Central European Economic Journal

sciendo

ISSN: 2543-6821 (online)

Journal homepage: http://ceej.wne.uw.edu.pl

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To cite this article

Nicińska, A. (2022). Identity and Private Transfers of Time and Money. Central European Economic Journal, 9(56), 1-28.

DOI: 10.2478/ceej-2022-0012

To link to this article: https://doi.org/10.2478/ceej-2022-0012

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Identity and Private Transfers of Time and Money

Abstract
We introduce the perspective of identity economics to a formal model of rational choice of private transfers to examine the impact of geographical proximity on optimal time and money transfers within and outside of families. We argue that identities affect private transfers through the internalization of social norms governing informal support and incorporate in the formal model the fact that time, unlike money transfers, demands face-to-face presence. We solve the utility maximization problem and derive propositions concerning factors affecting transfers. Then we test them empirically using longitudinal and cross-sectional data from the Survey on Health, Ageing and Retirement in Europe. We address the possible endogeneity with instrumental variables. Empirical results based on transfers from family members and unrelated individuals are suggestive of a significant role of identity in private transfers in line with the theoretical model. We find that geographical proximity enhances time, but not money, transfers. Our results yield evidence for a stronger role of emotional rather than genetic proximity in interhousehold transfers.

Keywords
private transfers | intergenerational transfers | emotional proximity | confidant network | kinship

JEL Codes
D64, J14, J19

Introduction

Among various non-market behaviours, private transfers (i.e., informal support) are particularly relevant to current societies. Firstly, in economies with underdeveloped financial markets with limited access to insurance and lending, informal support networks giving money transfers operate as safety nets. With respect to time transfers, informal sources of personal care and instrumental help are essential to meet the needs of dependents in countries with limited access to market services and welfare state institutions. The family has been traditionally the main source of support in such circumstances. Secondly, also in developed countries the role of private transfers becomes more and more important. A number of phenomena contributes to that: population ageing, reduced fertility and increased childlessness as well as growing spatial mobility, and finally reduced stability of partnership relationships and growing complexity of family relations. Under such circumstances, private intergenerational transfers of time and money to older adults from their family members might be insufficient to ensure well-being in older age, and the role of sources of support alternative to family is growing, especially in the institutional environments with limited access to formal sources of support such as public transfers and services. Because alternatives competing with family obligations become more central to individual identities, family relations become more freely defined, and it seems that the emotional and geographical proximity between genetically close people should not be taken for granted. Therefore, not only the sustainability of family-based informal support for older individuals in need for help is questioned, but also the tension between type of support (either time or money) is growing as money transfers depend mostly on financial resources, while time transfers depend on other factors, such as geographical proximity. The sustainability and the tension are crucial for the well-being of transfers' recipients and donors. Surprisingly, transfers are studied mostly between related individuals, despite numerous studies show that the unrelated also engage in help. Moreover, the focus of attention was placed on money transfers, while time transfers have achieved relatively little attention in the economic literature. In this paper, we address these gaps.

We develop a formal model explaining optimal private transfers of time and money depending on individual identity and geographical proximity, and we test predictions derived from theoretical considerations. The choice between money as opposed to time transfers is particularly relevant to us, and we examine the distinct roles that identity and geographical proximity play in choosing optimal financial and non-financial support. We refer to identity as a strength of the internalization of social norms concerned with private transfers. We examine two forces driving the internalization (i.e., making individuals more inclined to give transfers): primary and secondary socialization taking place within the extended family and peer group, respectively. We find the inclusion of unrelated donors in the model important because the availability of alternatives to family sources of support becomes increasingly relevant, taking into account current changes in family structures and functions.

Our study speaks to the literature on intergenerational transfers, usually treated as a family phenomenon, after Becker's (1981) seminal paper. Some theoretical explanations referring to alternative motivations in addition to kinship altruism can be applied to settings other than family, for example, reciprocity, warm-glow or reputation (Andreoni, 1990; Cox, Zekeriya, & Jimenez, 1998; Lundholm & Ohlsson, 2000). However, economic empirical analyses were largely confined to within-family intergenerational transfers. The existing literature on private transfers from unrelated individuals is focused on care and lacks an economic theoretical background (Conkova, 2019).

A large body of economic literature on private transfers is centred on the motivation for giving (Albarran & Attanasio, 2003; Smith, Kehoe, & Cremer, 1995). Instead, we refer to other strain of theoretical literature seeking explanations for giving behaviours in family interactions (Byrne et al., 2009) and generational composition of family (Cox & Stark, 2005; Stark & Nicińska, 2015). One of the contributions of the latter models points to a fundamental difference between giving attention attached to a time transfer and simply giving money. Yet again, these models also fail to explain transfers from unrelated individuals. It is an important lacuna because empirical studies show that neighbours are similarly likely as distant relatives to engage in help with home duties (Deindl & Brandt, 2017; Kalwij, Pasini, & Wu, 2014).

This study contributes to the literature by proposing a model inspired by the concept of identity economics (Akerlof & Kranton, 2000). Akerlof and Kranton (2010) give charity donations as an example of identity underlying individual behaviour. They argue that self-identification with a group of people or with an institution can lead to private transfers. By doing that, the authors refrain from identifying specific Becker-style motives for giving, akin to Couch, Daly & Wolf (1999) and Schwartz (2006). Instead, the focus is on the willingness to reject or identify with the existing social norms rooted in various motivations for supporting those in need. Such an approach allows one to cover different types of individuals with different motivations to give in single theoretical model yielding testable predictions.

Another contribution we bring speaks to the rich empirical literature examining factors that shape private transfers. Our empirical analysis refers to a yet unexplored longitudinal feature of the Survey on Health, Ageing and Retirement in Europe (SHARE), namely, the longitudinal data merged between waves at respondents' children's level. This approach enables a longitudinal analysis of donor-recipient dyads instead of respondents' households, which is critical to the identification of causal relations between private transfers and the characteristics of donors and recipients.

1. Analytical Setting

Akerlof and Kranton (2010) provide a simple method of analysis by specifying identity elements in the standard economic analysis of utility maximization. First, they capture identities by assigning social categories to individuals. Usually, there are two categories known as "insiders" and "outsiders," depending on whether a social norm is fully internalized or in conflict with the individual's identity, respectively. We treat these two categories as two specific cases of the strength of the internalization of the social norm. Second, they define social norms that are characteristic of these categories. In our paper, the social norms concern the provision of private transfers. Third, they relate the identity categories to utility function. Insiders enjoy acting in line with the norm, whereas outsiders enjoy fulfilling social expectations by acting in line with the social norm but to a lesser extent than insiders, the identity being in conflict with the social norm.

The internalization of social norms concerning private transfers of time and money is a part of the socialization process. We argue that primary socialization, which takes place in a family often composed of genetically related parents and children, results in a positive relation between genetic proximity and the internalization of a social norm, leading to private transfers. In other words, genetically distant individuals would be more likely to treat the social norm of informal support as external to their identities. Primary socialization in families is crucial to shaping identity, and in many cultures, the norm of supporting family members is instilled from the youngest ages (Brewer, 2001). It is highly likely to be internalized and prevail for a lifetime. Consistently, the existing literature has established that private transfers, especially of money, take place foremost within a nuclear or, in some cultures, extended family (Attias-Donfut, Ogg, & Wolff, 2005). Johnson (1983) found that family members provide care in serial order. Byrne et al. (2009) confirmed that closer bonds between parents and children than between parents and children in-law affect transfers of care. Boaz and Hu (1997) showed the pivotal role of close relatives in the group of care-givers. The extent of genetic relatedness is an important factor explaining private transfers, and we use it as a measure of identity concerning the social norms of informal support. However, unlike in kinship, where altruistic models of private transfers prevail, we allow for the occurrence of private transfers between unrelated individuals.

Another source of socialization is peer groups, where various relations, including friendship and comradeship, exist between individuals. The role of peers and outside family reference groups becomes increasingly important starting from the entry to the education system and affects the set of socially acceptable intergenerational family relations (Swartz, 2009). The reference groups consisting of peers may enhance individualism, female independence and labour participation, and affect other lifestyle choices (Fekadu & Kraft, 2002; Neighbors et al., 2010). Finally, social movements supporting gender equality seem to weaken the internalization of care-giving roles by women (Hanlon, 2009). These in turn affect the strength with which the norm to support others is internalized.

Providing time transfers demands face-to-face contact, which implies for emotionally close individuals an opportunity to enjoy each other's company. This latter fact creates an externality: people prefer to give time transfers to individuals close to them emotionally, and also to receive time transfers from them because it gives them the added pleasure of spending time together, and spending time together is an immanent feature of time transfers. Note that such externality does not take place for money transfers. The emotional closeness between two individuals is assumed to be symmetric for two theoretical reasons, and also for simplicity, because qualitative predictions of the model are insensitive to this assumption. First, under altruistic motivations, the appreciation of the support received is a driver for giving, which means that the utility of the donor is directly linked to the utility of the recipient, which supports the symmetry. Second, under strategic giving, the exchange of transfers between individuals leads to reciprocity, which also supports the symmetry assumption. Therefore, it can be assumed that the additional felicity from receiving time transfers from loved ones, on top of and beyond the time transfers themselves, is proportional to the extra felicity a recipient derives from spending time with those who appreciate their presence a great deal while giving time transfers.

We emphasize that genetic proximity is a theoretical concept distinct from emotional proximity, though in practice these two types of proximity are likely to coexist. Empirical observations showing that confidant networks, defined as a set of individuals close to, and trusted by, an individual (Cornwell et al., 2009), are often family-based in the population of older adults in Europe (Stoeckel & Litwin, 2013) do not question the validity of our conceptualization. We take on a more general approach, allowing unrelated individuals to be close emotionally. Furthermore, we allow private transfers from genetically and emotionally distant individuals, such as volunteers.

In addition to genetic and emotional proximity, numerous studies (Heylen et al., 2012; Litwak & Kulis; 1987; Stark & Cukrowska-Torzewska, 2018) found geographical distance to be a relevant factor for private transfers. Geographical proximity affects transfers of time and money in a complex way. On the one hand, it has a positive impact on travel time and travel costs that constitute a hassle cost of time transfers given in person. On the other hand, the availability of money transfer services and online banking makes the cost of money transfers negligible and independent from geographical proximity. Second, geographical proximity is likely to be linked to wages and economic migration. On the one hand, a vast body of literature on international migration shows that a substantial

increase in wages leads to money transfers (Rapoport & Docquier, 2006) from migrants to family members staying behind. On the other hand, assimilation of permanent migrants can loosen or entirely remove any ties with the home country, including with the family members who stayed behind. Therefore, in our analysis, we consider geographical, genetic, and emotional proximity.

To summarize, the closer the genetic relation between the potential donor and recipient, the more likely it is that the donor has internalized the norm of giving support. Additionally, the closer the emotional relation between the potential donor and recipient, the more they enjoy the time spent together. Geographic proximity is another factor relevant to private transfers. In what follows, we develop a framework combining interhousehold money and transfers, identity, and geographic proximity. In addition to time spent on travel and face-to-face time transfers, we distinguish between spare (leisure) time and work time. For the clarity of our argument, we assume that the propensity to give appears with the same strength regardless of the transfer type (whether money or time). We assume the geographical proximity between donors and recipients to be exogenous in our theoretical considerations concerned only with pairs of individuals living in separate households. Next, we examine theoretically and test empirically how identity and geographic proximity affect private transfers of time and money.

2. Formal Model and Propositions

Let us consider an individual **I** of category j (i.e., extent of genetic proximity) deriving felicity from own consumption C_i and spare time S_i. In addition, **I** enjoys acting in line with the social norm of supporting individual **E** by giving to **E** time transfers ($T_{i,e}$) and money transfers ($M_{i,e}$). The identity conceptualized as the strength of internalization of the social norm of informal support is represented by parameter $\alpha_{i,e}^{j}$. The larger the $\alpha_{i,e}^{j}$, the stronger the internalization of the social norm. For simplicity, we assume that extreme outsiders who find the norm entirely in conflict with their identity have $\alpha_{i,e}^{0} = 0$ and do not make any transfers. This case is excluded from the analysis, and we only consider $\alpha_{i,e}^{j} > 0$. The externalities of spending time while transferring care and help between close individuals are represented by parameter $\theta_{i,e} \in (0,1)$. The larger the $\theta_{i,e}$, the stronger the externality. In our approach, financial and non-financial resources available to the donor, but not the recipient, are relevant for the optimal choice.

Let us assume that the utility function of **I** on domain $\boldsymbol{R}_{+}^{5}$ takes the following form:

$$U_i^j(C_i, S_i, L_i, M_{i,e}, T_{i,e}) = \\ = u_i(C_i, S_i(L_i)) + \alpha_{i,e}^{j} u_{i,e}(M_{i,e}, T_{i,e}^{\theta_{i,e}}), \quad (1)$$

where L_i is **I**'s labour hours ($0 < L_i < \tau$), and τ is the time endowment ($\tau = cons > 0$).

Individual **I** faces the following budget and time constraints, respectively:

$$C_i + M_{i,e} + c_{i,e} = w_i L_i, \quad (2)$$

$$S_i + L_i + T_{i,e} + t_{i,e} = \tau, \quad (3)$$

where $c_{i,e}$ is the total cost of travel between **I**'s and **E**'s households ($c_{i,e} = c(t_{i,e}) > 0$),

$t_{i,e}$ is the time spent on travel between **I**'s and **E**'s households ($0 < t_{i,e} < \tau$), and

w is **I**'s wage per hour ($w_i = w(t_{i,e}) > 0$, $w' = \frac{\partial w_i}{\partial t_{i,e}} > 0$).

For simplicity, we assume that $u(x,y) = \ln(xy)$, and remove super- and subscripts from the equations. We proceed to the maximization of the utility function $U = \ln C + \ln S + \alpha \ln M + \alpha\theta \ln T$, subject to the set of constraints $g_1 = wL - (C + M + c) = 0$, $g_2 = \tau - (S + L + T + t)$, using the following Lagrangian function:

$$F = \ln C + \ln S + \alpha \ln M + \alpha\theta \ln T + \\ + \mu_1(wL - C - M - c) + \mu_2(\tau - S - L - T - t).$$

First Order Conditions (FOCs)[1] yield $x^* = (C^*, S^*, L^*, M^*, T^*)$, where

$$C^* = \frac{w(\tau - t) - c}{2 + \alpha + \alpha\theta}, \quad (4)$$

$$S^* = \frac{w(\tau - t) - c}{w(2 + \alpha + \alpha\theta)}, \quad (5)$$

1 $\frac{\partial F}{\partial C} = \frac{1}{C} - \mu_1 = 0, \frac{\partial F}{\partial S} = \frac{1}{S} - \mu_2 = 0, \frac{\partial F}{\partial L} = w\mu_1 - \mu_2 = 0, \frac{\partial F}{\partial T} = \frac{\alpha\theta}{T} - \mu_2 = 0, \frac{\partial F}{\partial \mu_1} = wL - C - M - c = 0, \frac{\partial F}{\partial \mu_2} = \tau - S - L - T - t = 0.$

$$L^* = \frac{w(1+\alpha)(\tau - t) + (1+\alpha\theta)c}{w(2+\alpha+\alpha\theta)}, \quad (6)$$

$$M^* = \frac{\alpha(w(\tau - t) - c)}{2+\alpha+\alpha\theta}, \quad (7)$$

$$T^* = \frac{\alpha\theta(w(\tau - t) - c)}{w(2+\alpha+\alpha\theta)}. \quad (8)$$

Because functions U and g_1, g_2 are C^1, g_1, g_2 are linear, U is concave on its domain, and FOCs are met at x^*, the second order conditions for a strict global maximum at x^* on the constraint set g_1, g_2 are met.

If $w(\tau - t) \leq c$, individual **I** would not be able to consume anything; this case is excluded. Based on the formal model, we prove claims (see the Appendix) and delineate the following propositions concerning the role of proximities in the provision of private transfers.

Let us recall that a larger distance is likely accompanied by higher wages and greater travel time. Based on Claim 4 ($\frac{dM^*}{dt} > 0$ if $w'(\tau - t) - w > c'$), we argue that:

> *Proposition 1*: Geographically distant individuals provide larger money transfers than geographically close individuals, as long as the marginal travel cost in relation to the marginal increase of wage in travel time is sufficiently small.

Our theoretical considerations yield particularly interesting predictions concerning the impact of geographical proximity on time transfers because the three factors connected with spatial mobility (i.e., wage, travel time, and travel cost) affect the optimal choice differently. According to Claim 9 ($\frac{dT^*}{dt} < 0$ if $w > \frac{-c' + \sqrt{c'^2 + 4cw'}}{2}$),

> *Proposition 2*: Geographically distant individuals provide smaller total time transfers than geographically close individuals, provided that the distant individual's wages are sufficiently large, keeping other relevant factors constant.

We close this section with two propositions testing the introduced approach to modelling private transfers. Based on Claim 2 ($\frac{dM^*}{d\alpha} > 0$) and Claim 7 ($\frac{dT^*}{d\alpha} > 0$), we argue that:

> *Proposition 3*: The more the individual's identity is in line with the social norm for informal support, the larger the total time and money transfers the individual chooses, keeping other relevant factors constant.

We assume that emotional proximity between individuals makes them willing to spend time together. Because time transfers from those who are emotionally close give positive externalities to both recipients and donors, which are absent from money transfers, based on Claim 1 ($\frac{dM^*}{d\theta} < 0$) and 6 ($\frac{dT^*}{d\theta} > 0$), we propose that:

> *Proposition 4*: Emotionally close individuals give time rather than money transfers, keeping other relevant factors constant.

3. Empirical Strategy

3.1. Data, Sample Selection, and Measures

We use longitudinal data from the Survey on Health, Ageing and Retirement in Europe (SHARE) that collects multidisciplinary data on individuals aged 50+ living in European countries and Israel. Currently, seven waves of data collection are available, spanning from 2004 to 2018. SHARE provides information on private transfers as well as numerous details of the respondents' socio-economic and health characteristics, including the confidants' social network composition. We refer to data on private transfers of money and time (practical household help, assistance with paperwork, and interhousehold personal care) given to respondents as observed in SHARE waves 1–2 and 4–6 for 19 countries (Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Israel, Italy, Luxembourg, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland). Furthermore, we link the data with the information on potential donors of transfers, including members of personal confidant networks comprising up to seven individuals observed in waves 4 and 6. We exclude respondents living in nursing homes or similar institutions from the analysis.

In waves 1–2, the value of financial transfers as well as the number of hours of time transfers were recorded at the household level, with the exception of personal care observed at the individual level. Up to three transfers of each type (money or time) were reported for a household. We assign transfers observed at the household level to both partners from the household. The value of financial transfers refers

to the total amount of transfers of at least 250 euro (expressed in purchasing power) from a single donor given since the last interview (or in the last 12 months for first-time interviews). Information from randomly unfolding brackets that respondents reported as a range within which the value of transfers falls was used to impute missing observations, assuming normality of distribution. Starting from wave 4, only the occurrence and, in the case of time transfers, also the frequency, is recorded.

We operationalize the identity and external effects using data on genetic and emotional proximity. The SHARE survey design allows retrieving information on the geographical proximity to the respondents' confidants, children, partners, or neighbours. The categorical variable measuring geographical proximity uses distance expressed in kilometres, which is an imperfect, but the only available, proxy for the travel time used in theoretical model. Moreover, co-residence, with the respondents being the potential transfer recipients, can be identified for children, children-in-law, partners, parents, and parents-in-law. Genetic proximity between the transfer donor and the recipient is observed for each reported transfer. Respondents were asked about the frequency of contact with their children, which is often used as a proxy for emotional closeness (e.g., Lawton, Silverstein, & Bengtson, 1994). With regard to confidants (whether related or not), respondents were directly asked how close they feel to the confidant. We use this information to assess the value a recipient attaches to the time transfer stemming from spending time with a particular time transfer donor, on top of the sole felicity from the transfer.

In SHARE, information on geographical proximity to children (at least three of them) is solicited in the respondents' initial wave of participation, and the subsequent waves only ask if it has changed. In our research, the geographical proximity to the potential transfer donor is crucial for understanding private transfers. Thus, we update the data on children's proximity from previous waves, merging children between waves based on gender and year of birth, as suggested in the release guides (Munich Center for the Economics of Ageing 2018). Because genetic and emotional proximities are also essential to the theoretical model, a similar matching between waves was performed with respect to frequency of contact between a parent and a child, and whether a child is step, foster, adopted, or from the partner's previous relationship (also with distinction between step, foster, or adopted). To the best of our knowledge, the longitudinality of the SHARE data on children have remained unexplored so far in the research on private transfers. To ensure comparability between respondents, we exclude childless individuals from the panel sample.

We paid particular attention to the distinction between intra- and interhousehold transfers, cross-checking the data on transfers received from outside the household and the distance to the donor of such transfers. In the analysis of children (confidants), we excluded children (confidants) living in the same household as potential transfer donors, which substantially reduced the samples of transfers from children and of transfers from confidants. For the same reason, we removed observations concerning transfers received from partners and other family members living in the same household, which led to a reduction of the sample by 18 per cent in total. Note that individuals living in same building but in separate households were kept in the sample. Detailed structure of the research samples by countries can be found in Table A1 in the Appendix.

In sum, we obtained the longitudinal sample of all respondents who were parents, as well as the subsample of the pairs of a respondent matched with each of the respondent's children, merged over waves. Additionally, we used the cross-sectional data on respondents and each of their children matched with each of their social network members (i.e., confidants) reported in wave 6, yielding two samples of respondent-confidant and parent-child dyads. These operations yielded three research samples with 434,575 longitudinal respondent-level observations of parents, 25,475 longitudinal observations on parent-child dyads, and 40,699 cross-sectional respondent-confidant dyads, respectively. In the latter two research samples, the unit of the analysis is a dyad of the potential transfer giver and recipient where the survey respondents are recipients.

Tables 1 and 2 present descriptive statistics of the research samples suggestive of the substantial role of the selection of the analytical framework and empirical strategy. The representativeness of longitudinal data might be questioned not only due to panel attrition, but also due to the unavailable information on crucial characteristics of some potential transfer donors, such as genetic relationships, geographical proximity, or frequency of contact, not to mention the measurement error of interhousehold transfers. In case of the cross-sectional research samples, the problem of missing data

Table 1. Descriptive Statistics of the Longitudinal and Cross-sectional Research Samples

	Longitudinal	Cross sectional	Cross sectional
	Respondent	Parent-Child	Respondent-Confidant
	Mean		
Respondent's age (years)	66.13	68.50	67.37
Respondent's number of ADLs	0.24	0.48	0.20
Respondent's number of IADLs	0.42	0.88	0.37
Respondent's extended family size	9.21	9.30	9.07
Time transfers (hours per week)	25.16	-	-
Money transfers (euro)	2,621	-	-
	Percentage		
Female respondents	58.25	66.74	65.28
Respondents living alone	26.96	41.60	33.53
Respondents with non-genetic children	11.46	13.00	12.94
Respondents making ends meet			
With great difficulty	11.77	14.31	10.11
With some difficulty	27.52	29.01	24.27
Fairly easily	30.41	29.27	26.90
Easily	30.31	27.41	38.72
Time transfers occurrence	22.07	85.45	28.84
Money transfers occurrence	7.60	30.54	10.79
Observations	434,575	25,475	40,699

Note. Hours of time transfers and amounts of money transfers excluding outliers above 99.5 and 99.9 percentile, respectively. ADL, limitation with an activity of daily living; IADL, limitation with an instrumental activity of daily living.
Source. Authors' own tabulations based on SHARE waves 1–2, 4–6, release 6.1.1.

is negligible, but already a simple data description reveals pronounced differences between the two samples with respect to the role of geographical proximity of transfer donors. Thus, the framework using children as default candidates for private transfers' providers seems to lead to significantly different results than referring to confidants as such candidates.

3.2 Econometric Methods

We examine the extensive and intensive margin, using the probability of the transfer occurring and the total value of the transfer (i.e., the amount for money transfers in log, or the hours for time transfers in log), respectively, correcting for the potential sample selection bias with an instrumental variable. If children choose the distance from their household to their parents' household, endogeneity arises. Empirical results on the correlation between geographical proximity and private transfers (e.g., Boaz & Hu, 1997, Compton & Pollak, 2015) are mixed. Bonsang (2009) argues that the said correlation is limited and uses geographical distance as an instrumental variable in a model of informal support. Stark and Cukrowska-Torzewska (2018) develop a convincing argument supporting a link between geographical proximity and gender, attributing it to social norms that relegate care-giving duties to women. However, their empirical analysis is purely descriptive and does not control for the direct effects of care-giving on proximity.

We analyse the occurrence (the extensive margin) and, if available, the size (the intensive margin) of transfers received by respondents from all potential individuals whose geographical, genetic, or emotional proximities were known. To test the propositions,

Table 2. Percentage of Transfer Donors With Respect to Selected Characteristics in the Longitudinal and Cross-sectional Research Samples

	Longitudinal Respondent		Cross-sectional Parent-Child		Cross-sectional Respondent-Confidant	
	Time	Money	Time	Money	Time	Money
Geographical proximity to donor						
< 1 km	1.92	0.75	1.92	0.75	50.24	16.47
1 – 5 km	48.29	19.42	48.29	19.42	17.63	17.50
5 – 25 km	17.63	19.05	17.63	19.05	18.16	22.99
25 – 100 km	18.18	23.24	18.18	23.24	8.66	18.00
100 – 500 km	8.71	16.18	8.71	16.18	4.32	17.66
> 500 km	5.28	21.36	5.28	21.36	0.99	8.13
Contact with donor						
Daily	44.13	40.81	10.06	4.94	11.25	5.67
Several times a week	33.69	31.63	19.10	13.18	33.55	14.57
Once a week	15.05	17.24	23.48	17.13	22.26	19.84
Every two weeks	4.36	5.72	24.19	19.77	20.96	24.70
Once a month	2.07	3.51	13.68	13.84	7.48	16.60
Less than once a month	0.65	0.96	7.42	16.14	3.30	13.36
Never	0.06	0.13	2.06	14.99	1.21	5.26
Observations	19,182	4,790	1,550	607	2,152	247

Source. Authors' own tabulations based on SHARE waves 1–2, 4–6, release 6.1.1.

we estimate the following model with individual heterogeneity using longitudinal data:

$$y_{it} = X_{it}\beta_1 + IV_{it}\beta_2 + C_{it}\beta_3 + \alpha_i + u_{it}, \quad (9)$$

where y_{it} are private transfers from individual i at time t, X_{it}, IV_{it}, C_{it} are vectors of explanatory, instrumental, and control variables, respectively, β are estimated parameters, α_i is the unobserved fixed-over-time effect, and u_{it} is a random term.

Then, we refer to pooled Ordinary Least Square regressions using cross-sectional data:

$$y_i = X_{it}\beta_1 + IV_{it}\beta_2 + C_{it}\beta_3 + u_i. \quad (10)$$

We argue that identity depends on genetic proximity in a such way that closer individuals have a stronger internalization of the social norm to support each other. Therefore, the identity is captured by the genetic relatedness. Therefore, the vector of explanatory variables includes geographical proximity, genetic relatedness or declared extent of emotional closeness.

We control for the demand for support using the number of limitations in performing activities and instrumental activities of daily living (ADL and IADL, respectively). If possible, we proxy wages of transfer providers, unobserved in the survey, with their highest education level using the International Standard Classification of Education (ISCED) and employment status. Furthermore, we control for the age and gender of recipients and, if available, also of givers, the recipient's income decile (or ability to make ends meet, if income was unavailable), and the recipient's extended family size and country of residence.

We address the potential endogeneity between geographical proximity and private transfers by using the exchange rate that captures the exogenous macroeconomic situation in general and financial incentives for migration, notably during the analysed period in Europe. Another source of endogeneity might be the correlation between emotional and geographical closeness, which we address by referring to the frequency of contacts as a proxy of emotional

Table 3. Estimates of the Impact of Geographical Proximity Between Donors and Recipients on Private Transfers Using Panel Data With Unobserved Individual Effects

	(1)	(1a)	(1b)	(1c)	(2)
	Time Transfer	**Household Help**	**Personal Care**	**Paperwork Help**	**Money Transfer**
	Extensive Margin				
Geographical proximity	(ref.: same building)				
< 1 km	3.75e-05	-0.00859*	-0.0612***	-0.0767**	0.000398
	(4.03e-05)	(0.00207)	(0.00455)	(0.0154)	(0.000447)
1 to 5 km	8.39e-05	-0.0614***	-0.0453***	0.00707	0.000167
	(9.30e-05)	(0.00375)	(0.00190)	(0.0172)	(0.000181)
5 to 25 km	6.22e-05	-0.0622**	-0.0507**	-0.00752	0.000194
	(4.87e-05)	(0.0119)	(0.00589)	(0.0152)	(0.000196)
25 to 100 km	9.99e-05	-0.0813*	-0.0477**	-0.00343	9.21e-05
	(7.75e-05)	(0.0218)	(0.0108)	(0.00251)	(0.000102)
100 to 500 km	-0.00121	-0.0901**	-0.0572*	0.0228	-0.00232
	(0.00116)	(0.0173)	(0.0163)	(0.0178)	(0.00251)
> 500 km	0.000157	-0.0976**	-0.0186	-0.0582**	0.000219
	(0.000140)	(0.0192)	(0.0563)	(0.00848)	(0.000242)
Observations	17,594	11,132	11,132	11,132	5,247
R-squared	0.004	0.058	0.154	0.149	0.010
Number of waves	5	3	3	3	5
	Intensive Margin				
Geographical proximity	(ref.: < 1 km or the same building)				
1 to 5 km	0.157	0.277	-0.123**	-0.306**	0.0600
	(0.0497)	(0.111)	(0.00968)	(0.0190)	(0.0213)
5 to 25 km	0.0304	0.127	-0.149	-0.413*	-0.0677
	(0.0986)	(0.139)	(0.335)	(0.0477)	(0.0476)
25 to 100 km	-0.196*	-0.0425	-0.207	-0.784	-0.111
	(0.0193)	(0.0732)	(0.156)	(0.145)	(0.0579)
100 to 500 km	-0.335*	-0.232	0.210	-1.128***	0.0732
	(0.0418)	(0.0506)	(0.0888)	(0.0173)	(0.0729)
> 500 km	-0.233	0.0261	0.383	-1.577	0.0358
	(0.415)	(0.590)	(1.588)	(0.268)	(0.207)
Observations	6,249	5,302	672	1,935	1,538
R-squared	0.224	0.264	0.224	0.318	0.375
Number of waves	2	2	2	2	2
IV	Yes	yes	yes	yes	yes
Controls	Yes	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses.

Fixed effects with IV: exchange rate and controls: age, gender, number of ADLs and IADLs, ability to make ends meet, household and family size, country of residence.

Source. Authors' own estimations based on SHARE waves 1–2, 4–6, release 6.1.1.

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

proximity, if possible. All the means discussed in detail above support the feasibility of our assumption on the lack of sequential correlation between a random term and explanatory variables.

4. Results and Discussion

4.1. Main Results

The following analysis is concerned with the panel data estimations with unobserved individual effects of the extensive (occurrence) and intensive (magnitude) margin of interhousehold private transfers with the exchange rate as an instrumental variable, aimed at disentangling causal relations. Two separate analyses examine the effects of genetic proximity and geographical proximity. Regrettably, the construction of the survey did not allow us to control for both of them simultaneously, which we bear in mind when interpreting the results.

In the analysis of geographical proximity effects (see Table 3), we found no impact on the probability of interhousehold time and money transfer occurrence (i.e., the extensive margin). However, the analysis of non-financial support types reveals that the distance between potential donor and recipient affects the type of support, in line with Proposition 2. Household help seems to be affected monotonously by physical distance. We observe that the negative impact of geographical distance on the probability of receiving household help becomes the more pronounced the larger the distance between potential donor and recipient, ranging from 1 to 10 per cent. That means for an average respondent that if a donor chooses to move out of the same building to a place within a 1 km radius, as opposed to a place located more than 500 km away from the respondent, the probability of time transfers from that donor drops by 4 per cent in the former case as opposed to 48 per cent in the latter.

Interhousehold personal care receipt also declines with distance. The relation is constant as donors moving out of the same building as transfer's recipient to any of the analysed categories of geographical proximity are less likely to provide personal care by about 5 to 6 per cent. The effect for distances above 500 km away is statistically insignificant, which might result from small number of such cases. The analysis of the transfer size (i.e., internal margin) shows that hours of time transfers are indeed significantly reduced with the larger distance from the donor of at least 25 km, supporting Proposition 2. Interestingly, we find no effect on geographical proximity for money transfers. If there is significant unification of the labour market and little correlation between wage increase and moving further away from recipient's home, as in our research sample (V-Cramer test equal to 0.076 for the education attainment and the distance to parents for the children in the cross-sectional research sample of parent-child dyads), the latter finding does not reject Proposition 1 because it holds only under conditions unlikely to occur in this particular context (sufficiently small marginal travel cost in relation to marginal wage).

Table 4 shows results for the role of genetic proximity (differentiating among friends, neighbours and others, within the unrelated) on the extensive margin (i.e., probability of receiving support) for time and money transfers. We find no effects of genetic relatedness on the probability of receiving money transfers whatsoever. Similarly, we find little evidence of the role of genetic proximity on the extensive margin of time transfers. Only in the case of paperwork help, we might conclude that this is a domain of familial support, as more genetically distant individuals are usually less likely to engage in such assistance than own children and parents. The positive coefficients on parents in the analysis of the receipt of interhousehold personal care imply that in three-generational families, parents are more likely to take care of respondents than their children. This observation might be interpreted as an indication of larger time assets of retirees compared to individuals of working age or of a stronger internalization of social norms concerning care-giving in cohorts born earlier than in more recent cohorts. As far as household help is concerned, we have already shown that this type of support is most sensitive to geographical distance. Thus, the large positive coefficient on neighbours likely results from the geographical proximity to potential receivers.

In the light of the above findings, the effects on the magnitude of interhousehold support are particularly interesting. For time transfers, we find that unrelated individuals (friends, neighbours, and others) as well as children-in-law give less time than own children. Despite neighbours being 10 per cent more likely to provide household help, they do so less intensely by one hour per week than a recipient's own children. These findings are in line with Proposition 3 and imply that unrelated individuals are limited substitutes for time transfers from children.

Table 4. Estimates of the Impact of Genetic Proximity Between Donors and Recipients on Private Transfers Using Panel Data With Unobserved Individual Effects

	(1)	(1a)	(1b)	(1c)	(2)
	Time Transfer	**Household Help**	**Personal Care**	**Paperwork Help**	**Money Transfer**
	Extensive Margin				
Genetic proximity	(ref.: own child)				
Parents	-5.52e-06	-0.0347**	0.145***	0.00710	-0.0285
	(6.43e-05)	(0.00801)	(0.0113)	(0.00300)	(0.0222)
Siblings	-1.27e-05	-0.0156	0.00893	-0.120**	-0.0232
	(3.58e-05)	(0.0145)	(0.00329)	(0.0180)	(0.0174)
Parents-in-law	-0.00308	-0.00588	0.0907**	-0.0203	-0.0230
	(0.00318)	(0.0389)	(0.0161)	(0.0150)	(0.0147)
Children-in-law	-4.01e-06	0.0157	0.00383	-0.122**	-0.0111
	(1.24e-05)	(0.0128)	(0.0118)	(0.0135)	(0.00866)
Grandchildren	2.30e-05	0.0257	0.00287	-0.158***	0.00302
	(5.54e-05)	(0.0117)	(0.00825)	(0.00541)	(0.00625)
Other relatives	-0.000602	-0.00165	-0.00867	-0.144**	-0.0245
	(0.000662)	(0.00397)	(0.00523)	(0.0163)	(0.0194)
Friends	-0.000357	0.0153	-0.00703	-0.134**	-0.00235
	(0.000386)	(0.00763)	(0.00259)	(0.0228)	(0.00387)
Neighbours	-4.17e-05	0.0804**	-0.0242**	-0.232***	-0.000738
	(4.09e-05)	(0.0134)	(0.00278)	(0.0149)	(0.0178)
Other unrelated	-1.36e-05	-0.0854***	0.0571	-0.0976	-0.0178
	(3.39e-05)	(0.00350)	(0.0297)	(0.0366)	(0.0131)
Observations	44,789	23,953	23,953	23,953	13,232
R-squared	0.005	0.049	0.203	0.152	0.055
Number of waves	5	3	3	3	5
	Intensive Margin				
Genetic proximity	(ref.: own child)				
Parents	0.522	0.536	0.510	0.977**	0.540**
	(0.207)	(0.210)	(0.336)	(0.0707)	(0.0338)
Siblings	-0.361*	-0.410	-0.137	-0.699	0.124
	(0.0445)	(0.0931)	(0.0703)	(0.219)	(0.140)
Parents-in-law	0.615	0.461*	0.910*	1.473	0.523*
	(0.170)	(0.0448)	(0.106)	(0.993)	(0.0525)
Children-in-law	-0.425***	-0.435**	-0.144	-0.555**	0.437
	(0.00506)	(0.0171)	(0.0640)	(0.0334)	(0.178)
Grandchildren	-0.279	-0.424	-0.208	-0.300	-0.318
	(0.112)	(0.131)	(0.0406)	(0.305)	(0.0681)
Other relatives	-0.510	-0.593	-0.533	-0.683**	0.448**
	(0.104)	(0.149)	(0.668)	(0.0212)	(0.0128)

Continued **Table 4.** Estimates of the Impact of Genetic Proximity Between Donors and Recipients on Private Transfers Using Panel Data With Unobserved Individual Effects

	(1)	(1a)	(1b)	(1c)	(2)
	Time Transfer	**Household Help**	**Personal Care**	**Paperwork Help**	**Money Transfer**
	Intensive Margin				
Genetic proximity	(ref.: own child)				
Friends	-0.616*	-0.597	-0.610	-0.909	-0.214
	(0.0901)	(0.119)	(0.332)	(0.151)	(0.340)
Neighbours	-0.848**	-1.019***	-1.315	-0.560**	-0.0553
	(0.0148)	(0.0141)	(0.514)	(0.0347)	(0.323)
Other unrelated	-0.311*	-0.0481	0.158	-0.963	0.118
	(0.0296)	(0.0454)	(0.330)	(0.229)	(0.322)
Observations	10,454	8,684	1,143	3,118	2,336
R-squared	0.245	0.284	0.248	0.373	0.333
Number of waves	2	2	2	2	2
IV	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; controls: respondent's age, gender, number of ADLs and IADLs, ability to make ends meet, living arrangement, extended family size, country of residence.

Source. Authors' own estimations based on SHARE waves 1–2, release 6.1.1.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

No clear pattern of the extent of genetic relatedness and the value of private transfers arises from our analysis. We find, however, that parents and parents-in-law as well as other relatives give the largest money transfers. It seems that the financial support flows indeed within extended family, and the explanation to it lies in the fact that usually older generations support younger ones (Albertini, Kohli, & Vogel, 2007), which might result from wealth effects, which we cannot control in our study.

4.2. Additional Results

The analysis in this section has a more descriptive nature than the longitudinal one in the previous section, as we do not observe changes over time enabling a causal analysis. The advantage of the analysis below of differences between different dyads results from controlling simultaneously for all relevant factors, which was impossible in the panel analysis. Furthermore, we employ two alternative research settings. In the first one, we observe all dyads of the respondent and the respondent's confidants who are treated as a potential interhousehold transfer donors. In the second one, we observe all dyads of the respondent and the respondent's children treated as a potential donor. Additionally, we make a distinction between related and unrelated confidants.

The effects of geographical distance on the extensive margin for interhousehold time and money transfers are consistent across all estimations, showing no impact on money transfers and documenting strong evidence of negative and monotonous association between time transfers and distance. Even the smallest differences in geographical proximity matter for the occurrence of interhousehold time transfers from confidants. In particular, we observe significant effects on time transfers for all distance categories in the case of related confidants, and for distances exceeding 1 km in the case of unrelated confidants. Unfortunately, we are unable to examine the volume of time transfers from confidants according to geographical proximity as these data are unavailable in wave 6. For related confidants, the positive relation between interhousehold time transfers and distance is monotonous up to 100 to 500 km, and seems to be

Table 5. Effects on Private Transfers (Extensive Margin) Received From Confidants and From Children Using Cross-sectional Data

	Confidants		Children	
	Time Transfer	**Money Transfer**	**Time Transfer**	**Money Transfer**
Donor is a confidant	-	-	0.0536***	-0.00686
	-	-	(0.0199)	(0.00967)
Donor is a stepchild	-	-	-0.00378	-0.0102**
	-	-	(0.00644)	(0.00456)
Geographical proximity (ref: same building)				
< 1 km	-0.0187**	-0.00224	0.000946	0.000509
	(0.00908)	(0.00244)	(0.0214)	(0.0127)
1 to 5 km	-0.0326***	-0.00161	-0.0219	0.00249
	(0.00916)	(0.00265)	(0.0200)	(0.0123)
5 to 25 km	-0.0430***	-0.00119	-0.0194	-0.00968
	(0.00908)	(0.00270)	(0.0200)	(0.0119)
25 to 100 km	-0.0577***	-0.00316	-0.0231	0.000538
	(0.00925)	(0.00280)	(0.0199)	(0.0124)
100 to 500 km	-0.0730***	0.00106	-0.0419**	0.0123
	(0.00928)	(0.00327)	(0.0196)	(0.0133)
> 500 km	-0.0684***	-0.000851	-0.0457**	0.0105
	(0.00955)	(0.00382)	(0.0194)	(0.0132)
Emotional proximity (ref: not very close)				
Somewhat close	0.00183	-0.00124	-	-
	(0.0105)	(0.00262)	-	-
Very close	0.0173*	0.00101	-	-
	(0.0104)	(0.00266)	-	-
Extremely close	0.0386***	0.00861***	-	-
	(0.0109)	(0.00305)	-	-
Contact (ref.: daily)				
Several times a week	-	-	-0.00932	-0.0110*
	-	-	(0.00883)	(0.00603)
Once a week	-	-	-0.0207**	-0.00850
	-	-	(0.00898)	(0.00681)
Every two weeks	-	-	-0.0426***	0.000263
	-	-	(0.00916)	(0.00913)
Once a month	-	-	-0.0469***	-0.0158*
	-	-	(0.00932)	(0.00811)
Less than once a month	-	-	-0.0523***	-0.0253***
	-	-	(0.00882)	(0.00736)
Never	-	-	-0.0666***	-0.0329***

Continued **Table 5.** Effects on Private Transfers (Extensive Margin) Received From Confidants and From Children Using Cross-sectional Data

	Confidants		Children	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer
	-	-	(0.00895)	(0.00657)
Observations	28,156	28,156	6,227	6,227
R-squared	0.064	0.009	0.058	0.030
IV	yes	yes	yes	yes
Donor's characteristics	yes	yes	yes	yes
Controls	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; donor's characteristics: age and gender, and genetic relatedness in the case of confidants (and education, marital status, and employment state in the case of children); controls: respondent's age, gender, income decile group, living arrangement, extended family size, number of ADLs and IADLs, and country of residence.
Source. Authors' own estimations based on SHARE wave 6, release 6.1.1.
$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

diminishing above 500 km, but due to a relatively large standard error of the estimate, it is not necessarily the case. For the unrelated, the said relation is strictly monotonous. These findings support Proposition 2.

As far as the occurrence of money transfers is concerned, Proposition 1 seems to be rejected, suggesting that the assumption on the positive relation between geographical distance and wage rate is an unnecessary complication to the formal model in the context of the analysed set of countries. However, the empirical analysis capturing a more diverse set of developing countries representative of the Global South and North is necessary to test Proposition 1. Moreover, the small number of actual money transfers (2,547 and 432 cases from children and confidants, respectively) fails to capture heterogeneity sufficient to reveal relations relevant to our study (money transfer took place in only 2.86% of parent-child and 0.62% of respondent-confidant dyads).

Results for genetic proximity for children show that stepchildren are less likely to provide money transfers than own ones, in line with Proposition 3, but no difference between them was found for time transfers. Looking at time transfers only, children-in-law seem to be more likely to help than their own children and other family members. This result can be driven by the well-documented gender inequality in the provision of care (e.g., Coward & Dwyer, 1990; Grigoryeva, 2017), which shows that daughters-in-law are likely to provide time transfers also in Europe (Datta, Poortinga, & Macoen, 2003). Thus, it is possible that daughters-in-law provide more care to their husbands' parents than do the husbands (compare with Woolley & Greif, 2019). Again, these findings do not provide strong support that genetic proximity enhances internalization of social norms to give private transfers. Note that this result is obtained by controlling for a child's education (which affects the provision of time transfers by children; cf. Table A5), employment status (which affects the provision of money transfers by children), and marital status (irrelevant for the provision of private transfers by children). In sum, results of testing Proposition 3 using genetic proximity as a measure of the internalization strength are inconclusive.

Emotional proximity captured by being a parent's confidant produces positive effects on the occurrence of interhousehold time transfers from children. Frequency of contacts between parents and children shows that emotional proximity is positively associated with informal support. The size of the coefficients implies that its role in time transfer occurrence is significantly more pronounced than in the case of money transfers, as stated in Proposition 4. Extreme emotional proximity between respondents and confidants enhances both time and money transfers, but only for unrelated confidants. Similar to parent-child dyads, the coefficients for interhousehold time transfers in respondent-confidant dyads are substantially larger than the coefficients for money transfers, which is in line with Proposition 4. Being

Table 6. Effects on Private Transfers (Extensive Margin) Received From Related and Unrelated Confidants Using Cross-sectional Data

	Related Confidants		Unrelated Confidants	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer
Genetic proximity				
	(ref: own child)		(ref: neighbour)	
Child-in-law	0.0429***	0.00418		
	(0.0140)	(0.00583)		
Cousin	0.00776	0.00605		
	(0.0112)	(0.00555)		
Other relative	-0.00605	0.00351		
	(0.0117)	(0.00575)		
Other unrelated			-0.0474***	0.000698
			(0.00764)	(0.00120)
Geographical proximity (ref.: same building)				
< 1km	-0.0395**	-0.00423	-0.00726	-0.000437
	(0.0169)	(0.00627)	(0.0104)	(0.00141)
1 to 5 km	-0.0490***	-0.00672	-0.0230**	0.00160
	(0.0165)	(0.00598)	(0.0105)	(0.00188)
5 to 25 km	-0.0640***	-0.00552	-0.0321***	0.00181
	(0.0162)	(0.00600)	(0.0105)	(0.00201)
25 to 100 km	-0.0873***	-0.00954	-0.0406***	0.00164
	(0.0163)	(0.00609)	(0.0108)	(0.00226)
100 to 500 km	-0.106***	-0.00350	-0.0495***	0.00369
	(0.0161)	(0.00649)	(0.0111)	(0.00321)
> 500 km	-0.0938***	-0.00373	-0.0538***	-0.000459
Emotional proximity (ref: not very close)	(0.0166)	(0.00714)	(0.0108)	(0.00329)
Somewhat close	-0.0272	-0.00805	0.00646	0.000134
	(0.0262)	(0.0126)	(0.0112)	(0.000562)
Very close	-0.0115	-0.00552	0.0198*	0.00242***
	(0.0261)	(0.0126)	(0.0112)	(0.000725)
Extremely close	0.00581	0.00365	0.0446***	0.00792***
	(0.0265)	(0.0127)	(0.0121)	(0.00203)
Observations	11,097	11,097	17,057	17,057
R-squared	0.012	0.088	0.009	0.051
IV	yes	yes	yes	yes
Donor's characteristics	yes	yes	yes	yes
Controls	yes	yes	yes	yes

Note. Robust standard errors clustered by household in parentheses. IV: exchange rate; donor's characteristics: age and gender; controls: respondent's age, gender, income decile group, living arrangement, extended family size, number of ADLs and IADLs, and country of residence.

Source. Authors' own estimations based on SHARE wave 6, release 6.1.1.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

very close increases the probability of time transfers being received from unrelated confidants by 2.0 percentage points and being extremely close does so by 4.5 percentage points, and for money transfers the corresponding values are 0.2 and 0.8 percentage points, respectively. These are large figures, taking into account that the average probability of receiving from confidants is 6 per cent for interhousehold time transfers and 1 per cent for money transfers. In other words, extreme emotional proximity increases the chances of receiving interhousehold time transfers by 77 per cent and money transfers by 67 per cent from a confidant for an average individual in the analysed sample and enhances the occurrence of time transfers much more (almost six times) than money transfers, while the positive effects of "very close" emotional proximity show an even greater difference (about eight times) between the transfer types.

The above result seems to be in line with the intergenerational demonstration effect (Cox & Stark, 2005), which proposes that individuals take care of their older parents and contact them more frequently in person in order to demonstrate the desired behaviour to their own children, in hopes of instilling a moral obligation to provide similar support when needed by those individuals in older age. However, this explanation is inapplicable to support from unrelated individuals (or childless family members), who have no interest in professing such behaviour. Positive externalities stemming from spending time with emotionally close ones are in line with the identity as captured in our theoretical model. An alternative explanation to the identity might be stronger Becker-style altruism for those connected by stronger ties, but it fails to explain why the impact of closeness would differ between time and money transfers. There is no theoretical reason for a difference in the strength of altruism between time and money transfers in the Becker model (1981). In sum, the demonstration effect is indeed in line with the stronger effects on time transfers for those closer to parents, but it does not hold for unrelated individuals or childless individuals taking care of their parents.

We found negative effects of geographical proximity to be weaker and positive effects of emotional proximity to be stronger for unrelated confidants than for related ones. This is interesting because it indicates that, qualitatively, time transfers are similar for extremely emotionally close confidants and for relatives. Note that we cannot confirm that for the intensive margin, and results from the previous section suggest that the size of transfers is larger if it concerns relatives.

5. Heterogeneity Analysis

Two dimensions of the research samples are likely to bring substantial diversity in the estimated effects in the above analysis. These are, first, the heterogeneity across ages, and second, across cultures and politico-economic regimes in the examined group of countries. Therefore, we provide the estimates for the following age groups: 50–59, 60–69, 70–79, 80 and more, within which, respectively, 10, 13, 21, and 35 per cent of individuals received any type of support. A number of possible country groupings were considered to finally decide on the following divisions, based on the descriptive statistics on private transfers, welfare state typology, and political-economic regimes: West (Austria, Belgium, Germany, France, Luxembourg, The Netherlands, Switzerland); North (Denmark, Sweden); South (Greece, Israel, Italy, Spain, Portugal); Center (Croatia, Czech Republic, Estonia, Hungary, Slovenia, Poland).

5.1. Age Groups

As shown in Table A2, the positive effect of being a confidant on the occurrence of time transfers is most pronounced in the recipient age group 70–79. Interestingly, we document negative effects on the occurrence of financial transfers from stepchildren weakening over cohorts, as they decrease from 4 per cent in the oldest group (80+) to 2 per cent among the youngest group (50–59) of recipients. We find hardly any variation across age groups in the effects of geographical and little of emotional proximity between parents and children. Additional analysis (available upon request) shows that the negative effects of large geographical distances on the amount of private time transfers are driven mainly by the subsample of individuals in older age groups, whereas the largest money transfers from parents (also parents-in-law) and the smallest from children are observed in the youngest age group (50–59) of transfer recipients. These results, however, should be treated with caution, as they are likely to reflect the larger power of the estimations in these groups and not necessarily heterogeneity across groups.

5.2. Country Groups

Although, in general, kinship seems to enhance the size of private transfers to a greater extent in the South–Centre than in the North–West of Europe, the negative coefficients on the amount of time and money transfers documented for children-in-law are almost the same in both geographical regions (namely, -0.4; cf. Table A3), keeping cultural and politico-economic background constant in the panel estimations. Juxtaposing this result with 2 (3) per cent less likely money (time) transfers from stepchildren in the Centre than in the West and North of Europe (see Table A4) obtained in the cross-sectional analysis, suggests that the institutional environment in postcommunist countries contributes to the reinforcement of the engagement in private transfer provision to parents, mainly from their genetically related children. Moreover, we document that the effects of geographical proximity to children are mostly driven by the countries belonging to the West and North of Europe, especially in the case of smaller distances up to 100 km that seem to have less impact on the occurrence of time transfers in the South and Centre of Europe. The South seems to be distinct from the rest of Europe with respect to the role of emotional proximity, as we observe no effect on the occurrence of private transfers (both of time and money) for the South, which can be interpreted as the indication of the sense of obligation to improve parents' well-being underlying the support. A similar interpretation applies to money transfers to parents in the North of Europe (but not to time transfers).

6. Closing Remarks

The theoretical model developed in this paper yields an ambiguous relation between geographical proximity and optimal interhousehold time and money transfers, depending on the absolute wage, its marginal increase in travel time, and marginal travel costs. Depending on the actual context, opposite empirical results might be credited to the same theoretical explanation. Our empirical analysis supported three out of four delineated propositions. We found that emotionally close individuals do give, in total, larger interhousehold time and money transfers than emotionally distant individuals and that unrelated emotionally close individuals give time rather than money transfers. Geographically distant individuals, due to higher wages, provide smaller total time transfers than geographically close ones, and this evidence is based on identification resorting to dynamic changes in geographical distance over time, which is reassuring with respect to its validity. Our analysis did not show any clear pattern of genetic relatedness and the external or internal margin of private transfers. However, stepchildren were less likely than genetic children to provide financial support. Interestingly, the negative effects on the occurrence of financial transfers from stepchildren seem to weaken with younger cohorts, and the engagement in private transfer provision to parents, mainly from their genetically related children, prevails most in postcommunist countries with institutional environment lacking sufficient public support to dependent adults. In sum, emotional and geographical proximities are relevant to the understanding of private transfers as viewed from the perspective of our identity economic model. In the European Union, the correlation between geographical proximity and wages does not lead to larger money transfers from distant donors, which is an established phenomenon in the literature examining global migrations and remittances (e.g., Brown, 1994; Rapoport & Docquier 2006).

We now go on to address the main shortcomings of our study. First, we omit time transfers that do not need face-to-face contact because they are insensitive to proximity (and hence, mobility). Technology allows transfers of time, such as emotional support, with no hassle or financial cost, but we are only interested in care and help given in person. Second, intrahousehold transfers of time and money reach beyond the scope of our analysis because they are qualitatively different from interhousehold transfers. Although intrahousehold transfers of personal care are the most frequent and essential to meeting the elderly's needs, one can argue that intrahousehold transfers of money and practical help are either unobservable or can be retrieved from household-level data using strong assumptions or more knowledge on intrahousehold bargaining powers. Third, the assumption that all transfer donors act independently helps to focus the analysis on the role of the three proximities at the cost of possible oversimplification of the economic realm. Further research exploring the identity in private transfers might provide some nuance to the model with asymmetry in emotional closeness between individuals, which might contribute to a better understanding of the intra- and intergenerational flows of time and money transfers. Finally, as more

refined data on private transfers become available, an analysis controlling simultaneously for changes in geographical and emotional proximity with more sophisticated instruments might shed new light on the examined phenomenon.

Finally, we briefly comment on not addressing directly the gender of transfer givers. The reason for this decision is that the subject of this paper is the role of proximities only and not the socio-demographic characteristics. However, our results on emotional closeness are indirectly related to gender, as some studies show that daughters pay more attention to the quality of their relationships with their parents (Mui, 1995) and are not only emotionally closer to them than sons, but are also preferred over them (Suitor & Pillemer, 2006). That might be the explanation for the lack of statistical significance of the child's gender in our cross-sectional estimations controlling for emotional proximity and frequency of contact. In other words, it is not the sex of the child per se, but the proximity to parents that affects the identities of daughters and sons, leading in turn to different behavioural patterns (Horowitz, 1985). Furthermore, if co-residing partners take care of each other, the role of children's proximity is more relevant for widowed parents. Closer bonds between daughters and mothers than between mothers and sons, combined with the prevalence of widowed women over widowed men, might contribute to understanding why interhousehold time transfers are gendered and migrating daughters choose to live closer to parents. Having said that, we do not question the unequal emphasis that socialization puts on the internalization of care-giving norms by men and by women both in its primary and secondary stage.

According to Akerlof and Kranton (2010), identities of the same individual may and do change. Although it reaches beyond the scope of the present study, an understanding of the mechanisms through which internalized social norms become external and vice versa is relevant. This question is especially interesting with respect to unrelated individuals stepping into the roles previously reserved for relatives. That is because families in general, and wives' and daughters' identities in particular, seem to be more often in conflict with the traditional expectations towards their social roles because of the growing strength of female identities and agency outside of home.

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Appendix

Table A1. Country Structure of the Longitudinal and Cross-sectional Research Samples

	Longitudinal	Cross-sectional	Cross-sectional
	Respondent	Parent-Child	Respondent-Confidant
	Percentage		
Austria	5.90	4.89	4.85
Belgium	8.88	8.14	8.41
Croatia	0.98	3.71	3.54
Czech Republic	7.53	7.50	7.49
Denmark	5.56	5.52	5.51
Estonia	7.16	8.32	8.51
France	7.70	5.72	5.83
Germany	6.62	6.42	6.27
Greece	4.18	7.18	7.00
Hungary	1.20	0.00	0.00
Israel	3.87	3.15	3.18
Italy	7.31	7.56	7.60
Luxembourg	1.20	2.23	2.20
Poland	2.42	2.77	2.78
Portugal	1.46	2.55	2.54
Slovenia	3.98	6.42	5.58
Spain	7.96	8.13	7.96
Sweden	6.46	5.91	5.91
Switzerland	4.41	3.88	3.83

Source. Authors' own tabulations based on SHARE waves 1–2, 4–6, release 6.1.1.

Table A2. Effects on Private Transfers (Extensive Margin) From Children Using Cross-sectional Data, by Recipients' Age Groups

	50–59		60–69		70–79		80+	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer	Time Transfer	Money transfer	Time Transfer	Money Transfer
Donor is a confidant	0.0221	-0.00435	0.0454*	-0.00542	0.138***	-0.0389***	-0.000411	-0.00410
	(0.0436)	(0.0294)	(0.0266)	(0.0163)	(0.0527)	(0.0105)	(0.0464)	(0.0285)
Donor is a stepchild	-0.00190	0.0203*	0.00105	-0.0131**	-0.0137	-0.0144	-0.0433*	-0.0432**
	(0.0174)	(0.0117)	(0.00879)	(0.00644)	(0.0143)	(0.00932)	(0.0238)	(0.0170)
Geographical proximity (ref: same building)								
< 1 km	-0.000955	0.00888	0.0104	0.00333	0.00999	0.00247	-0.00920	0.0116

Continued **Table A2.** Effects on Private Transfers (Extensive Margin) From Children Using Cross-sectional Data, by Recipients' Age Groups

	50–59		60–69		70–79		80+	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer	Time Transfer	Money transfer	Time Transfer	Money Transfer
	(0.0515)	(0.00883)	(0.0304)	(0.0228)	(0.0414)	(0.0236)	(0.0666)	(0.0154)
1 to 5 km	0.00670	0.0382**	-0.0277	-0.00794	-0.0123	8.69e-05	-0.0104	0.0163
	(0.0498)	(0.0157)	(0.0268)	(0.0210)	(0.0387)	(0.0229)	(0.0614)	(0.0226)
5 to 25 km	0.0121	0.0243*	-0.0306	-0.0256	-0.0165	-0.00380	0.0326	0.00396
	(0.0498)	(0.0134)	(0.0269)	(0.0202)	(0.0387)	(0.0233)	(0.0641)	(0.0151)
25 to 100 km	0.00476	0.0189*	-0.0178	-0.00488	-0.0286	-6.07e-05	0.000879	0.0219
	(0.0486)	(0.0105)	(0.0274)	(0.0216)	(0.0375)	(0.0237)	(0.0656)	(0.0178)
100 to 500 km	0.000178	0.0429***	-0.0488*	0.00721	-0.0419	0.0142	-0.0373	0.0191
	(0.0491)	(0.0165)	(0.0269)	(0.0233)	(0.0376)	(0.0252)	(0.0649)	(0.0225)
> 500 km	-0.0139	0.0414**	-0.0513*	-0.00440	-0.0363	0.0201	-0.0366	0.0354
	(0.0474)	(0.0191)	(0.0266)	(0.0217)	(0.0370)	(0.0252)	(0.0624)	(0.0244)
Contact (ref.: daily)								
Several times a week	-0.0175	0.0132	-0.00526	-0.0182*	-0.0170	-0.00775	-0.00790	-0.0169
	(0.0197)	(0.0121)	(0.0129)	(0.00999)	(0.0177)	(0.0126)	(0.0297)	(0.0142)
Once a week	-0.0252	-0.00401	-0.00120	-0.00423	-0.0320*	-0.0106	-0.0514*	-0.0102
	(0.0217)	(0.0128)	(0.0140)	(0.0116)	(0.0173)	(0.0131)	(0.0298)	(0.0181)
Every two weeks	-0.0491**	0.00816	-0.0243*	-0.00913	-0.0451**	-0.0106	-0.0936***	0.0534
	(0.0205)	(0.0203)	(0.0139)	(0.0139)	(0.0192)	(0.0170)	(0.0317)	(0.0329)
Once a month	-0.0463**	-0.0122	-0.0346***	-0.0106	-0.0428**	-0.0182	-0.114***	-0.0185
	(0.0233)	(0.0143)	(0.0129)	(0.0143)	(0.0206)	(0.0174)	(0.0311)	(0.0169)
Less than once a month	-0.0663***	-0.0324**	-0.0285**	-0.0373***	-0.0613***	-0.0222	-0.0941***	0.00629
	(0.0192)	(0.0135)	(0.0135)	(0.0109)	(0.0189)	(0.0160)	(0.0294)	(0.0283)
Never	-0.0784***	-0.0358**	-0.0427***	-0.0414***	-0.0409**	-0.0320**	-0.120***	-0.0218
	(0.0232)	(0.0150)	(0.0132)	(0.0125)	(0.0188)	(0.0137)	(0.0337)	(0.0189)
Observations	1,122	1,122	2,432	2,432	1,882	1,882	791	791
R-squared	0.076	0.073	0.070	0.058	0.121	0.058	0.153	0.125
IV	yes	yes	yes	yes	yes	yes	yes	yes
Donor's characteristics	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; donor's characteristics: age and gender and genetic relatedness; controls: respondent's age, gender, income decile group, living arrangement, extended family size, number of ADLs and IADLs, and country of residence.

Source. Authors' own estimations based on SHARE wave 6, release 6.1.1.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A3. Estimates of the Impact of Genetic Proximity on Private Transfers Using Panel Data With Unobserved Individual Effects by Recipient's Country Groups

	West and North		South and Centre	
	Time Transfer	**Money Transfer**	**Time Transfer**	**Money Transfer**
	Extensive Margin			
Genetic proximity	(ref.: own child)			
Parents	-	-0.0305	9.33e-05	-0.0256
	-	(0.0228)	(9.86e-05)	(0.0240)
Siblings	-	-0.0149	4.48e-05	-0.0279
	-	(0.0143)	(8.10e-05)	(0.0194)
Parents-in-law	-	-0.0223	-0.0102	-0.0242
	-	(0.0144)	(0.0100)	(0.0176)
Children-in-law	-	-0.00995	3.82e-05	-0.0136
	-	(0.0116)	(6.93e-05)	(0.0133)
Grandchildren	-	0.0365	9.67e-05	-0.0257
	-	(0.0289)	(0.000170)	(0.0144)
Other relatives	-	-0.0210	-0.00135	-0.0234
	-	(0.0241)	(0.00147)	(0.0373)
Friends	-	0.00415	-0.00105	-0.0108
	-	(0.0176)	(0.00118)	(0.0125)
Neighbours	-	0.0617	-7.96e-07	-0.0602
	-	(0.0516)	(4.03e-05)	(0.0403)
Other unrelated	-	0.00324	9.54e-05	-0.0422
	-	(0.00216)	(9.95e-05)	(0.0325)
Observations	23,571	6,118	20,845	7,015
Number of waves	5	5	5	5
R-squared	-	0.038	0.008	0.075
	Intensive Margin			
Genetic proximity				
Parents	0.320	3,400	1.018**	-387.3
	(0.238)	(554.7)	(0.0652)	(141.3)
Siblings	-0.350	432.5	-0.247	-366.8
	(0.201)	(486.5)	(0.223)	(170.6)
Parents-in-law	0.458**	3,245	0.973	375.1
	(0.0141)	(1,577)	(0.689)	(581.6)
Children-in-law	-0.413**	11,130	-0.432*	-549.0
	(0.0101)	(7,390)	(0.0533)	(117.1)
Grandchildren	-0.300	-1,894*	-0.243**	-444.6
	(0.225)	(242.4)	(0.00674)	(120.2)
Other relatives	-0.454***	1,673	-0.589	3,923
	(3.20e-05)	(529.1)	(0.254)	(1,140)

Continued **Table A3.** Estimates of the Impact of Genetic Proximity on Private Transfers Using Panel Data With Unobserved Individual Effects by Recipient's Country Groups

	West and North		South and Centre	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer
	Intensive Margin			
Genetic proximity				
Friends	-0.511	-507.1*	-1.015*	-346.7
	(0.145)	(59.92)	(0.0912)	(206.1)
Neighbours	-0.805*	-526.3	-1.048	-1,609*
	(0.102)	(129.2)	(0.238)	(236.4)
Other unrelated	-0.403	-535.6	0.00544	69.63
	(0.0683)	(276.6)	(0.432)	(484.6)
Observations	6,775	1,215	3,526	1,094
Number of waves	2	0.086	2	0.103
R-squared	0.202	2	0.199	2
IV	yes	yes	yes	yes
Controls	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; controls: respondent's age, gender, number of ADLs and IADLs, ability to make ends meet, living arrangement, extended family size, country of residence; West: Austria, Belgium, Germany, France, Luxembourg, The Netherlands, Switzerland; North: Denmark, Sweden; South: Greece, Israel, Italy, Spain, Portugal; centre: Croatia, Czech Republic, Estonia, Hungary, Slovenia, Poland.
Source. Authors' own estimations based on SHARE waves 1–2, release 6.1.1.
$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table A4. Effects on Private Transfers (Extensive Margin) From Children Using Cross-sectional Data, by Recipients' Country Group

	West		North		South		Centre	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer	Time Transfer	Money transfer	Time Transfer	Money Transfer
Donor is a confidant	0.0259	0.00484	0.00168	0.0368	0.0839	-0.00890	0.112**	-0.0405**
	(0.0289)	(0.0177)	(0.0276)	(0.0282)	(0.0531)	(0.00699)	(0.0458)	(0.0177)
Donor is a stepchild	0.0156	-0.000336	-0.00581	-0.00711	0.0122	-0.0211**	-0.0274*	-0.0241**
	(0.0104)	(0.00695)	(0.0105)	(0.00819)	(0.0227)	(0.00854)	(0.0159)	(0.0117)
Geographical proximity (ref: same building)								
< 1 km	-0.0863*	-0.0406	0.0989***	0.0371	-0.00404	0.00516	0.0595	0.0111
	(0.0471)	(0.0401)	(0.0372)	(0.0271)	(0.0342)	(0.00690)	(0.0372)	(0.0242)
1 to 5 km	-0.0609	-0.0341	0.0602***	0.0165	-0.0458	0.0163*	0.0236	0.00804
	(0.0465)	(0.0400)	(0.0196)	(0.0154)	(0.0327)	(0.00934)	(0.0335)	(0.0229)
5 to 25 km	-0.0800*	-0.0503	0.0982***	0.0157	-0.0411	0.00870	0.0259	-0.00662

Continued **Table A4.** Effects on Private Transfers (Extensive Margin) From Children Using Cross-sectional Data, by Recipients' Country Group

	West		North		South		Centre	
	Time Transfer	Money Transfer	Time Transfer	Money Transfer	Time Transfer	Money transfer	Time Transfer	Money Transfer
	(0.0458)	(0.0394)	(0.0244)	(0.0170)	(0.0332)	(0.00653)	(0.0328)	(0.0217)
25 to 100 km	-0.0890*	-0.0336	0.106***	0.0175	-0.0490	0.0146	0.0190	0.00129
	(0.0455)	(0.0400)	(0.0274)	(0.0162)	(0.0323)	(0.0106)	(0.0324)	(0.0231)
100 to 500 km	-0.103**	-0.0439	0.0688***	0.0191	-0.0551*	0.00742	0.000325	0.0465*
	(0.0458)	(0.0403)	(0.0223)	(0.0188)	(0.0322)	(0.0116)	(0.0322)	(0.0255)
> 500 km	-0.100**	-0.0387	0.0707***	0.0238	-0.0694**	0.0187*	-0.0146	0.0356
	(0.0459)	(0.0402)	(0.0227)	(0.0219)	(0.0305)	(0.0105)	(0.0323)	(0.0278)
Contact (ref.: daily)								
Several times a week	0.00451	-0.0209	-0.0155	-0.0155	-0.00301	-0.00526	-0.0233	-0.00599
	(0.0135)	(0.0133)	(0.0349)	(0.0161)	(0.0125)	(0.00767)	(0.0198)	(0.0152)
Once a week	0.0151	-0.00941	-0.0534	-0.00546	0.000370	-6.94e-05	-0.0505**	-0.0206
	(0.0136)	(0.0145)	(0.0332)	(0.0167)	(0.0146)	(0.00972)	(0.0200)	(0.0162)
Every two weeks	-0.0161	-0.0154	-0.0608*	0.0348	-0.0189	0.0268	-0.0862***	-0.0281
	(0.0135)	(0.0149)	(0.0335)	(0.0223)	(0.0178)	(0.0248)	(0.0208)	(0.0204)
Once a month	-0.0120	-0.00991	-0.0685**	-0.0122	0.000937	0.00500	-0.0961***	-0.0370*
	(0.0139)	(0.0157)	(0.0329)	(0.0167)	(0.0247)	(0.0197)	(0.0201)	(0.0189)
Less than once a month	-0.0252**	-0.0260*	-0.0577*	-0.00665	-0.0207	-0.00765	-0.0900***	-0.0501***
	(0.0120)	(0.0135)	(0.0336)	(0.0185)	(0.0152)	(0.00821)	(0.0203)	(0.0188)
Never	-0.0316***	-0.0280**	-0.0629*	-0.0115	-0.0149	0.00153	-0.121***	-0.0607***
	(0.0119)	(0.0133)	(0.0330)	(0.0170)	(0.0240)	(0.0124)	(0.0220)	(0.0159)
Observations	2,000	2,000	1,216	1,216	1,321	1,321	1,690	1,690
R-squared	0.058	0.032	0.087	0.050	0.125	0.073	0.111	0.064
IV	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; controls: respondent's age, gender, income decile group, living arrangement, extended family size, number of ADLs and IADLs, and country of residence; confidant's age and gender and genetic relatedness; West: Austria, Belgium, Germany, France, Luxembourg, The Netherlands, Switzerland; North: Denmark, Sweden; South: Greece, Israel, Italy, Spain, Portugal; Centre: Croatia, Czech Republic, Estonia, Hungary, Slovenia, Poland.

Source. Authors' own estimations based on SHARE wave 6, release 6.1.1.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A5. Effects on Private Transfers (Extensive Margin) From Children Using Cross-sectional Data

	Time Transfer		Money Transfer	
Child's education (ref. none)				
ISCED 1	0.0520***	(0.0171)	-0.0256	(0.0209)
ISCED 2	0.0585***	(0.0120)	-0.0206	(0.0206)
ISCED 3	0.0434***	(0.00995)	-0.0285	(0.0205)
ISCED 4	0.0503***	(0.0156)	-0.0397*	(0.0207)
ISCED 5	0.0411***	(0.0104)	-0.0115	(0.0209)
ISCED 6	0.0381**	(0.0175)	-0.0330	(0.0240)
Child is not single	-0.00476	(0.00778)	-0.00383	(0.00756)
Child works	-0.0103	(0.00735)	0.0127***	(0.00426)
Observations	6,227		6,227	
R-squared	0.058		0.030	
IV	yes	yes	yes	yes
Child is a confidant	yes	yes	yes	yes
Child is a stepchild	yes	yes	yes	yes
Geographical proximity	yes	yes	yes	yes
Emotional proximity	yes	yes	yes	yes
Contact	yes	yes	yes	yes
Controls	yes	yes	yes	yes

Note. Standard errors clustered by household in parentheses. IV: exchange rate; controls: respondent's age, gender, income decile group, living arrangement, extended family size, number of ADLs and IADLs, and country of residence.
Source. Authors' own estimations based on SHARE wave 6, release 6.1.1.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Claim 1: For sufficiently small marginal travel cost, the larger the travel time, the larger the total money transfers and consumption *ceteris paribus*.

Proof: Because $\alpha, w, w', c > 0, \theta \in (0,1), \tau > t$, $\frac{dM^*}{dt} = \frac{\alpha}{2+\alpha+\alpha\theta}(w'(\tau - t) - w - c') > 0$ and $\frac{dC^*}{dt} = \frac{1}{2+\alpha+\alpha\theta}(w'(\tau - t) - w - c') > 0$ if and only if $w'(\tau - t) - w - c' > 0$, where $c' = \frac{\partial c}{\partial t}$. If $w'(\tau - t) - w > c'$, then $\frac{dM^*}{dt} > 0, \frac{dC^*}{dt} > 0$ ■

Claim 2: For a sufficiently large wage, the larger the travel time, the smaller the total time transfers and the spare time *ceteris paribus*.

Proof: Because $\alpha, w, w', c > 0, \theta \in (0,1)$, $\frac{dT^*}{dt} = -\frac{\alpha\theta}{w^2(2+\alpha+\alpha\theta)}(w^2 + c'w - cw') < 0$ and $\frac{dC^*}{dt} = -\frac{\alpha\theta}{w^2(2+\alpha+\alpha\theta)}(w^2 + c'w - cw') < 0$ if and only if $w^2 + c'w - cw' > 0$, where $c' = \frac{\partial c}{\partial t}$. Because $w, w', c > 0$,

the condition $w^2 + c'w - cw' > 0$ holds only if $w > \frac{-c' + \sqrt{c'^2 + 4cw'}}{2} > 0$ and, therefore, if $w > \frac{-c' + \sqrt{c'^2 + 4cw'}}{2}$, then $\frac{dT^*}{dt} < 0, \frac{dS^*}{dt} < 0$ ■

Claim 3: The stronger the internalization of the social norm to give transfers, the larger the total money transfers and the smaller the consumption *ceteris paribus*.

Proof: Because $\alpha > 0, \theta \in (0,1), w(\tau - t) > c$, then $\frac{dM^*}{d\alpha} = \frac{2(w(\tau - t) - c)}{(2 + \alpha + \alpha\theta)^2} > 0$ and $\frac{dC^*}{d\alpha} = -\frac{(1+\theta)(w(\tau - t) - c)}{(2 + \alpha + \alpha\theta)^2} < 0$ ■

Claim 4: The stronger the internalization of the social norm to give transfers, the larger the total time transfers and the smaller the spare time *ceteris paribus*.

Proof: Because $\alpha, w > 0, \theta \in (0,1), w(\tau - t) > c$, then $\frac{dT^*}{d\alpha} = \frac{2\theta(w(\tau - t) - c)}{w(2 + \alpha + \alpha\theta)^2} > 0$ and $\frac{dS^*}{d\alpha} = -\frac{(1+\theta)(w(\tau - t) - c)}{(2 + \alpha + \alpha\theta)^2 w} < 0$ ■

Claim 5: The larger the externality of spending time together, the smaller the total money transfers and the smaller the consumption *ceteris paribus*.

Proof: Because $\alpha > 0, \theta \in (0,1), w(\tau - t) > c$, then $\frac{dM^*}{d\theta} = -\frac{\alpha^2(w(\tau - t) - c)}{(2 + \alpha + \alpha\theta)^2} < 0$ and $\frac{dC^*}{d\theta} = -\frac{\alpha(w(\tau - t) - c)}{(2 + \alpha + \alpha\theta)^2} < 0$ ■

Claim 6: The larger the externality of spending time together, the larger the total time transfers and the smaller the spare time *ceteris paribus*.

Proof: Because $\alpha, w > 0, \theta \in (0,1), w(\tau - t) > c$, then $\frac{dT^*}{d\theta} = \frac{\alpha(2+\alpha)(w(\tau - t) - c)}{w(2 + \alpha + \alpha\theta)^2} > 0$ and $\frac{dS^*}{d\theta} = -\frac{\alpha(w\tau - t(c + w))}{w(2 + \alpha + \alpha\theta)^2} < 0$ ■