

# Intergenerational solidarity and subjective economic vulnerability among older adults in Indonesia

Novya Zulva Riani\*; Idris; Yeniwati

Department of Economics, Faculty of Economics and Business, Universitas Negeri Padang, Indonesia

*\*To whom correspondence should be addressed. Email: novyazulvariani@fe.unp.ac.id*

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## Abstract

This study examines the influence of intergenerational relationships on the subjective economic vulnerability of older adults in Indonesia, with particular emphasis on reciprocal motives and bequest intentions within the framework of intergenerational solidarity. Using data from the fifth wave of the Indonesia Family Life Survey (IFLS-5) conducted in 2014, comprising 6,246 respondents aged 60 and above, the study estimates two forms of subjective vulnerability—self-assessed economic vulnerability and perceived economic vulnerability—using a bivariate probit regression model to address potential endogeneity between co-residence with adult children, health status, bequest motives, and vulnerability among older adults. The findings indicate that bequest motives significantly increase the likelihood of co-residing with adult children, reflecting reciprocal exchange mechanisms within multigenerational households. Physical and psychological health emerge as the strongest determinants of subjective vulnerability among older adults. This study makes an important empirical contribution by introducing an integrated model that links bequest motives, intergenerational solidarity, and subjective vulnerability within the context of a developing country. Overall, the results underscore the need for stronger synergy between family-based support and formal social protection systems to mitigate vulnerability risks among older adults in an era of population ageing.

**Keywords:** *Bequest motive; Intergenerational solidarity; Social protection systems; Vulnerability risk*

**JEL Classification:** C36, D64, I31, R28

## INTRODUCTION

Vulnerability among older adults has become an increasingly important issue since the United Nations introduced the Sustainable Development Goals (SDGs) under the 2030 Agenda and the principle of “no one left behind.” This agenda underscores the need to address the well-being, safety, and security of vulnerable groups, including older adults (WHO, 2024). According to the World Health Organization, the global population aged 60 years and above reached 1.4 billion in 2024 and is projected to account for one in six individuals worldwide by 2030. Indonesia officially entered the ageing-population phase

in 2021, with older adults comprising more than 10 percent of the total population (Badan Pusat Statistik, 2024). This transition reflects sustained improvements in life expectancy alongside declining fertility, consistent with the quantity–quality trade-off theory of demographic change (Becker & Lewis, 1973).

While population ageing represents a major public health achievement, it simultaneously intensifies longevity risk—the possibility that individuals outlive their economic resources and experience social isolation (Grundy, 2006). Older adults often face declining labor force participation, reduced income, and rising health care expenditures, which collectively heighten their economic vulnerability. Traditionally, vulnerability among older adults has been measured using objective indicators, including income, poverty status, asset ownership, and the capacity to meet basic needs. However, recent research emphasizes the importance of subjective economic vulnerability, which captures older adults’ own perceptions of financial adequacy and economic insecurity (Kapteyn et al., 1988; Litwin & Sapir, 2009). Subjective measures are crucial because they reveal “hidden vulnerability,” whereby individuals may feel economically insecure despite not being classified as poor by conventional standards.

Driven by the need for stronger policy foundations, the OECD (2024) has, since 2013, developed a multidimensional well-being measurement framework that incorporates perception-based indicators consisting of three components: life evaluation, which reflects individuals’ overall assessment of their lives; affective well-being, which captures feelings, emotions, and emotional states; and eudaimonia, which assesses psychological functioning, competence, and autonomy (Mahoney, 2023). Subjective well-being measures differ from traditional indicators because they are considered particularly effective in capturing the combined impact of various life events across multiple domains of overall well-being (Delhey & Kroll, 2012).

In developing countries such as Indonesia, formal social protection for older adults remains limited. Consequently, families—particularly adult children—serve as the primary source of economic, emotional, and caregiving support. This arrangement is commonly conceptualized within Intergenerational Solidarity Theory, which views family relationships as systems of mutual support grounded in affection, obligation, and shared norms (Bengtson & Roberts, 1991). Within this framework, co-residence and financial transfers are interpreted as expressions of altruism and familial responsibility that protect older adults from vulnerability. Thus, intergenerational relations within families function not only as channels of economic support but also as sources of emotional, caregiving, social, and cultural support (Antonucci et al., 2007). Family support constitutes a critical need for older adults (Monteiro et al., 2024), particularly as they experience physical and health-related changes that reduce their ability to care for themselves. Limitations in self-care capacity make older adults increasingly vulnerable to care needs in later life, as evidenced by their living arrangements. Older adults who live alone tend to face higher levels of vulnerability because they lack family members who can provide companionship and support. Tomassini et al. (2007) argue that changes in family structure, such as divorce or the death of a spouse, may increase vulnerability among older adults, as these events often lead to solitary living arrangements and reduced familial support.

Statistical data from the March 2024 Susenas indicate that the proportion of older adults living alone in Indonesia increases with age, thereby heightening the risk of unmet care needs. Despite this trend, the majority of older adults continue to reside in nuclear or three-generation households, reflecting the persistence of family-based support as the

primary care arrangement. Although only a small share of older adults live alone, this pattern is more prevalent among women and the oldest age groups, consistent with the feminization of ageing associated with longer life expectancy and higher rates of widowhood. As age advances, older adults increasingly transition from nuclear households to three-generation living arrangements or solitary residence, indicating rising care demands in later life. These patterns underscore the strong reliance of older Indonesians on family support while simultaneously revealing greater vulnerability among women and the oldest-old.

**Table 1.** Distribution of older adults by residential status

Characteristics	Residential status				
	Living alone	With partner	With the nuclear family	With three generations of family	Others
Indonesia	5.5	21.71	34.45	35.73	2.61
Gender					
Male	2.01	25.87	39.79	31.02	1.32
Female	8.69	17.9	29.57	40.05	3.8
Age group					
Young-old (60–69 years old)	3.62	21.34	40.18	32.92	1.95
Middle-old (70–79 years old)	8.37	24.33	24.91	39.34	3.04
Oldest-old (80+ years old)	9.96	15.84	23.49	44.63	6.07

*Source: Central Bureau of Statistics, National Socio-Economic Survey (Susenas), March 2024*

However, family support is not always purely altruistic. Economic theories of intergenerational exchange challenge the assumption that support flows are driven solely by norms of solidarity. Exchange Theory and the Strategic Bequest Motive argue that intergenerational transfers are often shaped by reciprocal incentives (Cox & Soldo, 2004; Bernheim et al., 1985; Geigl et al., 2023). Parents may offer the prospect of inheritance in exchange for care, co-residence, or financial assistance from adult children. From this perspective, intergenerational relationships reflect strategic behavior rather than unconditional solidarity. More specifically, Kohli and Künemund (2003) categorize these motives into four types: (1) family-related motives, (2) reciprocity motives, (3) normative obligations of parents toward children, and (4) exchange motives. These motives may be unconditional or conditional; transfers become conditional when parents expect compensation from their children in the form of financial support or caregiving time as they age. Additionally, non-economic motives grounded in normative family obligations frame caregiving for older parents as an expression of cultural and moral values (Tomassini et al., 2007).

The relationship between patterns of intergenerational transfers and protection programs for older adults can be better understood by first examining the structure and underlying rationales of these transfer patterns (Daly, 2018). Differences in the roles played by families and the state shape the design of social protection systems for older adults (Lee, 2020). When families face limitations, the state must assume a greater role through its programs (Jin et al., 2021; Zhang, 2024); conversely, when families provide substantial support, the burden on the state is reduced (Palma & Scott, 2018; Izuhara, 2018).

However, existing studies on vulnerability among older adults have not sufficiently emphasized these intergenerational dynamics. Older adults who receive unconditional

care from their children tend to be better protected. In contrast, relationships based on exchange motives may increase both economic and social vulnerability, particularly when older adults are no longer economically productive. By incorporating bequest motives as a central explanatory factor, this study provides novel evidence on how reciprocal exchange mechanisms shape intergenerational living arrangements and influence vulnerability among older adults in a developing-country context. The findings challenge the assumption that family support is purely altruistic and demonstrate that intergenerational solidarity is often embedded in strategic economic considerations.

Empirical evidence from high-income countries, including Norway, the United Kingdom, Germany, Spain, and Israel, suggests that bequest expectations influence children's involvement in parental care and living arrangements (Katz, 2009). However, evidence from developing countries, particularly in Southeast Asia, remains scarce. Moreover, existing studies rarely examine how bequest motives interact with subjective economic vulnerability, which reflects not only material conditions but also psychological perceptions of financial security.

At the same time, vulnerability among older adults is inherently multidimensional. Physical and psychological health strongly shape how older adults experience and interpret their economic circumstances. Poor health can reduce functional independence, increase care needs, and intensify perceived financial insecurity (Bloom et al., 2010). Yet most prior studies treat health, intergenerational support, and economic vulnerability as separate phenomena rather than modeling their interdependence within a unified analytical framework.

This study addresses these gaps by developing an integrated theoretical and empirical model that combines Intergenerational Solidarity Theory with the bequest motive perspective. Using data from the Indonesia Family Life Survey (IFLS-5) and a bivariate probit framework, the study explicitly accounts for endogeneity between co-residence and subjective economic vulnerability while simultaneously examining two forms of subjective vulnerability: self-assessed and perceived economic vulnerability.

This research contributes to the literature on population ageing, family economics, and social policy by offering a more nuanced understanding of how health, family dynamics, and economic incentives jointly shape subjective vulnerability among older adults. The findings also carry important policy implications, highlighting the need to complement family-based support systems with stronger formal social protection to ensure economic security in Indonesia's rapidly ageing society.

## **METHODS**

We use data from the fifth wave of the Indonesia Family Life Survey (IFLS-5), conducted in 2014 (<https://www.rand.org/health/surveys/FLS/IFLS.html>), to address the objectives of this study. The IFLS provides comprehensive information on a wide range of issues, including intergenerational relationships, making it particularly well-suited to this analysis. The first step in the data preparation process was to exclude all respondents under 60 years of age. The analytical sample, therefore, consists of individuals aged 60 and above, who are classified into three age groups: 60–69 years (“young-old”), 70–79 years (“middle-old”), and 80 years and above (“oldest-old”).

Vulnerability among older adults is operationalized using indicators of subjective economic vulnerability, consisting of a self-assessed measure and a perceived measure (Henke, 2020). These measures follow the OECD framework (Mahoney, 2023), which conceptualizes subjective well-being as three dimensions: life evaluation, affect, and

eudaimonia. The self-assessed measure is derived from survey questions evaluating older adults' ability to meet their needs based on their current income. Responses are recorded on a four-point scale and subsequently used to classify levels of vulnerability. Older adults are categorized as vulnerable if they report that meeting their needs is "very difficult" or "difficult," and as not vulnerable if they report that it is "easy" or "very easy."

In contrast, the perceived measure of vulnerability captures the emotional dimension, specifically the extent to which older adults worry about not having sufficient financial resources to meet their current needs. This measure is assessed using a graded worry scale (Henke, 2020), and responses determine vulnerability status. Older adults are classified as vulnerable if they report being "very worried" or "worried," and as not vulnerable if they report being "not worried" or "not worried at all." For analytical purposes and ease of interpretation, both measures of subjective economic vulnerability are converted into binary variables (1 = vulnerable; 0 = not vulnerable).

This study employs indicators of structural and functional solidarity to measure intergenerational relationships (Bengtson & Roberts, 1991). All indicators are treated as dichotomous variables. Binary indicators are used to reflect threshold-based vulnerability and to ensure consistency with the bivariate probit framework. The cut-off points follow established IFLS conventions. Conceptually, subjective economic vulnerability is defined as a threshold condition: whether older adults perceive themselves as vulnerable. To maintain conceptual consistency, key explanatory variables (e.g., health status, psychological well-being, intergenerational solidarity, and other control variables) are operationalized similarly, distinguishing between "healthy" and "unhealthy" and between "psychologically stable" and "at risk." This approach is consistent with prior studies that conceptualize vulnerability as a binary outcome.

The functional solidarity dimension refers to the flow of assistance and exchanges among family members, whether monetary or non-monetary. This perspective aligns with Becker's argument in *The Theory of Inequality and Intergenerational Mobility* (Becker & Tomes, 1979), which posits that households seek to maximize intergenerational utility. Individuals are not isolated units but are connected to relatives across generations, resulting in family contributions that enhance intergenerational well-being and sustain generational continuity. Becker (1974) further argues that intergenerational solidarity is not determined by gender or age but by the degree of care among family members. In this study, functional solidarity is measured using survey items indicating whether older adults receive financial assistance from their children (1 = yes; 0 = no) and whether parents intend to leave a bequest to their children (1 = yes; 0 = no).

Structural solidarity refers to the number and types of family members, as well as their physical proximity to one another. In this study, it is operationalized using a survey question indicating whether the respondent currently co-resides with an adult child (1 = yes; 0 = no).

The analytical model employed in this study is a bivariate probit model. This model is appropriate because it consists of two probit equations, with the first including a binary endogenous variable (Greene, 2012). Potential endogeneity may arise between vulnerability among older adults and intergenerational relationship variables, as these constructs are likely jointly determined and influenced by unobserved exogenous factors, particularly motives for intergenerational solidarity (Kohli & Künemund, 2003; Swartz, 2009). Intergenerational solidarity may also be driven by exchange-based motives, in which parents intend to bequeath assets in exchange for future caregiving, while children

provide care in exchange for future financial transfers (Bernheim et al., 1985; Cox & Soldo, 2004).

**Table 2.** Operational definition of variables

Variable	Definition	Unit
Dependent Variables (Subjective Economic Vulnerability)		
sa_ev	Self-assessed vulnerability (1 = vulnerable; 0 = not vulnerable)	Binary
perc_ev	Perceived vulnerability (1 = vulnerable; 0 = not vulnerable)	Binary
Independent Variables (Intergenerational Solidarity and Health Status)		
health_stat	Self-assessed health status (1 = good; 0 = poor)	Binary
psi_stat	Psychological stability/mental condition (1 = good; 0 = poor)	Binary
live_with_children	Co-residence with adult children (1 = yes; 0 = no)	Binary
receive_from_children	Receiving financial assistance from children (1 = yes; 0 = no)	Binary
leave_bequest	Intention to leave a bequest to children (1 = yes; 0 = no)	Binary
Socio-economic and Demographic Variables		
sex	Male = 1; Female = 0	Binary
age_group	60–69 = young-old; 70–79 = middle-old; ≥80 = oldest-old	Categorical
mar_stat	1 = not married; 2 = married; 3 = separated or widowed	Categorical
pension	Receiving a pension (1 = yes; 0 = no)	Binary
urban	Residence in urban area (1 = urban; 0 = rural)	Binary

## RESULTS AND DISCUSSION

### Descriptive statistics

Intergenerational solidarity is measured using two indicators: whether older adults live with their children and whether they intend to leave a bequest to their children. The empirical evidence presented in Table 3 reveals a distinct pattern in the Indonesian context. Older adults—particularly those in more advanced age groups—are increasingly less likely to co-reside with their children. The proportion of co-residence declines with age, which may contribute to greater vulnerability among the oldest-old.

**Table 3.** Household living status by age group of older adults

Age Group (years)	Living Independently		Co-residing with Adult Children		Total	
	Freq.	%	Freq.	%	Freq.	%
60–69	3,096	86.43	486	13.57	3,582	57.35
70–79	1,621	86.27	258	13.73	1,879	30.08
80+	683	87.00	102	13.00	785	12.57
Total	5,400	100.00	846	100.00	6,246	100.00

Table 4 presents descriptive statistics for all variables used in this study, based on a sample of 6,246 older respondents. Vulnerability among older adults is measured across two dimensions of subjective economic vulnerability: a self-assessed measure and a perceived measure. The mean value of the self-assessed measure is 0.731, indicating that, under this indicator (which approaches 1 as vulnerability increases), older adults generally perceive themselves as economically vulnerable. In contrast, the mean value of the perceived measure is 0.098, suggesting that, based on this emotion-based (worry) assessment, older adults generally do not perceive themselves as economically vulnerable.

This discrepancy suggests that perceived vulnerability does not always correspond to direct experiences of adverse economic conditions. Several studies indicate that older adults often adopt very low reference standards when evaluating their own economic vulnerability, meaning that their benchmarks may fall below appropriate normative levels. As a result, the perceived measure of vulnerability may be downwardly biased, reinforcing the subjective bias among older adults, who tend to underestimate their economic needs.

**Table 4.** Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Vulnerability					
sa_ev	6246	0.731	0.444	0	1
perc_ev	6246	0.098	0.297	0	1
Intergenerational Solidarity					
live_with_children	6246	0.135	0.342	0	1
leave_bequest	6246	0.152	0.359	0	1
Health Status					
health_stat	6246	0.778	0.415	0	1
psi_stat	6246	0.499	0.500	0	1
Older Adult Characteristics					
pension	6246	0.014	0.120	0	1
urban	6246	0.628	0.483	0	1
mar_stat	6246	2.431	0.515	1	3
sex	6246	0.450	0.497	0	1
educ	6246	4.360	4.492	0	22
age	6246	69.51	8.064	60	112

Intergenerational solidarity is thus captured through two indicators: co-residence with children and the intention to leave a bequest. The survey results show that only a small proportion of older adults live with their children (mean = 0.135), and a similarly small share reports intentions to leave a bequest (mean = 0.152). Intergenerational solidarity may also operate in the opposite direction—from parents to children. According

to Caldwell (2006), intergenerational exchanges are bidirectional, occurring both from children to parents and from parents to children.

In this study, upward transfers from children to parents are reflected in the implicit caregiving guaranteed by co-residence, while downward transfers from parents to children take the form of intended bequests. These exchanges are not random but are often shaped by underlying incentives. The data indicate that 15.2 percent of older adults intend to leave a bequest to their children, whereas the proportion of children who co-reside with their parents remains relatively low.

Health status is measured using respondents' self-assessments of their physical condition at the time of the survey, categorized as very healthy, healthy, less healthy, or unhealthy. These categories are recoded into a binary variable: healthy (very healthy or healthy) and unhealthy (less healthy or unhealthy). The mean physical health score is 0.778, indicating that most older adults perceive themselves as physically healthy.

Psychological health is assessed using ten indicators, including feelings of irritation over minor matters, difficulty concentrating, feelings of pressure, the perception that tasks require substantial effort, optimism about the future, fear, sleep difficulties, happiness, loneliness, and fear of initiating activities. The mean psychological health score is 0.499, indicating a relatively even distribution and substantially lower well-being compared with physical health. This finding underscores the importance of addressing mental health as an integral component of overall well-being among older adults.

### **Bivariate probit estimation results**

This study employs two bivariate probit models to analyze vulnerability among older adults within the framework of subjective economic well-being. The first equation assesses the effects of intergenerational relationships and health on self-assessed economic vulnerability, while the second equation evaluates the effects of these same factors on perceived vulnerability. The bivariate probit model is applied under the assumption of potential endogeneity among the explanatory variables. In particular, the intergenerational relationship variable—specifically, co-residence with children—is suspected to be endogenous due to underlying motives. For children, the decision to live with an older parent may be influenced by the prospect of receiving an inheritance as well as by the parent's health condition.

The Wald test of the correlation parameter ( $\rho$ ) indicates a statistically significant correlation between the error terms of the co-residence equation and the subjective economic vulnerability equation. This finding suggests the presence of unobserved factors—such as family norms, interpersonal dynamics, or latent socio-economic characteristics—that simultaneously influence both living arrangements and older adults' perceived economic vulnerability. The Wald test for  $\rho$  is statistically significant, confirming endogeneity and indicating that estimating these relationships with separate probit models would yield biased and inconsistent coefficients. By employing a bivariate probit framework, this study explicitly accounts for the correlated error structure, thereby ensuring more reliable parameter estimates. Consequently, the estimated effects of intergenerational co-residence, health conditions, and bequest motives on subjective economic vulnerability can be interpreted with greater confidence.

The estimation results of the first bivariate probit model show that both physical and psychological health are key determinants of subjective economic vulnerability across both measures—self-assessed and perceived vulnerability. The variable *health\_stat* has a positive and statistically significant effect on the likelihood of experiencing self-assessed vulnerability (*sa\_ev*) ( $\beta = 0.722$ ;  $p < 0.01$ ) as well as on

perceived vulnerability (*perc\_ev*) ( $\beta = 1.614$ ;  $p < 0.01$ ).

**Table 5.** Bivariate probit estimation results

Variables	coeff		
	<i>sa_ev</i>	<i>perc_ev</i>	live with children
<i>psi_stat</i>	0.0810** (0.0348)	0.0343 (0.0403)	-0.100* (0.0514)
<i>health_stat</i>	0.722*** (0.0394)	1.614*** (0.0425)	-0.0185 (0.0615)
<i>live_with_children</i>	0.192** (0.0910)	0.197* (0.109)	
<i>receive_from_children</i>	-0.160** (0.0718)	-0.127 (0.0842)	
<i>pension</i>	-0.110 (0.148)	0.257 (0.189)	0.268* (0.142)
<i>leave_bequest</i>			2.252*** (0.0541)
<i>sex</i>			
male	-0.0124 (0.0393)	-0.0354 (0.0457)	
<i>mar_stat</i>			
married	-0.252 (0.191)	-0.321 (0.227)	
separate	-0.208 (0.191)	-0.264 (0.227)	
<i>urban</i>	-0.0693* (0.0362)	0.00601 (0.0418)	
<i>age_group</i>			
70-79	-0.0137 (0.0397)	-0.0389 (0.0459)	
>80	0.0882 (0.0569)	0.0725 (0.0661)	
Constant	0.302 (0.194)	-0.0318 (0.229)	-1.728*** (0.0613)
Observations	6,246	6,246	
<i>athrho</i>	-0.0158 (0.0537)	0.0144 (0.0661)	

Wald test of  $\rho=0$ :  $\chi^2(1) = 2179.40$

Prob >  $\chi^2 = 0.0000$

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

Furthermore, the variable *psi\_stat*, representing psychological condition, exhibits a positive and significant effect on self-assessed vulnerability (*sa\_ev*) ( $\beta = 0.081$ ;  $p < 0.05$ ). Older adults with more stable psychological conditions tend to report lower levels of vulnerability. Regarding co-residence, physical health does not show a statistically significant relationship. However, psychological status (*psi\_stat*) negatively affects the likelihood of co-residing with children ( $\beta = -0.100$ ;  $p < 0.10$ ), indicating that older adults with better psychological well-being are more likely to choose independent living arrangements. This finding indirectly suggests that the decision to live with adult children may be driven more by financial considerations than by health-related needs.

Intergenerational relationships exhibit an ambivalent influence. The variable *live\_with\_children* has a positive and significant effect on self-assessed vulnerability ( $\beta$

= 0.192;  $p < 0.05$ ) and a positive effect on perceived vulnerability ( $\beta = 0.197$ ;  $p < 0.10$ ). These results suggest that co-residing with adult children may increase the probability of experiencing subjective economic vulnerability, even though such arrangements are typically associated with emotional support and enhanced well-being. In contrast, *receive\_from\_children* shows a statistically significant negative effect on self-assessed vulnerability ( $\beta = -0.160$ ;  $p < 0.05$ ). Thus, the more frequently older adults receive financial assistance from their children, the lower their likelihood of being classified as vulnerable.

Control variables such as gender, marital status, and age group do not exhibit statistically significant effects on either measure of subjective vulnerability, indicating that basic demographic characteristics are not strong determinants in this context. Older adults residing in urban areas have a slightly higher probability of reporting vulnerability based on self-assessment ( $\beta = -0.069$ ;  $p < 0.10$ ), which may reflect weaker community ties compared to rural areas.

The findings further indicate that co-residence with adult children is associated with a higher probability of vulnerability among older adults. Meanwhile, the intention to leave a bequest (*leave\_bequest*) exerts a strong and statistically significant positive effect on the likelihood of co-residing with children ( $\beta = 2.252$ ;  $p < 0.01$ ), suggesting that bequest motives foster closer intergenerational proximity.

Pension status does not significantly affect subjective vulnerability, although it increases the likelihood of co-residence ( $\beta = 0.268$ ;  $p < 0.10$ ). Relative to financial transfers from children—which significantly reduce vulnerability—these results highlight that intergenerational relationships are partly structured by economic incentives that shape vulnerability outcomes among older adults.

## Discussion

Although better physical health is generally expected to reduce vulnerability, as shown in previous studies (Muis et al., 2020; Tomassini et al., 2007), our results indicate a positive association between health status and subjective economic vulnerability. This counterintuitive finding may reflect an adaptation effect, in which healthier older adults maintain higher expectations for economic security. Moreover, self-rated health captures subjective perceptions rather than objective medical conditions, which may shape financial self-assessments. Survivorship bias may also contribute to this pattern, as healthier individuals anticipate longer life expectancy and therefore express greater concern about the adequacy of their economic resources. In addition, children may perceive healthier older adults as less in need of care. Given that intergenerational relationships significantly influence older adults' vulnerability, those living in extended family arrangements may receive greater social support, which, in turn, can reduce vulnerability (Melchiorre et al., 2013).

Intergenerational solidarity variables—particularly whether adult children accept co-residence with their older parents—are likely influenced by multiple factors rather than operating independently of one another. According to Zimmer & Kwong (2003), support within intergenerational relationships may take two primary forms: economic assistance and health or caregiving support. The provision of such support depends on several considerations, including well-being, age, gender, place of residence, and health status. Vulnerability among older adults arises when they lack financial security in later life and when health limitations reduce their capacity for independent living, thereby increasing reliance on immediate family members.

Intergenerational solidarity demonstrates dual and context-dependent effects.

While co-residence with children can provide emotional and social support, it is also associated with higher economic vulnerability. This suggests that living with children may reflect financial necessity rather than personal preference, potentially diminishing older adults' sense of autonomy. Although intergenerational co-residence is often interpreted as limiting autonomy, the association may also reflect reverse causality, in which economically vulnerable individuals are more likely to live with their children due to financial constraints or limited housing options. Furthermore, unobserved factors—such as persistent poverty, family dependency norms, and cumulative socio-economic disadvantage—may simultaneously shape both living arrangements and perceived vulnerability.

In contrast, direct financial transfers from children significantly reduce vulnerability, reinforcing the view that material support plays a more decisive role than relational proximity in mitigating subjective economic vulnerability. This finding differs from previous studies that emphasize the protective role of extended-family living arrangements, which associate co-residence with stronger social support and lower vulnerability (Melchiorre et al., 2013). Meanwhile, the proportion of parents intending to leave an inheritance remains relatively small. As Kohli and Künemund (2003) argue, conditional motives frequently underpin intergenerational relationships: parents may choose to co-reside with their children because the latter anticipate future inheritance.

The strong positive effect of bequest intentions on co-residence underscores the presence of reciprocal exchange mechanisms within families. Older adults who plan to leave inheritances are significantly more likely to live with their children, suggesting that intergenerational solidarity in Indonesia is not purely altruistic but partly shaped by strategic considerations. These findings are consistent with those of Johar & Maruyama (2011) and von Humboldt et al. (2018), who contend that intergenerational solidarity is often influenced by the benefits children expect to receive from their parents. Consequently, older adults facing both health and economic challenges may be at greater risk of receiving limited support from their children than those with financial resources that contribute to their children's welfare. This dynamic sharpens the concept of reciprocity and further clarifies the evolving nature of reciprocal relationships over time (Vandervan, 2004).

Basic demographic characteristics do not emerge as strong determinants in this study. This result aligns with prior research suggesting that demographic traits do not significantly shape intergenerational solidarity. Tomassini et al. (2007) emphasize that in countries with strong family-oriented cultures, such as Italy, intergenerational solidarity tends to operate independently of older adults' demographic characteristics. Similarly, Becker (1974) argues that intergenerational relationships are driven primarily by care and concern among family members, regardless of gender or age.

Overall, the findings highlight that a delicate balance among health, intergenerational solidarity, and autonomy shapes vulnerability among older adults in Indonesia. While family support remains essential in contexts where formal social protection is limited, excessive dependence may inadvertently intensify vulnerability by constraining independence and diminishing self-worth.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

The findings indicate that the average level of self-assessed vulnerability is substantially higher than that of perceived vulnerability, reinforcing the subjective bias

argument, whereby older adults tend to adopt lower thresholds when evaluating their economic needs. Intergenerational relationships exert a dual influence on older adults' vulnerability. While co-residence with children may provide social and emotional benefits, high levels of economic dependence may reduce older adults' sense of autonomy. This underscores the importance of balancing family support with independence to preserve overall quality of life.

The significant positive effect of leave\_bequest on the likelihood of co-residence further illustrates the presence of reciprocal motives within intergenerational relationships. The intention to leave assets strengthens family proximity, and the probability of living with children increases substantially when older adults plan to bequeath an inheritance. This finding suggests the operation of a reciprocal exchange mechanism that reinforces multigenerational cohabitation.

Physical and psychological health emerge as the strongest determinants of subjective economic vulnerability. Older adults in better health tend to maintain greater independence and more positive life evaluations. Overall, vulnerability among older adults in Indonesia is shaped by the interaction among health status, intergenerational support, and social autonomy.

### **Recommendations**

The findings offer several important policy implications. First, by formally recognizing reciprocal caregiving arrangements, local governments could develop certification or registration schemes for families providing long-term care for older adults. Such schemes could link informal family support to formal benefits, including health insurance subsidies or caregiving allowances.

Second, programs aimed at reducing vulnerability among older adults should extend beyond economic assistance to incorporate interventions that improve physical health and psychological well-being. Community-based activities, exercise initiatives, and counseling services could enhance both well-being and the quality of intergenerational relationships.

Third, the government may consider providing tax incentives or legal facilitation for asset transfers—such as simplified inheritance procedures or reduced inheritance taxes—for families actively engaged in caring for older parents. At the same time, strengthening social security and pension systems remains essential to alleviating the financial burden on households and reducing excessive dependence on family-based support.

Fourth, social policies should promote environments that encourage intergenerational interaction without fostering dependency. This highlights the continued importance of strengthening community-based care programs and senior activity initiatives, particularly in contexts where formal social protection systems remain limited or insufficiently implemented.

### **AUTHOR CONTRIBUTIONS**

Conceptualization: Novya Zulva Riani, Idris

Methodology: Novya Zulva Riani

Software: Yeniwati

Validation: Novya Zulva Riani, Idris

Formal Analysis: Novya Zulva Riani

Investigation: Novya Zulva Riani, Yeniwati

Resources: Novya Zulva Riani, Idris

Data Curation: Yeniwati  
Writing – Original Draft: Novya Zulva Riani  
Writing – Review & Editing: Idris, Yeniwati  
Visualization: Yeniwati  
Supervision: Idris  
Project Administration: Novya Zulva Riani  
Funding Acquisition: Idris

### CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this paper.

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