Inheritance Expectations and Social Isolation: Evidence from South Korea

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Little is known about the economic causes of social isolation among elders in spite of the phenomenon becoming a growing policy concern in many developed countries with ageing populations. This paper fills this gap by assessing the role of inheritance as a novel determinant of social isolation among elders. Drawing on bequest motive theory as well as aspirations theory, we utilize a granular dataset from South Korea spanning the period 2008 – 2020. The nascent evidence suggests that adult children having high inheritance expectations is beneficial to parents. In particular, having higher inheritance expectations is found to increase the frequency of parent-child meetings, thus lowering the risk of parents' isolation. Additionally, mothers who report a higher likelihood of leaving an inheritance to their children are less isolated and disclose better well-being. Lastly, we find that the split of inheritance following a father's death has consequences on the subsequent isolation of mothers. To the best of our knowledge this is the first study that investigates the direct role of inheritance in the creation of elderly social isolation, hence providing useful insights to policymakers of countries facing this problem.

Keywords: Ageing, Aspirations, Inheritance, Loneliness, Social isolation, Strategic Bequest
JEL Classification: D10, D64, D91, I10, J14

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I. Introduction

It is now well-established among Health and Social scientists that humans need other humans to prosper and thrive (Cacioppo *et al.*, 2011). It is then not surprising to see that researchers are sounding the alarm in front of the dramatic levels of loneliness and social isolation manifesting themselves, particularly in more developed countries (Snell, 2017). Indeed, the risks posed by social isolation are many and continue to draw interest from researchers. Among others, social isolation has been linked to alcoholism (Akerlind and Hörnquist, 1992), cardiovascular and mental health deterioration (Leigh-Hunt *et al.*, 2017), diminished cognitive function (Evans *et al.*, 2019), depression (Sen *et al.*, 2022), nutritional risk (Locher *et al.*, 2005), obesity (Dickins *et al.*, 2016), suicidal ideation (Stickley and Koyanagi, 2016), morbidity and mortality (Cacioppo and Cacioppo, 2014).

The present study does not focus on the consequences of social isolation. Instead, we join the much smaller body of literature exploring the determinants of social isolation. In particular, our attention is drawn towards a gap in the literature, that of the economic determinants of isolation among older adults. In this direction, we contribute to the small empirical body of work on the economic risk-factors of social isolation among older adults, and investigate whether inheritance plays any role in the creation of such isolation. We build on Aspirations Theory as proposed by Genicot and Ray (2017), and posit that children do not passively "expect" the receipt of inheritance, but rather "aspire" for it, which has ramifications for child-parent relations thus for the potential social isolation of parents.

By modeling inheritance as an aspiration, we imply that children view parental care as an investment or effort necessary to reach their goal (the inheritance they aspire for), hence that the existence and the size of an inheritance is directly linked to how much children actively care for their parents. Furthermore, if inheritance is an aspiration, then failing to obtain the aspired inheritance constitutes what is known as an "aspiration frustration" which according to theory can alter one's behavior (Genicot and Ray, 2020). In line with this proposition, we posit that a child who was inheritance-frustrated following the death of a parent will offer less care to the surviving parent, thus contributing to that parent's isolation. Lastly, Aspirations Theory emphasizes the role of relativism when it comes to satisfaction. We apply this notion to

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our inheritance case by hypothesizing that an inheritor's satisfaction depends on the split of the total inheritance with other family members, which in turn affects the child's attitude towards the surviving parent.

Our line of arguments is also largely informed by strategic bequest motives theory, also known as exchange bequeathing theory, which states that inheritance is a source of mutually beneficial exchanges (Bernheim *et al.*, 1985). Under this bargain, parents obtain care from their children when they are old and in need of such support, in exchange for children obtaining an inheritance in proportion to the amount of care they provided.

Our empirical work focuses on South Korea, a country where social isolation and lonely deaths have become a major policy concern. Indeed, more than 20% of the Korean population reports feeling lonely, and around a third of the country's households are single-person households. Furthermore, South Korean elders face the highest suicide rate among OECD countries, and the country's population is rapidly ageing.

The contribution of this study is multifaceted: Firstly, most studies on social isolation focus on the consequences of isolation rather than its causes, despite the importance of the latter for prevention purposes. Secondly, to the best of our knowledge this is the first study investigating the direct role of inheritance in the creation of social isolation, in the context of Aspirations theory. Thirdly, this study offers a novel empirical application to Aspirations Theory, thus joining a growing body of literature in studies of Development and Health. Lastly, the findings provide useful insights to policymakers looking to tackle social isolation, particularly in countries where this phenomenon has become a policy concern.

II. Literature review

A) Social Isolation

The social isolation of an individual can be objective, perceived (*i.e.*, loneliness), or both. Both objective isolation and loneliness have become significant public health concerns in need of urgent addressing. In some communities, these conditions are resulting in an increase in deaths from loneliness. "Death by isolation" has even entered the dictionary in

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countries where the phenomenon is widespread, such as South Korea and Japan. Indeed, the link between isolation and mortality is well documented (Holt-Lunstad *et al.*, 2015). Penninx *et al.* (1997) find that loneliness is a significant predictor of mortality in older adults. Luo and Waite (2014) report that lonely Chinese adults faced higher risks of mortality. Cacioppo and Cacioppo (2014) find that lonely older adults have impaired executive functioning, sleep, and mental and physical well-being which contributes to their higher mortality. Brummett *et al.* (2001) find that patients of coronary artery disease with less than three individuals in their social network have higher risks of cardiac death and all-cause mortality. Eng *et al.* (2002) find that more isolated men have higher risks of death from suicide as well as higher rates of all-cause mortality.

Social isolation is often studied in conjunction with depression. Dorfman *et al.* (1995) document a strong correlation between isolation and depression. Sen *et al.* (2022) show that social interaction, even virtual ones such as text messages or email, carry moderating effects on self-reported depression among older adults. Indeed, digital media has been suggested to play an important preventive role against loneliness (Petersen *et al.*, 2020). Taylor *et al.* (2018) find that objective social isolation is unrelated to depressive symptoms, but that subjective social isolation from family and friends is associated with more depressive symptoms. This is relayed by Cacioppo *et al.* (2006) and Heikkinen and Kauppinen (2004) who find that loneliness is a predictor of depressive symptoms. Luo *et al.* (2012) show that loneliness both affects and is affected by depressive symptoms. Iliffe *et al.* (2007) also find that depression increases the risk of isolation among older adults.

B) Social Isolation in South Korea

Social isolation has been identified as a significant public health issue in South Korea, associated with increased depression, anxiety, and suicide (Kim *et al.*, 2021; Park *et al.*, 2021). Several factors have been identified as contributors to the high rates of isolation and loneliness in South Korea. Among the youth, the country's highly competitive education system has been shown to lead to a lack of leisure time and opportunities for socialization. For the wider population, the country's rapid economic development and increased urbanization has been associated with a breakdown of traditional social support networks (Yi

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and Hwang, 2015). Urbanization has also contributed to the isolation of rural elders (Choi *et al.*, 2020). Older Korean adults have been identified as the most vulnerable group, as aging has been shown to contribute to their loneliness, exclusion, and lower life satisfaction (Chung *et al.*, 2019).

Kim and Lee (2022) and Ko *et al.* (2019) find that loneliness among Korean elders largely depends on gender, with men more likely to report suicidal thoughts and feelings of loneliness. Oh *et al.* (2015) find that living arrangements are significantly associated with depressive symptoms among Korean elders, and that these effects vary by gender. Jeong *et al.* (2022) find that males and the old-old have higher rates of suicide and suicidal ideation, and that they are less likely to ask for help from others. Jang *et al.* (2022) show that suicide rates in Korea are associated with older age, higher isolation, lower socioeconomic status, and less physical exercise and religious activities. Kim *et al.* (2019) find that the degree of happiness among older Korean women living alone is a function of their self-esteem, which itself depends on the size of social network and the presence of social support. Do and Malhotra (2012) find that Korean older widowed women co-residing with an adult child are better protected against depressive symptoms.

A major consequence of social isolation is the phenomenon of "lonely deaths", known as "Godoksa" in Korea. Indeed, thousands of middle-aged and elderly Koreans die alone every year, with their death going unnoticed for extended periods of time. This issue is becoming increasingly worrisome considering the country's rapidly aging population. A number of factors contribute to this phenomenon, some of which are cultural and societal (Yi and Hwang, 2015). For example, Korean culture puts a high value on self-sufficiency, which makes it difficult for individuals to reach out for help when they are struggling with loneliness. Indeed, Confucianism, which is the set of beliefs predominant in Korean society, carries collectivistic values which prioritize the well-being of the group over the individual. However, strict adherence to such values may isolate those who are no longer able to contribute to the family and community, as they may feel pressure to conform to traditional expectations and sacrifice their own needs for the wellbeing of the group. Thus, it has been suggested that Korean elders may perceive themselves as a source of burden, which prevents them from seeking the help they need (Pan *et al.*, 2022).

Clearly, culture is at the forefront of the conversation on social

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isolation in South Korea. Filial piety, the Confucian virtue of respect, obedience and responsibility towards parents and elders, is a deeply ingrained cultural moral that is highly valued by older Koreans (Kim and Kihl, 2021). Filial piety has been shown to strongly influence intergenerational relationships and family dynamics in South Korea (Park, 2021). Moreover, Lew et al. (2011) suggest that this feeling of responsibility towards elders and ancestors was central to South Korea's industrialization and a driver for its economic success.

Elderly Koreans value strong family ties and share a sense of interdependence among family members (Park *et al.*, 2018). Some studies have highlighted the effects of filial piety on their mental health outcomes. Park (2008) shows that suicidal ideation moderately decreases when the family's level of communication is high; however, when the level of communication is low, depression increases and suicidal thoughts rise rapidly. Kim and Lee (2022) find that contact with family and being married are beneficial in reducing loneliness in later life-stages, particularly among men. Roh *et al.* (2015) find that family contact, both face-to-face and remote, is associated with lower depression for Korean elders. Chung and Park (2008) find that both the success of adult children and the existence of relationships were positively associated with good ageing among low-income Korean elders. In their systematic review of suicidal ideation among Korean elders, Yoon and Cummings (2018) reiterate the important role played by family.

Thus, it comes as no surprise that a rapidly modernizing culture which rewards individualism has been accused of being the primary driver of Korean elders' social isolation (Lee, 2016). Indeed, the traditional extended family structure is thought to have provided older adults with a sense of social support and belonging (Buja, 2016). However, the rise of nuclear families and the increase in women's workforce participation have led to a decline in this extended family structure, and are suggested to have made it more difficult for older adults to rely on their family members for care and support (Chung and Kim, 2023; Paik, 2009). In such a context, older parents may perceive themselves as burdensome, which leads to their isolation (Kim *et al.*, 2016).

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C) Inheritance with exchange motives

A relatively large literature has explored the altruistic motives behind inheritance and bequests. In contrast, very little has been done in regard to the strategic motives of bequeathing. The strategic bequeathing motive, sometimes referred to as exchange bequest motive, states that parents use wealth as a bargaining strategy to obtain required services from children who are motivated to get a larger share from the parental wealth. If the parent possesses substantial wealth to bequeath and there are multiple children, the strategy is to credibly threaten the children with unequal distribution of the wealth and the possibility of receiving a smaller or no inheritance if they fail to meet the expected levels of care. (Bernheim *et al.*, 1985; Chang and Luo, 2015). When strategic motive is operative, parents agree to transfer their assets to their children upon their death as a quid-pro-quo to the support offered by the children when the parents are old and in need of support. In other words, parents use the prospect of future bequests to induce their children to provide care to them when they are old and to have some control over the behavior of their offspring (Izuhara, 2008).

Bernheim *et al.* (1985) find that American children visited and called their parents more frequently when their parents had larger amounts of bequeathable wealth. Also in the US, Caputo (2005) finds that intentions to leave inheritances to children are likely to affect adult daughters' decisions to provide personal care or do household chores for their parents. Lakshmanasamy (2013) finds that Indian households exchange wealth largely for the support and services provided by the children. Further support for the exchange hypothesis is provided by Ciani and Deiana (2018) who exploit Italian data and show that parents who helped their adult children in the past are rewarded by higher chances of receiving informal care later in life. Cox and rank (1992) find that inter-vivo family transfers are more consistent with exchange rather than altruistic motives. Tomini *et al.* (2016) study informal care in Europe and find evidence for both altruistic and exchange-driven forms of informal care.

A number of studies have looked at inheritance intentions and expectations. For instance, sons' inheritance expectations have been found to positively correlate with support to parents, whereas daughters' inheritance expectations were negatively associated with parental support (Caputo, 2002; Silverstein *et al.*, 1995). Some studies

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have shown that racial differences impact inheritance expectations and exchanges (Berry, 2006). Others have highlighted the role of culture, norms, and beliefs (Szydlik, 2012).

Moreover, inheritance expectations have been shown to affect a number of outcomes for caregivers. Basiglio *et al.* (2023) use Dutch data and find that expecting an inheritance increases the chance to dissave and reduces the probability to work at a later age. Lundberg (2020) shows that Swedish males adjust their savings following an inheritance loss while women adjust both their labor supply and savings. Some studies have looked at inheritance expectations and family conflict, as misunderstandings or a lack of aligned perspectives regarding anticipated or received inheritance can lead to family disputes (Izuhara and Köppe, 2019). Stum (2000) suggests that discrepancies in views on inheritance between parents and children could lead to family conflict and affect current exchanges and relationships. In this context, de Witt *et al.* (2013) explain that the decision to leave and distribute an inheritance is often the result of reconciliating different objectives such as leaving a lasting impact, or preserving family ties and avoiding family conflict. It has also been suggested that the level of informal care offered to parents is positively associated with that offered by one's siblings, which may be interpreted as siblings competing for inheritance (Gonzalez and Lopes, 2020).

In the case of Confucian South Korea, the eldest son was traditionally seen as the righteous heir to the largest portion of bequest, and often in its entirety (Prendergast, 2005). An attempt at addressing this was made in 1991 through a change in family law which promotes equal distribution of inheritance, and there exists regulation which stipulates that children who have cared for their parents should inherit. These revisions, alongside cultural changes have been suggested to improve the fairness of bequeathing behavior in the country (Kim *et al.*, 2005). Nonetheless, the majority of evidence suggests that patriarchal norms remain largely present within Korean inheritance practices (Nam *et al.*, 2015; Lee, 2017). Yoo (2020) found that the lower the educational level of the parents the greater the disparity in inheritance allocation proportion, which could be interpreted as showing that less educated people tend to maintain traditional ways of thinking and to favor the eldest son. Some studies have looked at Korean inheritance from the lens of strategic inheritance motive theory. In this context, Canda (2013) explains that Korean adult children who do not provide adequate

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care in the view of their parents and peers may experience diminished inheritance, alongside internal feelings of shame and guilt. However, Park (2014) analyzed parent-children pairs using panel data and found no evidence that children cared for their parents in anticipation of an inheritance.

D) Hypothesis development

We now present the research hypotheses following the theoretical arguments and empirical findings offered by the literature and which serve as a guiding principle for this paper.

The first hypothesis draws on the strategic bequeathing motives theory, and aspirations theory as offered by Genicot and Ray (2017). Indeed, we test whether adult children aspire for an inheritance rather than passively expect receipt of it. In other words, we propose that adult children perceive inheritance as an objective they can work towards accomplishing, and that they do so by offering care to their parents by frequently visiting and contacting them.

Similarly, the second hypothesis states that parents who express a higher likelihood of leaving an inheritance behind receive more care from children, hence are less socially isolated. Whilst the first hypothesis focuses on the behavior of potential heirs, the second one focuses on the consequences for parents.

In this same explanatory arc, the third hypothesis of this paper posits that upon the death of a father and the subsequent split of inheritance, children who are dissatisfied by the inheritance they have received experience aspiration frustration. Hence, they offer less care to their mother which contributes to her isolation and loneliness.

III. Methodology

A) Data

We exploit a granular dataset from the Korean Longitudinal Survey of Aging (KloSA), a nationally representative sample of the population aged 45 years and older, living in private households in Korea (Kim *et al.*, 2020). The survey was introduced by the Korea Employment Information Service (KEIS) in response to the country's ageing society and the lack of statistical data necessary for the design and

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Table 1
Descriptive statistics

	Mean	S.D.	Min.	Max.
A: Adult children (N=2219)				
Likelihood of receiving inheritance (ord)	1.918	2.668	0	10
Age	57.059	6.864	45	84
Gender	0.537	0.499	0	1
Distance (ord)	2.276	1.449	1	4
N. of siblings	3.814	1.712	0	11
Visits per year (ord)	4.765	1.719	1	10
Contact per year (ord)	6.895	1.773	1	10
Net assets	16076.33	28143.76	-70000	588500
Owns home	0.812	0.391	0	1
B: Widows (N=748)				
Likelihood of leaving inheritance (ord)	3.066	3.144	0	10
ISOL	0.101	0.301	0	1
Sadness (ord)	1.627	0.791	1	4
Satisfied with children (ord)	6.826	1.833	0	10
Age (widows)	71.147	9.307	45	98
N. of alive children	3.625	1.529	1	9
SPLIT1	0.218	0.413	0	1
SPLIT2	0.135	0.342	0	1
Net assets	10235.52	15546.8	-35000	140500
Owns home	0.849	0.357	0	1

Notes: The total number of observations is 9210. Data is sourced from KloSA, spanning the period 2008 to 2020.

implementation of policies relevant to ageing. The survey has been conducted every 2 years since 2006 via Computer Assisted Personal Interviewing, targeting a sample of around 10,000 individuals. More detailed information on sampling design and survey approach can be found at the KloSA website.

From KloSA, we analyze respondents surveyed from 2008 to 2020, disregarding the first wave of the survey (2006) due to the high number of missing observations. KloSA respondents are asked about the frequency of contact they hold with their parents and children, as

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well as their expectations about receiving and leaving an inheritance. Additionally, we can control for the distance between parents and children, the number of siblings, the number of children, as well as gender and age. A key component of KloSA that is relevant to this study is the "Exit Survey" which takes place following the death of a past respondent, and where family members are asked a number of questions on the situation of the deceased prior to passing away. Among the many questions that form these exit interviews, family members are asked as to whether the deceased had left an inheritance, and how this inheritance was split between inheritors. Table 1 presents some descriptive statistics of the sample.

B) The model

Our specification diverges from traditional models by treating inheritance not as a passive expectation but as an aspiration, which shapes behavior and interactions within family structures. This novelty lies in framing inheritance expectations dynamically, in line with aspirations theory and strategic bequest theory, capturing a more realistic interaction between economic motives and family relationships. Unlike traditional frameworks that assume fixed inheritance expectations, our approach factors in aspirations as a motivational force. This construction enables us to observe more nuanced effects on social isolation, and aims to encapsulate both economic and psychological dimension. Indeed, whilst inheritance is traditionally regarded as a static factor, our model reflects the ongoing, aspirational impact on parent-child exchanges.

In line with the hypotheses to be tested we estimate the following model:

$$y_{it} = \beta_0 + \beta_1 RIE_{it} + \beta_2 \omega_{it} + \gamma_t + u_{it} \quad (1)$$

y_{it} is the variable of interest, showing the level of care offered to parents by individual i at time t. Two proxies for this measure are offered: the frequency of visiting parents, and the frequency of remote contact with parents (phone calls, emails etc.). RIE_{it} is the key predictor, and represents the likelihood of receiving an inheritance in the future as expressed by respondent vis-à-vis when they were interviewed at time t; ω_{it} is a vector of control variables in line with the respective

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literature which include the age, a dummy variable for gender, the distance between the respondent's home and that of parents, and the number of siblings; γ_t captures year fixed effects.

The second model we estimate is shown in equation (2). Unlike equation (1) which is estimated using the sample of adult children (*i.e.*, the potential inheritors), equation (2) is estimated using the sample of female widows who have experienced an inheritance split following the death of their husbands, and who may leave an inheritance behind following their own deaths. With this model, we test whether parents who express a greater likelihood of leaving an inheritance behind report better subjective wellbeing and less isolation. Additionally, equation (2) allows us to gauge the effects of the reaction of adult children following the split of inheritance after the death of their father.

$$y_{it} = \beta_0 + \beta_1 LIE_{it} + \beta_2 SPLIT1_i + \beta_3 SPLIT2_i + \beta_4 \varphi_{it} + \gamma_t + u_{it} \quad (2)$$

The dependent variable y_{it} in equation (2) represents the self-perceived condition of mothers (satisfaction with children; frequency of "sad days") in addition to their objective social isolation (frequency of contact with family). *LIE* refers to the likelihood of leaving an inheritance behind as expressed by the respondent. *SPLIT*1 and *SPLIT*2 are dummy variables showing how inheritance was split among children following the household head's death, and are used to represent the unfairness of the split. *SPLIT*1 takes the value of 1 if inheritance was distributed unequally between children. *SPLIT*2 accounts for South Korean bequeathing culture which has traditionally considered it acceptable to bequest the entirety or the majority of wealth to the eldest son. *SPLIT*2 takes a value of 1 if the inheritance split deviates from traditional norms, particularly if the eldest son does not receive the majority share, reflecting a shift from customary practices. This distinction aligns *SPLIT*2 with contemporary changes while *SPLIT*1 measures general fairness in distribution. Lastly, the control variables of equation (2), which are captured by the vector φ_{it} differ from those of ω_{it} in equation (1). φ_{it} includes the age, and the number of alive children. Equation (2) also accounts for year fixed effects.

Estimations of equation (1) are conducted using the sample of adult children i.e., the potential heirs, whereas equation (2) concerns the sample of female widows only, and so for a number of reasons. Firstly, it is more convenient for the purpose of this study to look at inheritance

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when there is only one single parent, as motives behind parent-child exchanges would become clearer. For instance, should both parent be alive, it would be possible for a child to visit the parental home only with the intention of visiting one of the two parents. Additionally, focusing on widows limits the bias from missing information as, for example, parents might disagree or influence one another regarding the split of inheritance. Also, one of the spouses might be a prospective inheritor as well, which in turn might influence the level of care offered by children since they may perceive the living parent as an obstacle to their own inheritance. Lastly, it helps us in dealing with the problem of "who owns what" in a couple. For instance, it is possible that some of the households' assets are the property of the husband while others belong to the wife, and our data does not enable us to capture such differences.

C) Estimation procedure

Endogeneity is acknowledged as a limitation in studies of this nature, particularly given the absence of experimental data. In particular, the models we have presented above are exposed to omitted variable bias and risks of reverse causality. To mitigate these concerns, we apply both instrumental variable and fixed-effects approaches to reduce these potential biases.

Our first instrument of choice is a binary variable showing whether a respondent owns the home they live in or not. Indeed, homeownership plays an important role in the formation of inheritance expectations, and the literature suggests little reason to suspect that house ownership would affect the degree of care offered to parents, nor the loneliness of an individual. We further make use of another instrument, the log of net assets. This instrument is appealing as it fits within the context of an aspirations-based model which states that a person's relative position in a wealth or income distribution is central to their aspiration behavior. Yet again, the literature offers little reason to suspect a particular link between this instrument and the degree of care offered to parents, nor with a parent's perceived isolation, except by the means of inheritance. We tested the validity of the instruments by running the first-stage estimations (Appendix A). The instruments emerged as significant predictors of the endogenous regressors with F-statistics larger than 10. Additionally, over-identifying restrictions were assessed

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by means of the Sargan-Hansen tests which generated large p-values, thus a correctly specified identification strategy.

Homeownership and net assets, whilst viable instruments, are not without limitations, as they may indirectly influence social behaviors through channels other than inheritance expectations. We note this limitation as an area for future research with potentially stronger instruments. Additionally, net assets, where negative, were managed by excluding such cases from the estimations, given their limited impact on the overall sample size.

We begin by estimating the presented equations using fixed-effects models. Furthermore, we apply a 2SLS methodology to estimate the models using the presented instruments. In the cases where the outcome variable is binary or ordinal, we support our analysis by estimating probit and extended random-effects ordered probit regressions which accommodate endogenous covariates.

IV. Results

We begin our analysis by looking at adult children, hence the potential inheritors. We estimate the effect of children expressing a zero likelihood of receiving an inheritance on a proxy for the objective social isolation of their parents. In this case, the dependent variable is a dummy variable which takes the value of 1 if the respondent reports visiting parents less than once a year. Considering that family plays a key role in the social network of parents, such an estimation would prove to be an informative starting point for our study.

Results are presented in table 2, where column (1) shows coefficients from a fixed-effects model and column (2) shows marginal effects from a probit estimation. Across both columns, we can see that expecting no inheritance is associated with the respondent not visiting parents, with FE and Probit estimations showing an average increase of 2.5% and 2.9% in the odds of not visiting parents respectively. Being a female also appears as positively associated with minimal contact with parents, as evidenced by the highly significant coefficients of the magnitude of 0.319 for FE and 0.078 for Probit. This result is not surprising and was expected considering Confucian family ideology which dictates that wives should put their husbands' families first, hence limiting the degree of contact with their families of origin (Choi *et al.*, 2019). Also unsurprisingly, the distance separating parents and children emerges

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Table 2
ZERO INHERITANCE EXPECTATIONS VS. CONTACT WITH PARENTS

	Fixed-Effects Model	Probit
	(1)	(2)
Expects no inheritance	0.025**	0.029***
	[0.01]	[0.009]
Gender_Female	0.319***	0.078***
	[0.017]	[0.011]
Distance	0.106***	0.123***
	[0.006]	[0.005]
Age	-0.026*	0.008***
	[0.001]	[0.001]
Number of siblings	0.01	0.002
	[0.03]	[0.003]
R-squared	0.073	-

Notes: N = 9210 adult children (potential inheritors). Column (2) shows marginal effects. Estimations include year fixed effects. Standard errors are clustered around panel ID. ***, ** and * indicate significance at the 1%, 5% and 10% respectively.

as a highly significant covariate limiting visits to parents across both estimations. Taken together, these results indicate that inheritance expectations might be playing a part in the isolation of parents.

To gain further insights, we estimate equation (1) using fixed-effects and a 2SLS. Table 3 shows the estimation results. In columns (1) and (2), the outcome variable is the frequency of in-person meetings with parents, whereas columns (3) and (4) show estimates when the dependent variable is the frequency of remote contact (*e.g.*, phone calls). The key predictor (RIE) is ordinal and represents respondents' inheritance expectations. The coefficients reported in Table 3 show that only one form of parental contact is affected by inheritance expectations. Indeed, we can see that adult children seem to increase the frequency of in-person visits when they express a higher chance of receiving an inheritance. In particular, the FE (2SLS) model suggests that a one unit increase in inheritance expectations is associated with a 1.8% (31.7%) increase in the frequency of visits to parents. However, phone calls and other forms of distant contact are unaffected. Being a female is shown to be associated with lesser contact with parents, both in-person and remote. We can interpret these findings as evidence for a

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Table 3

Inheritance expectations and contact with parents

	VISITS		CONTACT	
	FE Model	2SLS	FE Model	2SLS
	(1)	(2)	(3)	(4)
Inheritance Expectation (RIE)	0.018** [0.007]	0.317** [0.159]	0.015* [0.008]	0.156 [0.162]
Gender_female	-1.688*** [0.071]	-1.61*** [0.109]	-1.35*** [0.078]	-1.29*** [0.114]
Distance	-0.722*** [0.025]	-0.728*** [0.032]	-0.372 [0.026]	-0.355*** [0.032]
Age	-0.008 [0.005]	-0.026** [0.011]	0.006 [0.006]	-0.002 [0.011]
Number of siblings	-0.08 [0.134]	-0.04 [0.197]	0.221 [0.203]	0.246 [0.242]
N	9210	7114	9210	7114
R-squared	0.218	0.154	0.018	0.011
Hausman (p-value)	0.000	0.000	0.000	0.000
Sargan-Hansen (p-value)		0.617		0.327

Notes: Respondents are adult children (potential inheritors). Estimations include year fixed effects. Standard errors are clustered around panel ID. ***, ** and * indicate significance at the 1%, 5% and 10% respectively.

link between inheritance expectations and parental care, at least in its in-person meetings form which is arguably the most relevant to social isolation. Following these results, we can deduce that inheritance seem to be aspired for rather than being passively expected by individuals in our sample. Indeed, inheritance expectations are affecting the frequency of visits paid to parents, thus supporting the hypothesis that inheritance has an aspirational effect on children that motivates them to "invest" more visits to their parents in the hopes of obtaining an inheritance.

Building on these findings, we move on to the estimation of equation (2) which offers the perspective of the parent, or female widows to be precise. The first set of coefficients are shown in table 4. The key regressors are the respondent's expectation levels regarding the likelihood of leaving an inheritance behind (LIE), and the two dummy variables (SPLIT1 and SPLIT2) indicating how inheritance was distributed amongst children following their fathers' deaths. Two

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TABLE 4

THE EFFECTS OF PAST SPLIT OF INHERITANCE ON MOTHERS

	SATISFIED WITH CHILDREN		FREQUENCY OF SAD DAYS	
	FE Model	2SLS	FE Model	2SLS
	(1)	(2)	(3)	(4)
Inheritance Expectation (LIE)	0.019*	0.035	-0.019***	0.009
	[0.01]	[0.047]	[0.004]	[0.02]
Uneven Split (SPLIT1)	-0.299***	-0.386***	0.201***	0.173**
	[0.113]	[0.138]	[0.056]	[0.068]
Untraditional Split (SPLIT2)	0.315**	0.333**	-0.021	0.005
	[0.136]	[0.165]	[0.068]	[0.076]
Age	-0.03***	-0.412***	0.014***	0.015***
	[0.007]	[0.009]	[0.003]	[0.004]
Number of children alive	0.214*	0.153	-0.05	-0.098**
	[0.12]	[0.157]	[0.05]	[0.049]
N	4470	3081	5422	3575
R-squared	0.018	0.0307	0.047	0.034
Hausman (p-value)	0.000	0.000	0.000	0.000
Sargan-Hansen (p-value)		0.884		0.495

Notes: Respondents are widows. Estimations include year fixed effects. Standard errors are clustered around panel ID. ***, ** and * indicate significance at the 1%, 5% and 10% respectively.

outcome variables are used to study the effects of these covariates on the wellbeing of respondents. The first one is mothers' self-reported level of satisfaction with the relationship with children. The second one is the frequency of days spent "sad" prior to the interview. As was highlighted in the literature review, these two aspects of elders' lives are central to their perceived social isolation.

Looking at Table 4, we can see that an uneven split of inheritance following a father's death worsens conditions for inheritors' mothers. Respondents are shown to report less satisfaction with children and more sad days, significant at 1% and consistent across both Fixed-effects and 2SLS estimations. Indeed, following an uneven inheritance split, widows' likelihood of being satisfied with children drops by 29.9% and 38.6% in the FE and 2SLS estimations respectively, whilst the opposite is true for the frequency of sad days, with positive coefficient in

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the magnitudes of 20.1% and 17.3%. On the other hand, when culture is taken into consideration, and inheritance is not distributed according to the traditional norm which states that the eldest male should receive most or all of the inheritance, respondents report more satisfaction regarding their relationship with children. Our estimations suggest that this deviancy from traditional bequeathing norms increases the odds of widows being satisfied with children by 31.5% and 33.3% for FE and 2SLS estimations, but has no significant effect on the frequency of sad days. Taken together, these results may be indicative of the cultural change taking place in South Korea, where old bequeathing norms are being set aside. An interesting finding that emerges from these estimations is that as respondents grew older, they became more satisfied with their children. However, and in line with the literature, we can see that growing old also brings more sadness for South Korean female elders. For robustness, we have re-estimated these equations using random-effects ordered probit models. Coefficients and marginal effects are shown in appendices B and C.

To draw better sense of these results, we split the sample of respondents between widows whose children have not inherited equally following their fathers' deaths, and those whose children did (Table 5). We conduct fixed-effects, probit and 2SLS estimations to establish whether mothers' reported likelihood of leaving an inheritance behind affects their own objective social isolation following the split of inheritance after husbands' deaths. The outcome variable is a dummy variable equaling if respondents report a complete inexistence of contact with friends or family.

Looking at the coefficients (marginal effects in the case of Probit) of the key independent variable (LIE), we find that mothers' reported inheritance expectations does not matter when children have gone through an uneven split of inheritance. However, these same expectations become significant if children have inherited equal shares of wealth, and appear to lower the probability of occurrence of objective social isolation of respondents (0.8% for FE, 0.9% for Probit and 3.5% for 2SLS). Thus, it appears that children are less likely to desert their mothers if they have experienced an even distribution of inheritance when fathers pass away.

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Table 5
Inheritance split and Isolation

	CHILDREN INHERITED UNEQUALLY			CHILDREN INHERITED EQUALLY		
	FE	Probit	2SLS	FE	Probit	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Inheritance Expectation (LIE)	0.006 [0.004]	0.001 [0.006]	0.013 [0.013]	-0.008*** [0.002]	-0.009* [0.006]	-0.035*** [0.011]
Age	0.057*** [0.012]	0.003** [0.002]	0.011** [0.005]	0.029*** [0.01]	-0.002** [0.001]	0.005*** [0.002]
Number of children alive	0.06 [0.071]	-0.002 [0.01]	-0.009 [0.081]	-0.02 [0.021]	-0.002 [0.005]	0.001 [0.024]
N	1186	1034	1034	4252	2550	2550
R-squared	0.013	-	0.011	0.017	-	0.022

Notes: Respondents are widows. Columns 2 and 5 show marginal effects. Estimations include year fixed effects. Standard errors are clustered around panel ID. ***, **, and * indicate significance at 1%, 5% and 10% respectively.

V. Discussion and Conclusion

Strategic bequest motives theory dictates that the service provided by each child in the family is positively related to the chance of receiving wealth from parents (Bernheim *et al.*, 1985; Chang and Luo, 2015). A good example is provided by Caputo (2005), who shows how intentions to leave inheritances to children affect adult daughters' decisions to provide personal care or do household chores for their parents. Our findings relay a similar story. Indeed, Korean adult children appear to aspire for inheritance rather than expect it (Genicot and Ray, 2020). With an objective in mind, they invest effort in the hope of reaching their target. In our case, this effort takes the form of family visits. Interestingly, we found no significant change in the frequency of remote contact, such as phone calls or emails. This might be explained by the fact that phoning a parent can be considered as the bare minimum a child is supposed to do, and not be treated as "effort" or "investment". One may also suggest that beyond a certain point, a low frequency of remote contact between parent and child is synonymous with deeply rooted family issues that go beyond the scope of this study.

The main motivation behind this paper is to contribute to expand our understanding of the factors that may cause social isolation and

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harm elders' wellbeing. From the results, it emerges that adult children aspiring for inheritance is a double-edged sword. On the one hand, it proves beneficial for parents who are likely to leave an inheritance behind. Indeed, we have found that widows who expressed a high likelihood of leaving an inheritance behind fared better across measures of both objective and perceived social isolation. On the other hand, this entails that poorer parents who have less to offer are more likely to be pushed towards isolation due to the little possibility for "exchange" with their children.

The findings of this study suggest that the split of inheritance in South Korea has a significant effect on children's attitudes towards their mother. Indeed, the estimates suggest that children "reward" their surviving parent when they receive an even share of inheritance. However, the approach to this particular question had limitations, as we did not consider the child's earlier inheritance expectations when gauging the effects of the split. Hence, we are unable to make confident conclusions as to whether aspiration fulfilment and frustration have any role to play in this case. Also, it is important to keep in mind that this study was conducted in South Korea, a society with a distinct cultural and historical context.

We acknowledge a number of limitations to this paper. Firstly, there is lack of information available on inter vivos transfers, which could potentially play a role in shaping caring activities offered to elders. Secondly, the fact that respondents are surveyed every two years poses methodological challenges in terms of gauging whether variations in parents' heath status impact children's care levels towards them. Thirdly, a number of arguments could be made against the instruments used as part of our IV strategy, so it would be advisable to repeat the study using more conventional instruments such as exogenous shocks to parents' wealth or income.

To the best of our knowledge, this is the first paper which offers such evidence on the role of inheritance expectations in the context of social isolation of elders. We are of the view that this study offers invaluable insights to policy makers interested in supporting the wellbeing of older adults and tackling issues that accompany the aging of society, particularly for the South Korean context. Our recommendations are threefold. Firstly, we advise policy makers to invest in further researching the developments and current status of filial piety in South Korea. Building such an understanding would enable the design of

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more effective strategies for promoting the wellbeing of older adults in this context. Secondly, we recommend the creation of programs that monitor social isolation and parental care following the distribution of inheritance. Such a step would help us in developing our understanding of the effects of inheritance split on the wellbeing of elders. Finally, we advise Korean policymakers as well as researchers on ageing societies to further investigate how inheritance tax laws could be optimized in order to incentivize care, attention, and company given to parents.

It is clear that more research is needed to fully understand the effects of inheritance on the social well-being of older adults. Indeed, despite the saliency of this avenue, there is a relative dearth of research examining the relationship between the two. Also, more research is needed for the examination of inheritance and social isolation among elders while considering cultural and historical context. Finally, more research is needed regarding the role of inheritance (or lack thereof) in the well-being of other vulnerable people such as low-income individuals, or racial and ethnic minorities.

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