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ABSTRACT

This paper deals with social acceptance of applying the equity principle for intra-familial time transfers. Based on a representative survey among German citizens, the author provides empirical evidence on acceptance of financial compensation for different time transfers. Some 80% of the subjects stated that intra-familial long-term care should be compensated. At the same time, only 38% of subjects stated that grandparental childcare should be compensated: The majority accepts equity principle for intra-familial long-term care but not for grandparental childcare.

Age has the strongest effect: subjects belonging to the old generation are more likely to accept the equity principle for informal long-term care as well as for grandparental childcare. Family valuation does not matter in any of the dimensions. It is puzzling that being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of time transfers.

JEL-Codes: D31, D63, D64

Key words: intergenerational transfers, long-term care, grandparental childcare, citizens' view, equity

1. INTRODUCTION

The industrialised world currently experiences substantial changes in structure of intergenerational transfers. Decreasing mortality and fertility rates result in declining number of children but increasing number of surviving generations (e.g., PFAW, 2001). At the same time, we observe an increasing number of people needing long-term care (hereafter: LTC). Moreover, dependent elderly people strongly prefer to be cared in their private homes (e.g., Eurobarometer, 2007). Substantial amount of care is provided by family members, fully or in part (e.g., Rubin and White-Means, 2009; Triantafillou et al., 2010). Informal care hereafter implies LTC provided by family members. Providing home care comes at considerable opportunity costs occurring due to income losses. This coincides with an increase in female labor market participation and a steadily increasing demand for more childcare facilities. Grandparental childcare remains the most popular alternative to formal childcare (e.g., Hank and Buber, 2009). With increasing life expectancy, we observe a growing number of physically and mentally fit grandparents, who are able to provide childcare and enable labour market participation of their children. (e.g., Bengtson and Lowenstein, 2003). In sum, we see that intra-familial time transfers (hereafter: ITT), i.e. practical help like babysitting, home care or help with paperwork, have not lost their relevance in modern society: they are still quantitatively meaningful in both directions. Finally, we currently observe an unprecedented accumulation of private wealth. Every year, portions of this wealth are passed on from one generation to the next. In Germany downward wealth transfers are estimated to amount to € 4.6 billion in the current decade (see Sieweck, 2011). This accumulation opens the possibility to pay for ITT.

Existing evidence suggests that there is some compensation for ITT (e.g., Norton et al., 2013; Groneck, 2015), but we have no evidence that it is generally accepted to compensate in society. This paper investigates what the population thinks about applying the equity principle to transfers within the family. Moreover, it explores the factors that capture why some citizens

accept the equity principle for ITT and others – not. I introduce two vignettes that ask whether citizens find it fair that ITT are compensated financially. An empirical data based on a representative GESIS Panel shows a discrepancy: almost 80 percent of the respondents state that intra-familial LTC should be compensated; only 38 percent state that grandparental childcare should be compensated. Some 53 percent of the respondents state that LTC should be compensated to a larger degree than grandparental childcare, while approx. 13 percent of the respondents state that grandparental childcare should be compensated to a larger degree than LTC. This discrepancy points at a substantial difference in the social acceptance of applying the equity principle depending on direction of ITT. Compensating for upward ITT i.e. from young to old generation, in form of informal LTC is more accepted socially than compensating for downward transfers, i.e. from old to young in form of grandparental childcare. This empirical finding is of great political relevance: given a budget pressure, governments should better support informal LTC than grandparental childcare.

In this study, I relate respondents' personal characteristics to their answers regarding the acceptance to compensate for LTC and grandparental childcare thereby answering three questions:

1) What characterises individuals who accept the equity principle for intra-familial LTC?

2) What characterises individuals who accept the equity principle for grandparental childcare?

3) What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other?

To answer these questions, I conduct an empirical study using the data from the representative German Panel GESIS cited above. The categories I account for include family valuation, norms and values, respondents' sex, age, socio-economic position and personality traits. I also control

for a possible self-serving bias. At this point, the results have to be taken as descriptive while no causal interpretation should be attached to the reported regression coefficients.

My main results can be summarized as follows: religiosity, respondents' age and socio-economic position, and self-serving bias variables, in particular, having children are found to shape subjects' social acceptance of applying the equity principle for informal LTC. Religiosity and respondents' age explain subjects' social acceptance of applying the equity principle for grandparental childcare. Values and norms, in particular religiosity and adherence to the norm of indirect reciprocity, respondents' age and socio-economic position, self-serving bias variables, in particular having children, and personality traits are found to explain different degrees of compensation for LTC and grandparental childcare. Overall, belonging to the old generation has the strongest effect.

While some of the results could be expected, I am puzzled to find some variables insignificant. I find that family valuation do not matter in any of the dimensions. Being a female by itself does not explain the differences, but has a moderating effect on other important variables. Including the interactions shows that women having children differ in their social acceptance from men having children: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation.

The remaining paper is organized as follows: Section 2 provides the literature review on intergenerational transfers within the family. In section 3, I introduce data and relevant variables. Section 4 presents the empirical results. Section 5 provides discussion, current limitations, concluding remarks as well as recommendations for future research.

2. INTERGENERATIONAL TRANSFERS WITHIN THE FAMILY: REVIEW OF LITERATURE

Before I turn to the theoretical literature, I sketch the empirical dimension of ITT and wealth transfers in Europe with focus on Germany. I begin with LTC that is the most politically

relevant transfer from younger to older generation. Modern society currently experiences extreme population ageing (e.g., Kluzer et al., 2010). This effect is primarily driven by the large increase in the individual probability of needing LTC when elderly and the increase in the average duration dependent elderly people require LTC services (e.g., Colombo et al., 2011; Huber et al., 2012). In 2007, 2.25 million German citizens were officially registered to require LTC (e.g., Husmann, 2010). One third of them received LTC in nursing homes whereas two third were cared at home. The latter mainly receive home care without noteworthy support from professional care workers (approx. 1 million in 2007). Family members provide substantial amount of home care without getting a regular payment for their services. Using the data from seven European countries, Triantafillou et al. (2010) found that children and children-in-law represent the largest group of home caregivers (60%) followed by spouses (22%). Women are typical caregivers as well as care receivers of LTC. According to Bettio and Verashchagina (2010), women form the majority of home caregivers with 61% of the total.

The number of employed informal caregivers increases steadily. In Germany, 38% of informal caregivers between 18 and 64 were employed in 1998; by 2010, the number has increased to 59% (e.g., Schmidt and Schneekloch, 2011). For employed informal caregivers, we observe a large reduction of working hours in their regular job (between 7 and 21%) and even complete quit from the labor market: between 3 and 18% of non-employed informal caregivers reported a caregiving as a reason of their decision to stop working (e.g., European Union, 2012). Colombo et al. (2011) found that 1% increase in hours of informal LTC leads to more than 1% decrease of working hours. Thus, LTC comes at considerable opportunity costs. More women participating in the labor market reduce their working hours or completely quit work comparing to men (e.g., Bettio and Verashchagina, 2010).

While we observe shrinking support base for the LTC and elderly people, the situation is the opposite while considering grandparental childcare. Fertility decline results in unprecedented

low numbers of children born in contemporary industrialized societies. At the same time, growing life expectancy enables longer shared lives of several generations (e.g., Bengtson and Lowenstein, 2003) and increase in female labor participation expands the demand for childcare. Empirical studies show that grandparents are the most common providers of informal childcare in Europe. However, the level of involvement in childcare strongly varies (e.g., Jappens & Van Bavel, 2012). Germany takes an average position with 32% of grandmothers and 25% of grandfathers regularly supervising their grandchildren. Coall and Hetwig (2010) observed a sample of German grandparents aged 55 to 69 years and found that they spent 12.8 hours each month caring for their grandchildren. Like in case of LTC, women are in heart of intergenerational relations.

Grandparents provide more childcare in the families where mothers work full-time as or have non-standard work schedules (e.g., Hank and Buber, 2009). The labor participation of working mothers is now higher than ever. This change is not accompanied by the simultaneous extension of formal childcare facilities, and grandparents fill this gap (e.g., Tobio et al., 2010). Posadas and Vidal-Fernandez (2012) found that that grandparental childcare increases maternal labor force participation by 15 percent on average. However, they show that this effect was mainly driven by families from socio-economically disadvantaged backgrounds. Grandparents provide more intensive help to their children who are single parents (e.g., Gray, 2005). Age matters, in fact in both directions. Young mothers are more likely to receive support from grandparents (e.g., Vandell et al., 2003) and younger grandparents are more likely to provide support to their children (e.g., Hank and Buber 2009).

Financial transfers provided by dependent elderly parents who have received informal LTC, can be understood as a payment and compensation for wages losses that occurs through caregiving (e.g., Tobio et al., 2010). Few studies found that there is a positive relationship between amount of LTC provided by children and share of bequests received (e.g., Groneck,

2015). At the same time, Norton et al. (2013) argued that siblings who provided informal LTC are more likely to receive inter vivos transfers from their parents. In their study on intergenerational transfer relations in 12 European countries, Leopold et al. (2014) found that children who expect future benefits in the form of parents' bequests and life insurance benefits are more likely to provide LTC.

Some studies show that grandparents receive monetary transfers in return for providing childcare. However, the numbers substantially differ: Presser (1989) found that some 30% of US grandmothers receive some payment. According to Wheelock and Jones (2002: 457), monetary transfers are "very much the exception rather than the rule". Folk (1994) used US data and showed that monetary transfers for childcare made by relatives are more often given for fulltime than part-time assistance and less often to grandparents than to other relatives providing childcare.

Boerner and Reinhardt (2003) found that the provision and the receipt of ITT are positively related: family members who received more family support at a given time point are also likely to provide more support to family members. Jappel and van Bavel (2012) investigated the reciprocity in ITT on the European level. They found that the regions where grandparents are strongly involved in childcare outside the household are, at the same time, the regions where they receive more support from their offspring.

In sum, the literature provides some evidence that equity principle within the family plays a role, but it is far from universally accepted. Little is known about individual citizens' view on applying the equity principle within the family. The equity principle demands that the ratio between outcome (wealth, wage) to individual input (education, experience and effort) should be the same for everybody (e.g., Buchanan, 1986; Konow, 2003;). We are used to apply equity principle in labor relations, i.e. work-salary correlation (e.g., Kahneman et al., 1986), but do people think that equity principle should be applied in intra-familial transfer relations?

There are different economic and sociological models of intra-familial transfers. Some of the models implicitly accept applying of the equity principle while others do not. The economic literature distinguishes between two classical models of intergenerational transfers: altruism (e.g., Barro, 1974; Coall and Hertwig, 2010) and exchange: direct or indirect (e.g., Bernheim et al., 1985). According to the exchange model, monetary support from parents to children is given in exchange for transfers the parents themselves received from their children (e.g., Cox and Rank, 1992; Lopez-Anuarbe, 2013). In line with this model, bequests can be interpreted as a "final payment" for the offspring' services in a reciprocal relationship between generations. Bernheim et al. (1985) and Cox (1987) argued that children provided ITT and attention to their parents in the hope of future inheritance. The exchange model of intergenerational transfers implies that the equity principle should be applied.

Some scholars argue that transfers may result from the "demonstration effect", i.e. transfers are made in expectation of similar behavior on behalf of the next generation. (e.g., Arrondel and Masson, 2001). According to this indirect reciprocity model, the offspring provide attention and LTC to the parents because they observed their parents to do the same when the latter were young (e.g., Stark, 1995). Taking the downward perspective, parents transfer wealth and time to their offspring because they faced the same support when they were young. This model also implies that the equity principle should be applied, though the recipient is not necessary the one who gives TT.

The altruistic model assumes that transfers from older to younger generation are motivated by the wish to support their offspring (e.g., Barro, 1974; Becker and Tomes, 1979). It assumes that lower-income recipients will be supplied with greater transfers: parents tend to equalize incomes of their children through transferring unequal amounts. The amount transferred and its division among the offspring (or other heirs) depend on offspring' incomes and not on whether

the latter provided LTC or other services in exchange (Cox and Rank, 1992). Hence, altruistic model does not imply the equity principle.

Sociological studies support the notion of widespread social norms of family responsibilities (e.g., Herlofson et al., 2011, Daatland, 2011). Filial responsibility is a norm that considers duties and obligations of adult children towards their elderly parents (e.g., Rossi Del Corso and Lanz, 2013). Parental responsibility refers to parents' responsibility for their children. Herlofson et al. (2011) analyzed family responsibility scales in nine European countries. They found that German citizens feel strongly obliged to take responsibility for caring for their parents when the latter are in need. However, they feel not obliged to adjust their working lives in order to provide intra-familial LTC. Answers to parental responsibility scale shows the similar pattern: parents feel themselves stronger obliged to help their adult children financially than to adjust their working lives in order to help their adult children. The models of social norms do not lead to any specific conclusion regarding the appliance of the equity principle.

Finally, intergenerational transfers can be also explained with evolutionary theory (e.g., Hamilton, 1964). According to the theory, downward parental and grandparental transfers should dominate upward transfers like LTC, because the downward transfers are centrally important for offspring' survival and reproduction. Therefore, the compensation may be more likely for upward transfers, like LTC, than for downward transfers, like grandparental childcare.

3. METHOD, DATA AND VARIABLES

In the current paper, I want to learn more about citizens' social acceptance of applying the equity principle in intra-familial transfer relations using survey method. The analysis is based on the representative GESIS Panel conducted by Leibniz Institute for social sciences in Mannheim, Germany (GESIS, 2016). The survey covers German citizens aged between 19 and 71. Together with a fellow researcher, I successfully submitted a block of 29 questions on

intergenerational relations, LTC, and inheritance taxation. I also made use of a rich pool of additional variables provided by GESIS Panel.

3.1.Dependent variables on two main vignettes

In this study, I use the subjects' answers to two vignettes as dependent variables. The first vignette describes the hypothetical situation in which one daughter takes care of the grandmother and is put up with income losses. The text reads as follows:

"Consider a couple with two grown-up daughters (Andrea and Beate). The couple has assets of 100 000€ and would like to settle the distribution of these assets between their daughters. The daughters are equal with respect to marital status, number of children, income and health. The relationship between the couple and their daughters is good. Until recently, Andrea helped her parents to provide long-term care to her grandmother. For this reason, she only worked part time for three years and waived parts of her wage whereas her parents continued to work as before. Her loss of wage amounts to 40 000 €."

The second vignette considers grandparental childcare and confronts respondents with the following hypothetical situation:

"Consider another couple with two grown up daughters (Gabi and Hannah). The couple has assets of 100 000 € and would like to settle the distribution of these assets between their daughters. The daughters are equal with respect to marital status, number of children, income and health. The relationship between the couple and their daughters is good. Both daughters support their parents to the same extent. Gabi lives with her family in the same city as her parents. Hannah lives with her family in a remote city. Both daughters resumed work soon after the birth of their children. For three years, the couple looked after Gabi's kids every day from 8:30 to 15:30. A child minder cared for the Hannah's kids. For this, Hannah paid 20 000€ in the last three years."

In both cases, subjects should answer a question: "How should the couple divide the 100 000 €
among their daughters? Which distribution do you personally regard as fair?"

By answering this question, people state whether they accept that the equity principle should
be applied for ITT.

The variables *fair_care_compensate_ordered* and *fair_child_compensate_ordered* take on the
value 1 for subjects who stated full compensation or more as fair, i.e. they fully accept the
equity principle for ITT. The variables take on the value 0.5 for subjects who stated some
compensation as fair, i.e. they partially accept the equity principle. Finally, they take on the
value 0 for subjects who stated no compensation as fair i.e. they oppose the idea to apply the
equity principle to intra-familial relations

[Table 1 about here]

Almost 79% of all respondents propose unequal distribution in favor of Andrea. Only 38%
percent of all respondents propose unequal sharing in favor of Hannah.

3.2.Covariates

a) family valuation

I expect subjects' social acceptance of applying the equity principle within the family to be
explained through their evaluation of family importance. Subjects who evaluate the family to
be very important for them might be less likely to accept the equity principle for ITT. I construct
the variable *family_most_important*. It takes on the value 1 for those who stated their family to
be important or very important to them, while at the same time stating that education and leisure
– the two most popular things to evaluate – are less important (0 else).

b) norms and values

Arrondel and Masson (2001) argue that the pattern of intergenerational transfers observed in
many societies emerges from a system of indirect reciprocity. Having observed intra-familial

transfers in your own family creates a social norm to provide the same support to the next generation. Here the equity principle is applied, though indirect: subjects adhering to indirect reciprocity norm compensate received transfers with transfers done to the next generation. I capture respondents' adherence to indirect reciprocity as a social norm by asking them to tick the one of proposed statements that more closely represents their own view: 1) People who receive start-up support from their parents are morally obliged to support their own children in the same way. 2) Every generation has to decide for itself whether to give their children start-up support. The variable *indirect_reciprocity* takes on the value 1 for subjects who tick the first statement (0 else). Subjects who adhere to the norm of indirect reciprocity might be more likely to state a compensation for ITT as fair.

Gans et al. (2009) found that religious people are more likely to provide informal LTC to their parents, which confirms the importance of religiosity. The variable *religious* takes on the value 1 for the subjects who evaluate religion as an important part of their lives (0 else). The question does not distinguish between religious confessions.

c) female

The typical informal caregiver as well as a typical provider of grandparental childcare is female (e.g., Haberkern and Szydlik 2008; European Union, 2012; Adam and Mühling; 2014), so females might be more likely to accept the equity principle within the family. At the same time, women are also more likely to be in need of LTC when they are old and need more support when having children. Summing up, women are at the heart of intergenerational exchange relations and their acceptance of applying the equity principle might deviate from the men's acceptance. I account for subjects' sex by introducing a *female*-dummy (1 for female respondents, 0 for males).

d) age

An approximate distinction between caregivers and care-receivers can be made by dividing subjects by their ages. Age increases the probability of requiring LTC. At the same time, the old generation is a typical provider of grandparental childcare. The young generation is typically not confronted with intra-familial LTC and childcare issues. The in-betweens are potential informal LTC providers. At the same time, they often need support in the form of childcare assistance. I classify individuals as "old" (born before 1955) and "in-betweens" (born between 1956 and 1975). The dummy variables *old_generation* and *middle_generation* capture these categories.

e) socio-economic position

I introduce variables that capture respondents' socio-economic position. The variable *high_education* takes on the value 1 for subjects whose school education qualifies them to enter higher education (0 else). I account for *household_income* of subjects by calculating natural log of the equivalent household income using the OECD-square-root-rule (OECD, 2008). It is calculated using classified income data. We assumed that household's income equals the median value of the range they reported the income to be in. The highest category [6.000 Euro or more] was excluded. I construct the variable *regularly_employed* that controls for employment status. It takes on the value 1 if the subjects are full-time or part-time employed (0 else).

f) self-serving bias

Despite the fact that I use vignettes in order to place respondents in the position of impartial spectators, self-serving bias may distort subjects' social acceptance of applying the equity principle for ITT. For instance, Schokkaert and Capeau (1991) used vignette approach and indicate frequent acceptance of an unequal distribution in favor of one person if subjects can

identify themselves with a person's current professional and income situation (see also Bimmore, 1994).

I expect personal experience and involvement in LTC to explain social acceptance of applying the equity principle for informal LTC. If subjects are personally involved in caregiving, they might find it fair that intra-familial LTC needs to be appreciated and granted with larger bequest. To account for this, I ask subjects whether they were involved in informal LTC provision. The variable *gave_care_personally* is 1 for all subjects who stated they were involved in providing LTC to a family member for a period of three months or longer as a main caregiver. The variable is 0 for subjects who never provided LTC or only assisted occasionally while the main caregiving was in the hands of others (including professional nursing services).

If subjects have alive parents, they are potential caregivers and might have thought about organization of LTC. At the same time, parents may provide childcare for their grandchildren, so differences in social acceptance of applying the equity principle within the family might be explained through the fact whether subjects have alive parents or not. The variable *parents_alive* takes on the value 1 for all subjects whose parents are living (0 else).

Having children may bias subjects' social acceptance of applying the equity principle for ITT as well. Subjects who tried to organize childcare might appreciate it more. Having children may also increase the probability to receive an informal care at home in old age. To account for this, I construct the dummy variable *children*. It takes on the value 1 for subjects with children (0 else).

Finally, subjects' position might be influenced through their evaluation of the quality of family ties. If subjects state family ties to be bad, they might be more likely to accept equity principle. The dummy variable *family_ties_bad* is 1 if subjects state these ties to be bad or very bad (0 else). I construct a variable that captures relative life satisfaction concerning subjects' family.

The variable *family_relations_worse* takes on the value 1 for subjects stating that their life satisfaction is declined during the last 12 months (0 else).

g) personality traits

I follow a recent trend in the related literature and account for the relationship between personality traits and social acceptance of applying the equity principle within the family. The GESIS Panel uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions *neuroticism, openness_to_experience, agreeableness, conscientiousness* and *extraversion* on a 5-point Likert-like scale. Two questions are devoted to each personality trait and subjects' score is combined to an ordinal measure capturing the degree to which a certain trait is present within the subject. Following the standard procedure in the political psychology literature, I use the ordinal measure as exogenous variable (e.g., Müller and Schwieren, 2012).

Heckman (2013) summarizes the existing studies on personality and argued that conscientiousness – the tendency to be competent, hardworking, organized and achievement striving – is the most predictive Big Five personality trait. Conscientiousness is found to be just as important predictor as intelligence measured by an IQ test. Openness to experience is associated with positive responses to progress. Subjects scoring high on this trait might be more open for formal childcare facilities and nursing homes and do not support the view that everything should be handled within the family. Gerber et al. (2011) argued that agreeableness is associated with social conservatism: subjects scoring high on agreeableness may resist policies that challenge social norm, for example, development of nursing homes and formal childcare facilities. These subjects, opposite to subjects scoring high on openness to experience, might find that LTC and childcare should be handled within the family and equity should not be applied for ITT.

4. EMPIRICAL ANALYSIS

The basic purpose of the empirical analysis is the exploration of the differences in social acceptance of applying the equity principle within the family based on the individual characteristics of the respondents, i.e. covariates described in the section 3.2. Note that this study is explorative rather than explanatory and the results are primarily descriptive (e.g., Fox and Bayat, 2007; Johnson and Christensen, 2010). Any causal interpretation should not be attached to the results.

Full descriptive statistics and correlation matrix are provided in the Appendix A. The degree of collinearity between variables is generally low and even the correlation between *parents_alive* and *old_generation* and correlation between *old_generation* and *regularly_employed* are not critical.

4.1. Compensation for intra-familial LTC

In this part, I want to answer my first research question: What characterises individuals who accept the equity principle for intra-familial LTC. The regression results are presented in table 2. The baseline model in column 1 employs all covariates described in Section 3 except personality traits**.** The model uses data on all participants of the GESIS Panel who answered all relevant questions. I end up with 2148 observations. Among variables capturing social norms and values, *religious* is significant with positive sign. Belonging to the old generation has a significantly positive effect. Respondents' socio-economic position, in particular being qualified to enter higher education and having higher household income is significant with positive sign. In the self-serving bias category, only *children* is significant with negative sign. Surprisingly, I found no effect of family valuation and sex.

[Table 2 about here]

In model 2, I add Big Five personality traits. None of the Big Five variables is significant while the performance of all other variables remains unchanged, only variable *religious* drops to be significant at 10% level only.

In models 3 and 4, I introduce the interaction of *parents_alive* and variables with *female* respectively. The rationale behind these models is the following: women are much more heavily involved in intra-familial exchange relations. They are more likely to require LTC when they are old and are more likely to organize and provide home care to family members than men are. I found no significant effect of sex, however, the female-dummy alone does not account for the possibility that, between males and females, the impact of other covariates can differ. In model 3, the interaction term of *parents_alive* and *female* is significant with negative sign while the performance of all other variables remains unchanged. In model 4, variable *children* remains significant and negative, however, the interaction term of *female* and *children* is significant and positive. Moreover, *female* turns to be significant and negative. Hence, women having children differ in their social acceptance of applying the equity principle for ITT from men having children and from women without children: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation. Apart from that, no other changes occur. Marginsplots of the interaction terms with *female* can be found in the Appendix B.

Having *children* leads to an approximately estimated decrease of the choice probability for full compensation by 8 percentage points. Belonging to the old generation (*old_generation*) leads to increase of the choice probability for full compensation by 9 percentage points, being qualified to enter higher education (*high_education*) - by 8 percentage points and being *religious* - by 5 percentage points. Jumping from one household income class to the next (average distance 500 Euro) increases the choice probability for full compensation by 4 percentage points. Detailed information on marginal effects is provided in the Appendix C.

In sum, values and norms (being religious), age (belonging to the old generation), socio-economic position (household income and high education variables) and self-serving bias variables (having children) are found to shape social acceptance of applying the equity principle for informal LTC. Surprisingly, the variable religious is significant with positive sign: religious people are more likely to support a compensation. Belonging to the old generation has a positive effect on accepting the full compensation for LTC. Subjects with higher education are more likely to support the compensation, possibly because of higher opportunity costs. Subjects having children are less likely to support a compensation. I found no effect of family valuation. Being female has no direct effect, but the interactions between female variable and self-serving bias variables are found to be significant. The most interesting result occurs, when I interact the variables *female* and having *children*. For males, having children is found to have negative effect on assessing the compensation for LTC as fair; for females, however, having children has a positive effect. Females without children are less likely support a compensation for informal LTC. Therefore, having offspring plays a crucial role in explaining social acceptance of applying the equity principle within the family and causes different reactions for males and females.

4.2.   Compensation for grandparental childcare

In this part, I want to answer my second research question: What characterises individuals who accept the equity principle for grandparental childcare. The regression results are presented in table 3. As in the section 4.1, the baseline model employs all covariates described in Section 3 except personality traits and variables relevant only for LTC vignette. The model uses data on all participants of the GESIS Panel who answered all relevmant questions. This leaves us with 2038 observations. As in the LTC vignette, being *religious* and belonging to the *old_generation* are found to be significant with positive sign. Moreover, belonging to the *middle_generation* has a significantly positive effect. Having children that might need childcare does not have a

significant effect. None of the Big Five variables is significant while the performance of all other variables remains unchanged. And again, I found no effect of family valuation and sex.

[Table 3 about here]

In models 3, 4 and 5, I introduce the interaction of *parents_alive, children* and *old_generation* variables with *female* respectively. The rationale behind these models is similar to the one in 4.1: women are much more heavily involved in grandparental childcare. They are more likely to organize and provide childcare than men are. The interaction terms do not generate significant coefficient estimators, nor do the corresponding plots show significant marginal effects. Detailed information is provided in the Appendix D.

Belonging to the *old_generation* leads to an approximately estimated decrease of the choice probability for equal distribution by 19 percentage points, belonging to the *middle_generation* – by 7 percentage points and being *religious* - by 5 percentage points. (see Appendix E).

In sum, values and norms (being religious) and age-related variables (belonging to the middle and old generation) are found to shape social acceptance of applying the equity principle for grandparental childcare. Like in the Section 4.1, belonging to the old generation has the strongest positive effect. It might be explained through changing perspective: Older subjects are potential grandparental caregivers. Therefore, they might be more likely to support the compensation for grandparental childcare. Surprisingly, subjects belonging to middle generation - adult children that might need support by childcare assistance - are also more likely to support a compensation. Again, religious subjects are more likely to accept the equity principle for ITT. Family valuation do not matter. Moreover, I found no effect of being female even if I include interaction terms.

4.3.   Relationship between compensation for intra-familial LTC and compensation for grandparental childcare

Until now, I analyzed social acceptance of applying the equity principle for intra-familial LTC and grandparental childcare separately. Here I come to the question (3): What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other, i.e. they "discriminate" against one TT, while others support that it is applied equally to both TT. I present the answers of the respondent using Cartesian coordinate system, i.e. I plot points along a grid where the X-axis represents *fair_care_compensate* and the Y-axis represents a *fair_child_compensate* (see Figure 1). The circles show the proportion of respondents who selected the distribution (X,Y).

[Figure 1 about here]

Full compensation for informal LTC and grandparental childcare is accepted by 749 subjects (see (1, 1)-circle). No compensation in both cases is accepted by 625 subjects (see (0, 0)-circle). The diagonal represents subjects who do not "discriminate" against one time transfer, i.e. they state the same degree of compensation for LTC and childcare. The green triangle includes subjects who consider applying the equity principle to be more acceptable for intra-familial LTC than for grandparental childcare For example, 641 subjects find that informal LTC should be fully compensated and childcare should not be compensated at all. The yellow triangle shows subjects who find that applying the equity principle is more acceptable for grandparental childcare than for intra-familial LTC.

I create a new dependent variable *ltc_child_compensation* that take on the value 1 for the subjects who find that applying the equity principle is more acceptable for intra-familial LTC than for grandparental childcare (green triangle). This variable takes on the value -1 for the subjects who find applying the equity principle is more acceptable for grandparental childcare than for intra-familial LTC (yellow triangle). It take on the value of 0 for whom the applying

of the equity principle for different ITT is equally acceptable (diagonal). The subjects who state no compensation in both cases (see (0, 0)-circle)) were excluded from the analysis.

The way the variable is constructed suggests that subjects' decision process is best modelled as a simultaneous choice between three alternatives. In this case, a multinomial approach is the adequate empirical model. I use the value 0, i.e. subjects for whom the applying of the equity principle is for intra-familial LTC and grandparental childcare is equally acceptable (diagonal), as a reference category.

[Table 4 about here]

The regression results are presented in table 4. Let us look at green triangle first. Religious subjects, subjects who adhere to the norm of indirect reciprocity, conscientious subjects and subjects belonging to middle and old generation are less likely to accept larger compensation for informal LTC than for a grandparental childcare. Subjects having children are more likely to accept an unequal compensation in favor of LTC. Let us look at yellow triangle now. Subjects whose school education qualifies them to enter higher education and subjects with higher household income are less likely to accept larger compensation for grandparental childcare than for a LTC. Subjects having children are more likely to accept accept an unequal compensation in favor of grandparental childcare.

In model 4, I introduce the interaction of *old_generation* with *female* that has a significant negative effect on probability to accept an unequal compensation in favor of grandparental childcare, while *female* itself turns to be significant and positive and belonging to old generation loses its significance. Hence, women belonging to the old generation differ in their social acceptance of applying the equity principle for different ITT from women belonging to the middle and young generation. The corresponding plots show significant marginal effect. Detailed information is provided in the Appendix F. Apart from that, no other changes occur.

The probability of accepting an unequal compensation in favor of informal LTC is on average about 16 percentage points lower for subjects belonging to *old_generation* and about 6 percentage points lower for subjects belonging to *middle_generation*. It is about 8 percentage points lower for subjects adhering to the norm of *indirect_reciprocity*, about 5 percentage points lower for *religious* subjects and about 2 percentage points lower for conscientious subjects (*conscientiousness*). Let us look at yellow triangle now. The probability of accepting an unequal compensation in favor of grandparental childcare declines by 7 percentage points if a subject' school education qualifies herself to enter higher education (*high_education)*. It is about 5 percent higher for subjects having *children*. Jumping from one household income class to the next (average distance 500 Euro) decreases the probability of accepting an unequal compensation in favor of grandparental childcare by 4 percentage points (see Appendix G)

In sum, I find that religiosity, respondents' age and socio-economic position, self-serving bias variables and personality traits explain differences in social acceptance of applying the equity principle for different TT. Belonging to the old generation has a strongest negative effect on accepting an unequal compensation in favor of informal LTC. This effect might be explained through changing perspective: subjects belonging to the old generation are potential care-receivers rather than caregivers. Being qualified to enter higher education has the strongest negative effect on accepting an unequal compensation in favor of grandparental childcare. Again, family valuation do not matter. Sex shows no direct effect until I include interaction terms. Females belonging to the old generation are less likely to accept larger compensation for grandparental childcare than for a LTC, while females belonging to the middle and young generation are more likely to accept it.

5. DISCUSSION AND CONCLUSIONS

Changes in the demographic structure and the family structure bring new challenges for families and the government. Population ageing occurring due to the combined effect of a decrease in

the fertility rate and an increase in the survival rate causes crucial changes in demand and supply of intergenerational transfers (e.g., Kluzer et al., 2010). Among the wide range of intergenerational transfers, organising LTC appears to be one of the most important issues in ageing society. I observe an increasing number of people needing LTC that coincides with the declining number of potential providers of LTC for dependent elderly people (e.g., Colombo et al., 2011; Huber et al., 2012). Moreover, dependent elderly people strongly prefer to be cared in their private homes (e.g., Eurobarometer, 2007). Substantial amount of care is provided by family members, fully or in part (e.g., Triantafillou et al., 2010). Providing home care comes at considerable opportunity costs occurring due to income losses. This increase in demand for LTC coincides with an increase in female labor market participation and a steadily increasing demand for more childcare facilities. Grandparental childcare remains the most popular alternative to formal childcare (e.g., Hank and Buber, 2009). At the same time, Germany witnesses an unprecedented wealth accumulation. For the current decade, transfers are expected to amount to € 4.6 billion (e.g., Sieweck, 2011). This accumulation opens the possibility to pay for ITT.

These empirical phenomena shape the question whether the equity principle should be applied for ITT. The literature provides some evidence that equity principle within the family plays a role, but it is far from universally accepted (e.g., Norton et al., 2013). However, little is known about individual citizens' view on applying the equity principle within the family.

To understand the citizens' view better, I provide a comprehensive study that relates respondents' personal characteristics to their answers regarding their acceptance to compensate for ITT. It is based on a representative survey among German citizens conducted in 2014 and 2015. I use two vignettes to elicit the social acceptance of applying the equity principle within the family. The first vignette considers a situation where one of two daughters provided LTC to her grandmother and waived part of her wage for this reason. The second vignette describes

the situation in which grandparents regularly looked after the children of one daughter. At the same time, another daughter paid the childminder who cared for her children. Respondents are asked state the fair distribution of inheritance among the daughters. Some 80% of the subjects stated that intra-familial LTC should be compensated, i.e. they accept the equity principle for intra-familial LTC. At the same time, only 38% of subjects stated that grandparental childcare should be compensated, i.e. they accept the equity principle for grandparental childcare. Some 53 percent of the respondents state that LTC should be compensated to a larger degree than grandparental childcare, while only approx. 13 percent of the respondents state that grandparental childcare should be compensated to a larger degree than LTC. In this descriptive study, I explore possible patterns behind these empirical phenomena by answering three research questions:

1) What characterises individuals who accept the equity principle for intra-familial LTC?

2) What characterises individuals who accept the equity principle for grandparental childcare?

3) What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other?

Before I start with individual characteristics, let us briefly consider the general picture: The majority accepts the equity principle for intra-familial LTC but not for grandparental childcare. One possible explanation could be that, for the grandparents, the relationship with the grandchildren is gratifying enough and they do not need any additional remuneration (e.g., Tobio et al 2010). Difference in social acceptance of applying the equity principle for different ITT might also be explained with evolutionary theory: investing in downward generations is more important for the family survival than investing in upward generations and therefore, the majority accepts equity principle for informal LTC but not for grandparental childcare. Finally, the differences in social acceptance of applying the equity principle for different ITT might be

explained through intergenerational differences in accumulated wealth. Laferrere and Wolff (2006) argue that the current level of retirement provides the old generation with high income in addition to accumulated wealth, so additional remuneration for grandparental childcare does not seem to be needed.

Turning to the interpersonal differences, I differentiate between different types of possible factors, among them the valuation of the family, respondents' age, sex and socio-economic position and self-serving bias variables. My main results can be summarized as follows: First, I find that age has the strongest effect: subjects belonging to the *old_generation* are more likely to accept the equity principle for informal LTC as well as for granparental childcare. Moreover, subjects belonging to the *old_generation* are less likely to accept an unequal compensation in favor of informal LTC. Second, family valuation does not matter in any of the dimensions: subjects who evaluate the family to be very important to them do not differ in their social acceptance of the equity principle for ITT from other subjects. Third, it is puzzling that being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of TT. Looking closer, however, I find it to have a moderating effect on other important variables. For instance, including the interactions shows that women having children differ in their social acceptance from men having children.

I am among the first to look at these questions. My results are interesting but only pose a starting point. First, they are only descriptive while I cannot offer a straightforward causal interpretation at this point. Second, I can only draw on a limited number of explanatory factors. For instance, I lack information on the number of respondents' siblings, number of children and their age. Having siblings means that subjects can share the burden of informal LTC provision, i.e. it reduces each child propensity to act as caregiver. The number of children and, in particular, their age could provide insights on the relevance of childcare assistance. Moreover, I lack information on country of origin and for subjects born in Germany, whether they come from

the Eastern or Western part. Here I argue that values and norms strongly vary amongst regions and obtaining information on country of origin is very important for deeper understanding of citizens' view on equity principle within the family and on wealth transfer taxation.

Like many other studies on values and norms (e.g., Schokkaert and Cappeau, 1991), my regressions have limited predicted power, i.e. they leave large parts of the variance in the dependent variable unexplained. This is not truly surprising, given subjective nature of social acceptance. It is rather reasonable in this case: if the subjects are put into the position of impartial spectator, I should not expect self-serving and socio-economic variables to have inordinate explanatory power. In this study, the effect of self-serving covariates is not strong: Among variables capturing self-serving bias, only having children has a significant effect. Therefore, I can draw the conclusion that the vignettes are properly designed and the respondents' answers measure moral concerns and only personal self-interest. As the socio-demographic data cannot sufficiently explain the variance in the factors, I need other additional covariates for the research on social acceptance.

While the separate results concerning LTC and grandparental childcare are useful to understand the single decisions within households, the comparison of social acceptance of applying the equity principle for two ITTs provides a deeper understanding of a family as a whole and allows me to provide first policy implications. Some 80% of the subjects stated that intra-familial LTC should be compensated while only 38% of subjects stated that grandparental childcare should be compensated. In Germany, recent reform proposals suggest financial remunerations for grandparents who provide childcare (*Betreuungsgeld, Großelterngeld)*. From the other side, Germany provides different options for remuneration of the home caregivers (*Pflegegeld,* pension insurance for caregivers, family leave laws). Given a budget pressure, my study evidence suggests that governments should better support informal LTC. The majority does not expect material reward for grandparental childcare. Moreover, subjects who evaluate the family

to be very important to them do not differ in their social acceptance of the equity principle from other subjects. For policy makers, it could mean that reform initiatives promoting importance of family and strengthening of family ties alone do not change subjects' social acceptance of compensation for ITT.

In future research, it seems promising to add open-ended questions in order to understand the argumentation behind social acceptance better. For instance, the question "Why do you think grandparental transfers should not be compensated?" Moreover, it could be useful to add individualism-collectivism scale to the survey (see Triandis and Gelfland, 1998). The scale is designed to measure four dimensions of collectivism and individualism. Individualistic subjects attach great importance to private interests and therewith to self-reliance, competition and emotional distance from group members. Collectivistic subjects give high priority to common interests and thereby to sociability, family integrity and interdependence. Chen et al. (1997) find that subjects scoring high on different dimensions of collectivism show different preferences for applying the equity principle. Hofstede (1980) and Thandis et al. (1988) find that there are cross-cultural differences and classify collectivist and individualistic cultures: Western countries are categorized as individualistic. Individualistic orientation traditionally increases with level of industrialization and wealth accumulation (e.g., Triandis and Gelfland, 1998). Taking everything into account, the individualism-collectivism scale seems to be very promising indicator for the future research: at the individual level and as an indicator that characterizes the country of respondents' origin.

Finally, I could make use of the measures of materialism and post-materialism using "Inglehart-index" that has already been included in several surveys such as World Values Survey (e.g, Inglehart, 2008). Materialist societies focus on the materialistic needs such as economic growth or a strong national defense. Post-materialism shifts the focus to nonmaterial goods such as

clean environment or personal freedom. I expect that subjects who attach big value to post-materialism are less likely to accept the equity principle for ITT.

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Appendix A: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fair_care_compensate_ordered	3,470	.6136888	.3882461	0	1
fair_child_compensate_ordered	3,246	.3595194	.4687264	0	1
ltc_childcare_compensation	2,545	.4086444	.7084979	-1	1
family_most_important	3,541	.3888732	.4875633	0	1
religious	3,415	.2532943	.4349617	0	1
indirect_reciprocity	3,180	.2201258	.4143965	0	1
female	3,546	.5208686	.4996348	0	1
middle_generation	3,546	.4610829	.4985535	0	1
old_generation	3,546	.2340666	.4234737	0	1
log_age	3,536	3.805936	.3408093	2.944439	4.26268
high_education	3,542	.4466403	.4972148	0	1
household_income	2,644	7.424028	.470535	5.991465	8.411833
regular_employed	3,539	.6436847	.4789776	0	1
gave_care_personally	3,500	.2277143	.4194172	0	1
parents_alive	3,363	.7341659	.441842	0	1
no_children	3,464	.710739	.4534848	0	1
family_ties_bad	3,356	.0393325	.1944139	0	1
family_relations_worse	3,480	.1097701	.3126479	0	1
neuroticism	3,364	5.730975	1.673243	2	10
extraversion	3,361	6.445998	1.77352	2	10
openness_to_experience	3,381	6.785862	1.737079	2	10
agreeableness	3,363	6.231638	1.419729	2	10
conscientiousness	3,359	7.830902	1.445038	2	10

Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	fair_care_compensate_ordered	1																						
2	fair_child_compensate_ordered	0.13	1.00																					
3	ltc_childcare_compensation	0.18	-0.89	1.00																				
4	family_most_important	-0.02	0.03	-0.03	1.00																			
5	religious	0.04	0.06	-0.04	0.10	1.00																		
6	indirect_reciprocity	0.07	0.04	-0.04	0.05	0.05	1.00																	
7	female	0.00	0.03	-0.03	0.05	0.11	-0.12	1.00																
8	middle_generation	-0.01	-0.02	0.02	-0.02	0.02	-0.09	0.00	1.00															
9	old_generation	-0.04	0.10	-0.10	0.04	0.04	-0.02	-0.02	-0.56	1.00														
10	log_age	-0.05	0.11	-0.11	0.04	0.08	-0.09	-0.04	0.20	0.63	1.00													
11	high_education	0.12	-0.06	0.10	0.04	0.00	0.09	-0.01	-0.09	-0.17	-0.30	1.00												
12	household_income	0.06	-0.05	0.08	-0.02	-0.03	-0.03	-0.05	0.11	-0.03	0.10	0.20	1.00											
13	regular_employed	0.03	-0.07	0.07	-0.12	-0.06	-0.01	-0.06	0.38	-0.48	-0.17	0.10	0.33	1.00										
14	gave_care_personally	0.03	0.06	-0.05	-0.02	0.06	-0.04	0.09	-0.01	0.22	0.26	-0.12	-0.08	-0.11	1.00									
15	parents_alive	0.05	-0.05	0.07	-0.01	-0.03	0.05	0.01	0.18	-0.60	-0.55	0.17	0.05	0.31	-0.25	1.00								
16	no_children	-0.06	0.03	-0.06	0.04	0.08	-0.03	0.03	0.17	0.24	0.50	-0.24	0.01	-0.01	0.13	-0.22	1.00							
17	family_ties_bad	0.02	0.00	0.01	-0.03	-0.02	0.01	0.00	0.03	0.00	0.02	0.03	0.02	-0.04	0.01	0.01	-0.06	1.00						
18	family_relations_worse	-0.01	0.02	-0.02	-0.02	-0.02	-0.04	0.03	0.06	-0.04	-0.02	0.00	0.01	0.02	0.00	0.05	-0.11	0.06	1.00					
19	neuroticism	0.02	0.01	-0.01	0.03	0.06	-0.02	0.18	-0.01	-0.05	-0.08	0.00	-0.05	-0.02	-0.05	0.07	-0.06	-0.02	0.07	1.00				
20	extraversion	-0.03	-0.03	0.01	-0.07	0.03	-0.04	0.13	-0.01	-0.03	-0.06	-0.01	0.02	0.01	0.07	0.06	0.04	-0.06	-0.04	-0.16	1.00			
21	openness_to_experience	-0.01	0.02	-0.03	-0.05	0.04	-0.02	0.15	0.01	0.01	0.02	0.07	-0.01	-0.06	0.04	-0.01	-0.01	0.03	0.00	-0.12	0.18	1.00		
22	agreeableness	0.02	0.01	-0.01	0.03	0.07	0.00	0.10	0.05	0.00	0.05	0.03	-0.01	0.01	0.03	0.01	0.07	-0.04	-0.03	-0.08	0.02	0.05	1.00	
23	conscientiousness	-0.04	0.06	-0.06	-0.05	0.05	-0.08	0.16	0.08	0.09	0.20	-0.10	0.02	-0.03	0.07	-0.09	0.17	0.02	0.01	-0.10	0.20	0.09	0.04	1

Appendix B: Compensation for LTC: Marginplots interactions with female

Average Marginal Effects of 1.parents_alive with 95% CIs

Average Marginal Effects of 1.children with 95% CIs

Average Marginal Effects of 1.old_generation with 95% CIs
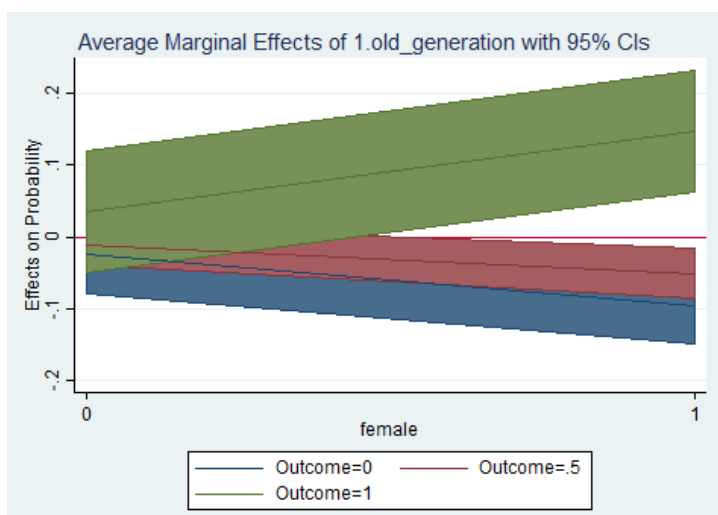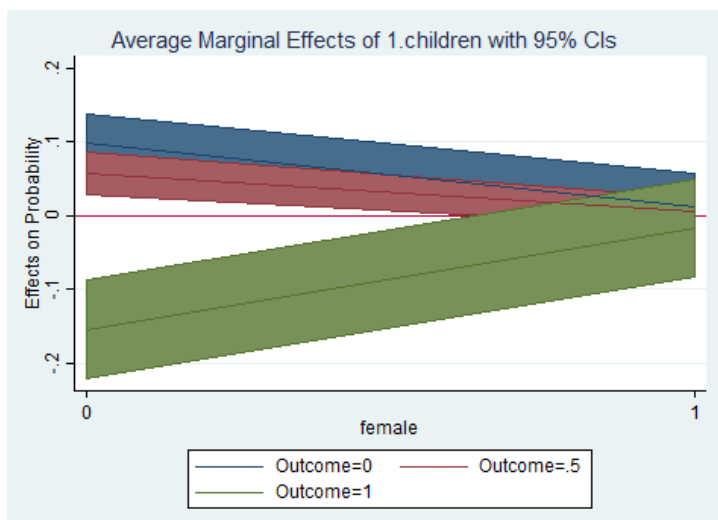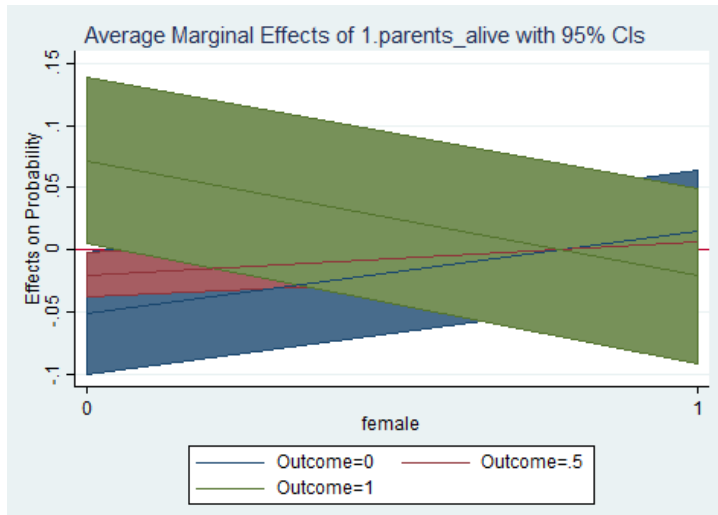
Appendix C. Compensation for informal LTC: significant marginal effects using baseline model

Variable		dy/dx	Std. Err.
religious			
	1	-.0368**	(.0153)
	2	-.0169**	(.0079)
	3	.0537**	(.0231)
children			
	1	.0564***	(.0158)
	2	.0270***	(.0088)
	3	-.0834***	(.0244)
old_generation			
	1	-.0612***	(.0235)
	2	-.0294**	(.0129)
	3	.0906**	(.0362)
high_education			
	1	-.0577***	(.0146)
	2	-.0252***	(.0069)
	3	.0829***	(.0213)
household_income			
	1	-.0376**	(.0164)
	2	-.0154**	(.0068)
	3	.0531**	(.0231)

*** p<0.01, ** p<0.05, * p<0.1

Appendix D: Compensation for grandparental childcare: Marginplots interactions with female

Appendix E. Compensation for grandparental childcare: significant marginal effects using baseline model

Variable	dy/dx	Std. Err.
religious		
1	-.0526**	.0254
2	.0019**	.0009
3	.0507**	.0245
middle_generation		
1	-.0656**	.0286
2	.0026**	.0011
3	.0630**	.0275
old_generation		
1	-.1863***	.0400
2	.0052***	.0009
3	.1811***	.0395

*** p<0.01, ** p<0.05, * p<0.1

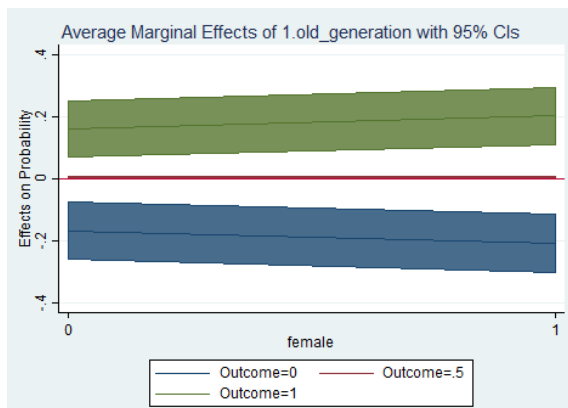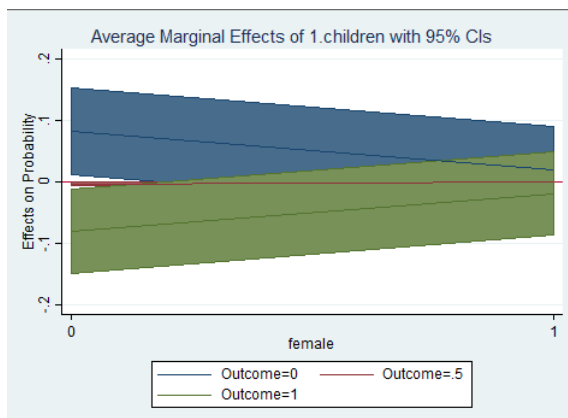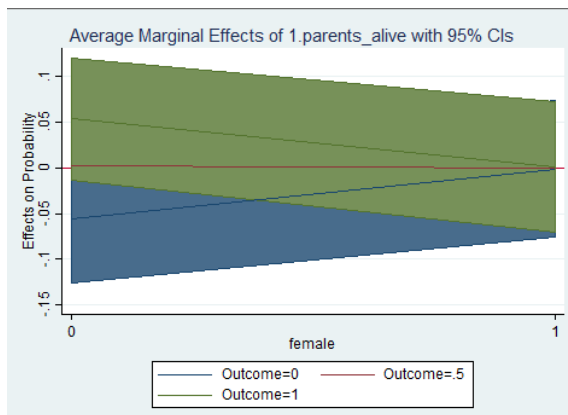**Appendix F: Compensation for ITT: Marginplots interactions with female**
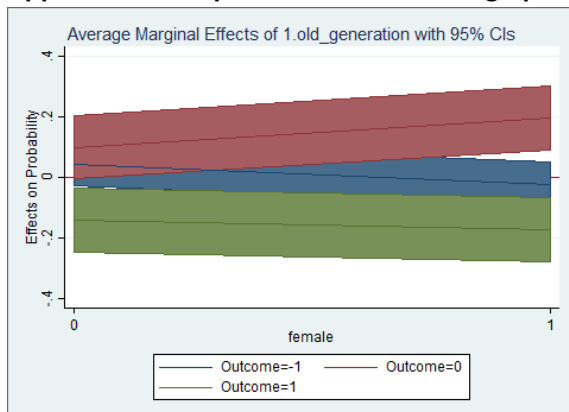
Appendix G: Compensation for ITT: significant marginal effects

Variable	dy/dx	Std. Err.
indirect_reciprocity		
1	.0283	.0224
2	.0474	.0299
3	-.0757**	.0311
religious		
1	-.0128	.0191
2	.0615**	.0282
3	-.0487*	.0293
children		
1	.0488**	.0194
2	-.0778***	.0299
3	.0290	.0309
middle_generation		
1	-.0140	.0236
2	.0775**	.0323
3	-.0635*	.0338
old_generation		
1	.0118	.0321
2	.1456***	.0461
3	-.1573***	.0465
high_education		
1	-.0717***	.0176
2	.0393	.0255
3	.0324	.0269
household_income		
1	-.0512***	.0196
2	.0321	.0277
3	.0191	.0295
conscientiousness		
1	.0045	.0065
2	.0156*	.0090
3	-.0201**	.0095

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

Figure 1: Distribution of citizens' degrees of compensation for LTC and childcare
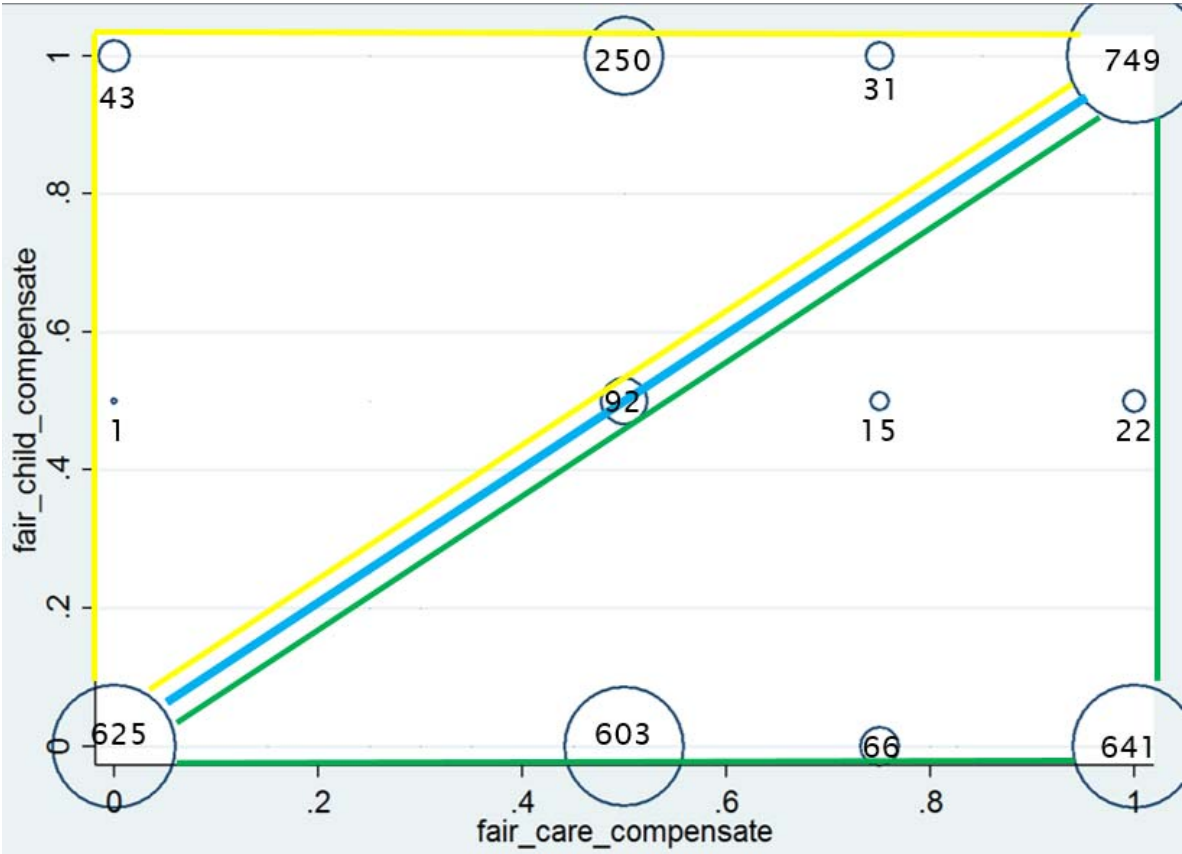
(created in Excel)

Table 1: Distribution of *fair_care_compensate_ordered* and *fair_child_compensate_ordered*

Value	fair_care_compensate_ordered			fair_child_compensate_ordered		
	Frequency	Percent	Cum.	Frequency	Percent	Cum.
0	741	21.35	21.35	2,010	61.92	61.92
0.5	1,199	34.55	55.91	138	4.25	66.17
1	1,53	44.09	100.00	1,098	33.83	100.00
Total	3,470	100.00		3,246	100.00	

Table 2: Compensation for informal LTC: ordered probit model

VARIABLES	(1)	(2)	(4)	(5)
family_most_important	-0.0204	-0.0124	-0.0215	-0.0225
	(0.0513)	(0.0532)	(0.0514)	(0.0514)
indirect_reciprocity	0.102	0.0983	0.0994	0.100
	(0.0622)	(0.0638)	(0.0622)	(0.0622)
religious	0.137**	0.118*	0.141**	0.136**
	(0.0589)	(0.0609)	(0.0590)	(0.0590)
female	-0.0288	-0.0236	0.171*	-0.297***
	(0.0505)	(0.0551)	(0.0922)	(0.0958)
middle_generation	0.103	0.110	0.101	0.0944
	(0.0679)	(0.0706)	(0.0679)	(0.0680)
old_generation	0.233**	0.251***	0.219**	0.244***
	(0.0938)	(0.0973)	(0.0939)	(0.0940)
high_education	0.212***	0.202***	0.214***	0.210***
	(0.0543)	(0.0562)	(0.0543)	(0.0543)
household_income	0.136**	0.132**	0.137**	0.140**
	(0.0596)	(0.0611)	(0.0596)	(0.0596)
regularly_employed	-0.0590	-0.0323	-0.0665	-0.0443
	(0.0644)	(0.0664)	(0.0645)	(0.0646)
gave_care_personally	0.0217	0.0202	0.0176	0.00281
	(0.0603)	(0.0621)	(0.0603)	(0.0606)
parents_alive	0.0779	0.0722	0.213**	0.0784
	(0.0691)	(0.0711)	(0.0865)	(0.0691)
children	-0.213***	-0.204***	-0.212***	-0.404***
	(0.0623)	(0.0646)	(0.0623)	(0.0854)
family_ties_bad	-0.116	-0.127	-0.108	-0.108
	(0.133)	(0.135)	(0.133)	(0.133)
family_relations_worse	0.00460	-0.00305	9.81e-05	0.00469
	(0.0803)	(0.0840)	(0.0803)	(0.0803)
neuroticism		0.0118		
		(0.0161)		
extraversion		-0.00911		
		(0.0151)		
openness_to_experience		0.0188		
		(0.0154)		
agreeableness		0.0136		
		(0.0180)		
conscientiousness		-0.0206		
		(0.0190)		
parents_alive#female			-0.283***	
			(0.109)	
children#female				0.370***
				(0.112)
Pseudo-R²	0.0124	0.0131	0.0139	0.0149
$\chi^2 - Stat$	56.08***	55.57***	62.83***	66.98***
Observations	2,148	2,022	2,148	2,148

Table 3: Compensation for grandparental childcare: ordered probit model

VARIABLES	(1)	(2)	(4)	(5)	(6)
family_most_important	0.0728	0.0869	0.0726	0.0709	0.0712
	(0.0578)	(0.0599)	(0.0578)	(0.0579)	(0.0579)
indirect_reciprocity	0.133*	0.101	0.131*	0.132*	0.131*
	(0.0692)	(0.0712)	(0.0692)	(0.0692)	(0.0692)
religious	0.138**	0.123*	0.140**	0.138**	0.139**
	(0.0662)	(0.0685)	(0.0662)	(0.0662)	(0.0662)
Female	0.0421	0.0109	0.146	-0.0799	0.0138
	(0.0571)	(0.0620)	(0.104)	(0.107)	(0.0669)
middle_generation	0.176**	0.167**	0.174**	0.170**	0.175**
	(0.0774)	(0.0805)	(0.0774)	(0.0775)	(0.0774)
old_generation	0.484***	0.457***	0.477***	0.487***	0.435***
	(0.105)	(0.109)	(0.106)	(0.106)	(0.122)
high_education	-0.0145	-0.0180	-0.0134	-0.0146	-0.0121
	(0.0611)	(0.0631)	(0.0611)	(0.0611)	(0.0611)
household_income	-0.0241	-0.0491	-0.0245	-0.0251	-0.0253
	(0.0674)	(0.0688)	(0.0674)	(0.0674)	(0.0674)
regularly_employed	-0.0176	0.00232	-0.0218	-0.0112	-0.0175
	(0.0731)	(0.0754)	(0.0732)	(0.0732)	(0.0731)
parents_alive	0.0789	0.0768	0.151	0.0803	0.0826
	(0.0781)	(0.0801)	(0.0989)	(0.0781)	(0.0782)
children	-0.135*	-0.107	-0.135*	-0.220**	-0.133*
	(0.0707)	(0.0732)	(0.0707)	(0.0944)	(0.0707)
family_ties_bad	-0.0561	-0.0555	-0.0497	-0.0498	-0.0498
	(0.149)	(0.153)	(0.149)	(0.149)	(0.149)
family_relations_worse	0.0261	0.0463	0.0262	0.0279	0.0258
	(0.0905)	(0.0943)	(0.0904)	(0.0905)	(0.0905)
neuroticism		0.0179			
		(0.0182)			
extraversion		-0.0225			
		(0.0172)			
openness_to_experience		0.0292*			
		(0.0174)			
agreeableness		0.00863			
		(0.0206)			
conscientiousness		0.0323			
		(0.0217)			
parents_alive#female			-0.148		
			(0.124)		
children#female				0.169	
				(0.126)	
old_generation#female					0.102
					(0.126)
pseudo-R²	0.0129	0.0143	0.0134	0.0135	0.0131
$\chi^2 - Stat$	42.33***	44.37***	43.76***	44.14***	42.99***
Observations	2,038	1,921	2,038	2,038	2,038

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4: Compensation for ITT: multinomial probit model

VARIABLES	(1) _1	(3) 1	(4) _1	(6) 1	(7) _1	(9) 1	(10) _1	(12) 1
family_most_important	-0.0877	-0.119	-0.0868	-0.141	-0.0935	-0.107	-0.0785	-0.114
	(0.120)	(0.0961)	(0.125)	(0.0997)	(0.120)	(0.0961)	(0.121)	(0.0962)
indirect_reciprocity	0.0283	-0.245**	0.0110	-0.214*	0.0273	-0.252**	0.0362	-0.240**
	(0.143)	(0.116)	(0.148)	(0.120)	(0.143)	(0.116)	(0.144)	(0.116)
religious	-0.213	-0.229**	-0.136	-0.188*	-0.226*	-0.219**	-0.221	-0.232**
	(0.136)	(0.109)	(0.140)	(0.113)	(0.137)	(0.109)	(0.137)	(0.109)
female	0.140	-0.0398	0.0892	-0.0228	0.146	-0.0427	0.317**	0.0407
	(0.119)	(0.0951)	(0.129)	(0.103)	(0.119)	(0.0952)	(0.144)	(0.111)
middle_generation	-0.262	-0.298**	-0.243	-0.267**			-0.262	-0.296**
	(0.167)	(0.129)	(0.173)	(0.135)			(0.167)	(0.129)
old_generation	-0.275	-0.615***	-0.266	-0.573***			-0.00249	-0.477**
	(0.221)	(0.179)	(0.229)	(0.185)			(0.253)	(0.206)
high_education	-0.481***	-0.0396	-0.460***	-0.0351	-0.463***	-0.0519	-0.495***	-0.0448
	(0.129)	(0.101)	(0.133)	(0.104)	(0.129)	(0.101)	(0.129)	(0.101)
household_income	-0.345**	-0.0454	-0.394***	-0.0153	-0.347**	-0.0378	-0.337**	-0.0405
	(0.137)	(0.111)	(0.140)	(0.114)	(0.137)	(0.112)	(0.137)	(0.111)
regularly_employed	-0.0488	-0.0105	0.000268	-0.0131	-0.0717	0.0602	-0.0503	-0.0123
	(0.150)	(0.122)	(0.156)	(0.126)	(0.137)	(0.111)	(0.150)	(0.122)
gave_care_personally	-0.184	-0.184	-0.187	-0.188	-0.184	-0.182	-0.185	-0.185
	(0.141)	(0.115)	(0.145)	(0.119)	(0.141)	(0.115)	(0.141)	(0.115)
parents_alive	-0.166	-0.139	-0.215	-0.170	-0.144	-0.122	-0.187	-0.150
	(0.161)	(0.133)	(0.165)	(0.137)	(0.156)	(0.128)	(0.161)	(0.134)
children	0.456***	0.233**	0.443***	0.206*	0.434***	0.281**	0.448***	0.226*
	(0.152)	(0.116)	(0.158)	(0.120)	(0.157)	(0.120)	(0.152)	(0.116)
family_ties_bad	-0.0794	0.0440	0.000591	0.0995	-0.0856	0.0700	-0.125	0.0207
	(0.340)	(0.260)	(0.348)	(0.268)	(0.339)	(0.260)	(0.341)	(0.261)
family_relations_worse	-0.0670	-0.150	-0.105	-0.221	-0.0843	-0.160	-0.0699	-0.152
	(0.189)	(0.150)	(0.198)	(0.157)	(0.189)	(0.149)	(0.189)	(0.150)
neuroticism			-0.00217	-0.0106				
			(0.0384)	(0.0306)				
extraversion			0.0135	0.0374				
			(0.0359)	(0.0286)				
openness_to_experience			0.0156	-0.0236				
			(0.0367)	(0.0289)				
agreeableness			-0.00957	-0.0131				
			(0.0431)	(0.0346)				
conscientiousness			-0.0145	-0.0726**				
			(0.0455)	(0.0362)				
log_age					-0.251	-0.715***		
					(0.267)	(0.208)		
old_generation#female							-0.555**	-0.281
							(0.252)	(0.210)
Constant	2.173**	1.252	2.529**	1.665*	2.969**	3.548***	2.043**	1.188
	(0.986)	(0.805)	(1.154)	(0.939)	(1.294)	(1.025)	(0.989)	(0.807)
Wald χ^2	82.91***		84.09***		81.80***		87.11***	
Observations	1,605	1,605	1,515	1,515	1,604	1,604	1,605	1,605

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1