0.05 (0.04)	−0.05 (0.04)	−0.07 (0.04)	−0.10* (0.04)	0.02 (0.04)	0.04 (0.05)	−0.03 (0.05)
Migrant child* remittances	0.05 (0.04)			0.02	−0.05 (0.06)	0.13* (0.06)	0.08 (0.06)
Poverty status	−0.05* (0.02)		0.00 (0.03)		−0.05† (0.03)	−0.06† (0.04)	−0.02 (0.03)
Supported adult children		0.14*** (0.03)	0.17*** (0.03)	0.20*** (0.04)	0.04 (0.03)	0.05 (0.04)	0.15*** (0.04)
Got support from adult children		0.01 (0.03)	−0.08† (0.03)	0.06† (0.03)	0.08*** (0.03)	−0.07* (0.03)	0.03 (0.03)
Observations	1,543	1,543	1,543	1,543	1,543	1,543	1,543
F stat	8.4	9.9	15.0	6.6	3.6	1.8	8.7
Prob >F	0.00	0.00	0.00	0.00	0.00	0.02	0.00

Note. HH = household; MWI = multidimensional well-being. Authors' calculations. Robust standard errors in italics. Some independent variables have been excluded in some of the regressions due to possible endogeneity, high correlation with the dependent variable, or lack of explanatory power.
†p < .1. *p < .05. **p < .01.

The positive relationship between migration and well-being in the domain of physical health in Georgia is likely explained, at least in part, by migrant selectivity. As found by prior studies (such as Abas et al., 2009), adult children with less physically independent and mobile parents may be less likely to enter migration. At the same time, other characteristics that would predict successful aging—such as higher education and co-residency with an extended family—may also correspond to migration, making the direction of causality even more difficult to determine.

Other variables significantly correspond to the probability of an elderly person attaining well-being in different domains. Aspects like education, household composition, age, sex, and whether the elderly person gives or receives support are important determinants of well-being in both Moldova and Georgia. As expected, belonging to the older age cohort decreases the probabilities of being well-off in most indicators. High levels of education in the household, being a male, living in an urban area, and supporting adult children, however, are positively correlated with well-being attainment. Not surprisingly, being poor is correlated with lower levels of well-being in all indicators in Georgia and with lower housing and emotional well-being in Moldova. In terms of household composition, in Georgia living with a partner is associated with higher levels of life satisfaction, independence, and housing well-being when compared to living alone, while living in households with children or other adults is associated with higher levels of physical well-being. In Moldova, living with other adults or in households with children is correlated with lower levels of social well-being as well as with a lower likelihood of being independent. Compared to these components of an elderly individual's life, the migration status of an adult child is a relatively weaker explanatory vector of well-being attainment.

Conclusion

The results of the econometric models suggest that the migration of an adult child has an ambiguous relationship with the multidimensional well-being of elderly individuals "left behind." The migration of an adult child does not appear to be associated with emotional and social well-being. At the same time, in Georgia, migration is associated with higher physical well-being rates for the elderly left behind, while in Moldova, no significant association is found between migration and physical health of elderly individuals. This contradicts our hypothesis that the physical well-being of elderly with adult children living abroad would be worse than that of their contemporaries without children in migration. The hypothesis that housing living standards

would improve as a result of remittances sent by migrant children does not hold either. We attribute this finding to the relatively low percentage of the elderly receiving remittances as well as to the fact that elderly individuals may be spending the money on other needs.

These findings differ from past studies that suggest deterioration of elderly well-being following the migration of an adult child, as a child's migration was never associated with worse well-being outcomes in the analysis. Such findings challenge conventional wisdom yet may be explained by how migration and other aspects of the social environment in which elderly persons are embedded interact in these specific country contexts. In both countries, elderly persons who reported providing support to their adult children expressed higher well-being outcomes, particularly in the physical and social dimensions. In Georgia, residing with persons under the age of 18 or with other adults in the same household also corresponded to higher well-being outcomes in certain dimensions, while the opposite was true in Moldova. Such results may suggest that in both countries, an older person's living arrangements may reflect different underlying care behaviors that are affected differently by migration. In Georgia, it is not uncommon for elderly persons to live with their adult children and grandchildren, where they both receive material/functional support from and give such support to other household members (Badurashvili et al., 2008). As elderly persons are already embedded within larger kin-based support systems, migration may not constitute such a challenge to care. In Moldova, multigenerational households are not as common, and particularly in urban areas, there is a strong correlation between living in a complex household and being in or at risk of poverty. At the same time, there is some literature to support the idea that migration decisions are negotiated within families to ensure that elderly parents are not left without any familial support (Stöhr, 2013). Such codecision-making may indeed help ensure some continuity of care for older persons, yet it cannot completely address preexisting sources of vulnerability such as poverty. While more specific analysis would be needed to understand how migration and elder care behaviors are specifically related, these results do signal the importance of understanding how living arrangements, migration, and care intersect.

The results of the multivariate analysis demonstrate an important methodological hiccup experienced in much migration research—the problem of endogeneity. Many of the factors that are likely to influence the quality of an elderly individual's life, such as education, material resources, and the presence of extended social networks, are also likely to influence the migration decisions made by household members. Education, for instance, has a strong

influence on intergenerational human capital transfer, while an extended social network may directly facilitate migration because it provides a greater scope for the mobilization of needed financial resources. At the same time, an elderly person's QOL prior to migration may also play a role in the migration decision. Determining the direction of influence is thus difficult to do, particularly without any premigration baseline data and the absence of appropriate instruments to predict child migration.

Despite the lack of an appropriate identification strategy to estimate a causal relationship between migration and elderly well-being, there are channels by which adult child migration could affect the mobility of their elderly parents. Child caring or home-care responsibilities following the migration of an adult child could imply that an elderly individual will be engaged in more physical activity, and this can translate into the maintenance of functional capacity into older age. Migrants may also provide social remittances related to health-care practices (Taylor, 1999) as well as financial remittances that can help their elderly parents better deal with the challenges associated with ageing.

While caution must be taken in interpreting results, given the discussed caveats, the different role a child's migration plays between Moldova and Georgia does merit further exploration. Migration in Moldova has been credited as a much more influential and disruptive phenomenon than could be inferred from the present analysis. The limited significance of migration on different aspects of elderly well-being may suggest that Moldovan society has quickly adapted to temporary, wide-scale migration. In Georgia, what is interesting to note is the more positive role migration plays in some aspects of well-being such as physical health. While, again, this relationship may simply be explained by migrant selectivity, characteristics of Georgian migration may also support this positive correlation. Settlement rather than temporary stay in countries of residence is slightly higher among Georgian than Moldova migrants. The higher average age of Georgian migrants, the greater proportion of women among current migrants, and the higher rates of extended family coresidency may help offset the negative externalities of migration while encouraging the positive ones. As the first systematic assessment of the effects of a child's migration on elderly well-being, this study has illustrated the complexities of the relationship—and importantly suggested directions for future study.

Declaration of Conflicting Interests

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Notes

1. Adapted from *Mental Health National Outcomes and Casemix Collection: Overview of clinician-rated and consumer self-report measures, version 1.50*. Department of Health and Ageing, Canberra, 2003.
2. For more information, see http://www.gallup.com/poll/122453/understanding-gallup-uses-cantril-scale.aspx

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