

Highlight

Co-residence is an important source of support for the elderly, especially in countries where pension systems do not cover most of the population. This note provides new evidence regarding elderly co-residence patterns in more than 100 developing countries that represent over 90 percent of the developing world population. We find a wide range of co-residence rates across countries, ranging from 29 to nearly 100 percent, and a strong inverse relationship between the receipt of a pension and co-residence.

The results show the importance of informal support, and have implications for the choice and design of policy instruments aimed at the elderly, including social insurance and assistance.

An Examination of Elderly Co-residence in the Developing World^{1, 2}

Brooks Evans and Robert Palacios

Overview

The co-residence rate, is defined here as the percentage of elderly living with non-elderly members in a household. In this study elderly are defined as age 60 and above, working age is 15–59, and youth is 0–14.³ Co-residence often plays a major source of informal family support, and is therefore an important consideration for policymakers designing social programs, particularly where pension and social safety net coverage is limited. Patterns of co-residence have been the subject of considerable research, particularly in richer countries. Multiple generation households were common in the United States at the turn of the century (Costa 1998). But as shown in Figure 1 below, co-residence rates have fallen throughout the century.⁴

Costa cites rising incomes of the elderly as the major cause of declining co-residence. Using detailed survey data for Civil War pensioners, she estimates that the income effect may explain as much as 86 percent of the decline in co-residence rates between 1910 and 1940.⁵ This supports the interpretation that affordability of separate housing, for example, rather than changing social preferences for co-residence explains observed changes, at least in the US case. More simply, elderly can afford to live alone. Other evidence suggests that the elasticity of co-residence to income changes has been reduced in more recent decades (Borsch-Supan et al. 1992; Pal 2006).

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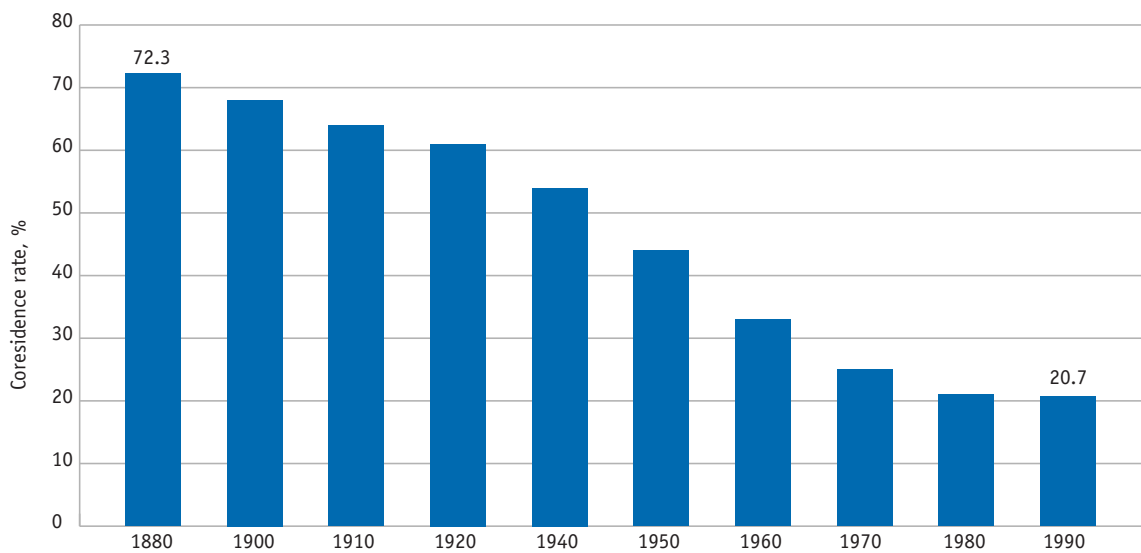
² Citation guideline: Evans, B. and Palacios, R. 2015. "An examination of elderly co-residence in the developing world". World Bank. Washington D.C. JEL Codes: D040, D600, H550, O150, O2.

³ Additional research can investigate co-residence changes over time, correlates, and differing definitions of co-residence, such as elderly living with working age, as well as spouses that may be non-elderly.

⁴ Schoeni (1998) qualifies these figures however, suggesting that a different measure — life-years spent in co-residence — is superior because it takes into account changes in life expectancy throughout the century. Using this measure, most of the decline takes place between 1940 and 1990.

⁵ This finding is based on an econometric analysis of Union and Confederate veterans using pension income as one of the explanatory variables in a probit analysis.



Figure 1: Percentage of 65+ year old US males living with family, 1880–1990

Source: Costa (1998)

Similarly, a cross-country study by Galasso et al. (2008) suggests that greater pension generosity and financial sector development may lower co-residence. Iacovou (2000) finds that for older European women, higher levels of income are related to a higher probability of living alone. Women with a limiting health problem are less likely to live alone in countries where social spending is relatively low, while women who have had more children are less likely to live alone in countries where residential mobility is high.

There is some evidence that cultural preferences can also have an impact on co-residence rates. Cameron (2000) finds in Indonesia that the earnings of parents and their children have little effect on residency decisions. In explaining high co-residence rates in Singapore, Chan (1998) describes tax incentives and housing subsidies provided to children that live with their parents. These incentives are justified on the basis of cultural or moral values encouraged by the government. In contrast, Laslett (1985) presents data showing relative high rates of living alone among the elderly in England in the 18th century, possibly due to cultural norms.

Another factor likely to drive co-residence rates other than income is the cost of housing. This may explain high co-residence rates in highly urbanized and expensive environments such as Singapore and Japan compared to other high income countries. Clearly, there are multiple factors at play, and they are difficult to disentangle.

Migration is another important factor. In China, many elderly people that would normally have co-resided with their children do not co-reside for reasons such as it would be too costly to move to the cities where they are working as migrant laborers. This story also plays out in countries where a large part of the labor force is working abroad or very far from their

parents. An interesting twist on the link between co-residence and migration is the case of South Africa. Edmonds et al. (2005) find that large transfers to South African elderly have allowed prime working age women to seek job opportunities that take them away from the household, thereby reducing co-residence.

A caveat regarding observed co-residence rate is that it does not tell us about the distance between the households with the elderly and their children. Many Asian households, for example, have separate apartments for each generation but live in the same building. Distance affects the nature and amount of non-financial support. On the other hand, co-residence alone does not tell us about differences in intra-household allocation of resources and how these vary across countries or households within the same country (Pal 2005). We return to this point below.

In sum, the limited evidence suggests that multiple factors influence co-residence rates including economic, culture, and migration. We also note that not all co-residence is equivalent in terms of informal support for the elderly. That said, there is some evidence that higher elderly incomes tends to lead to the choice for living separately. The next section provides even stronger evidence of this pattern.

⁶ The data sources utilized are ASPIRE and I2D2. All surveys are the latest year available and 2000 and the majority 2005 or more recent. The Marshall Islands is the one exception (1999).

⁷ Evans, B. 2015. "Using Household Surveys for Age-Based Poverty, Pensions, Labor and Social Assistance Analysis". World Bank. Washington D.C.

Data and methodology

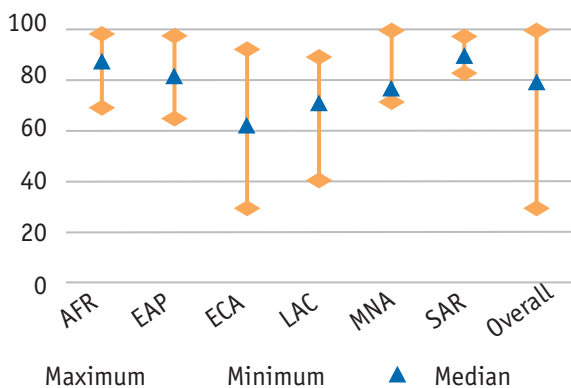
Our analysis uses household surveys from 107 countries in all developing country regions. The survey data has been harmonized across countries as well as regions to have comparable variable definitions and coding. There is some variation in the survey design that may have implications on interpretation of analysis. Not all survey instruments are the same, though are similar in most regards.^{6,7}

There are millions observations in the collective sample. The number of countries for the regions is as follows: Sub-Saharan Africa (AFR) — 35 countries, East Asia and the Pacific (EAP) — 17 countries, Eastern Europe and Central Asia (ECA) — 16 countries, Latin America and Caribbean (LAC) — 22 countries, Middle East and Northern Africa (MNA) — 9 countries, South Asia (SAR) — 8 countries. The countries in the sample is representative of approximately 75 percent of the global and 90 percent of the developing world population.⁸ Co-residence rates for each country are available at www.worldbank.org/pensions and www.worldbank.org/aspire.

Results and Implications

The average co-residence rate of the 107 developing countries included here is 78.5% and there is wide variation across countries. Regionally, SAR has the highest average at 89.8%, followed by AFR at 86.5%. EAP and MNA also have high averages at 82.7% and 80.0% respectively. The lowest regional average is ECA at 61.2% followed by LAC at 70.5%. The dispersion of values is lowest in SAR and AFR at 14.5% and 29.2%, and widest in ECA and LAC at 62.7% and 48.6% respectively (Figure 2).

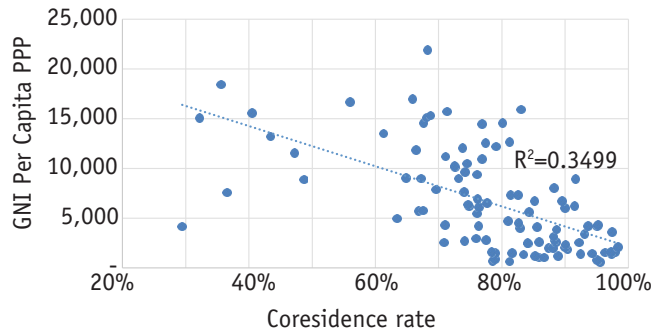
Figure 2: Co-residence rate by region



Source: Authors' calculations based on sample countries.

As can be seen in Figure 3, over one-third of the variation across countries is explained by the level of income.

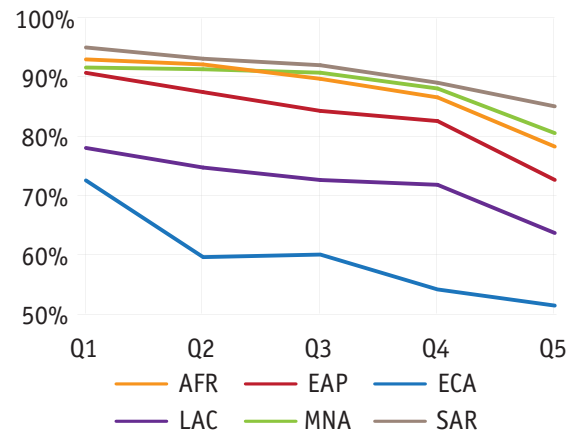
Figure 3: Co-residence rate and national income per capita



Source: Authors' calculations based on ASPIRE and World Development Indicators. GNI per capita in 2010 PPP current international \$

This helps explain why the range in the ECA is so wide. The region has a huge range of income levels from \$2,040 in Tajikistan, where co-residence is 89.9% to \$18,440 in Croatia with co-residence dropping sharply to 35.6%.

Figure 4: Elderly co-residence rates by region and quintile



Source: Authors' calculations based on regional averages of sample countries.

Co-residence rates within countries are also correlated to the income or expenditure per capita levels of individuals. Figure 4 shows that co-residence rates decrease as we move from lower to higher income/expenditure households, with a 15 percentage point difference between the poorest and richest quintile.⁹ One implication of this pattern is that in low income countries, an effectively targeted social assistance program will cover most of the poor elderly since these households are very likely to have co-resident elderly. In other words, poor individuals of different generations tend to live in the same households in poorer countries.

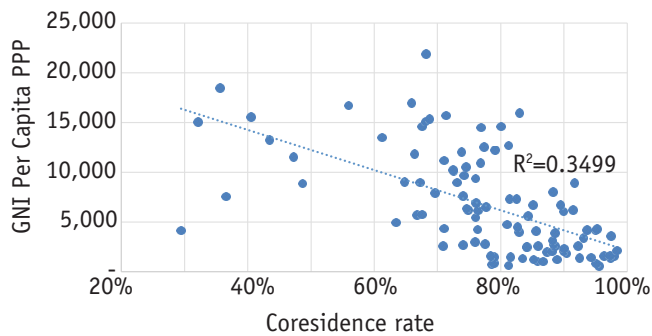
⁸ Population data from data.worldbank.org for 2010.

⁹ Q1 refers to the poorest 20% and Q5 the richest 20%.

Co-residence rates are inversely correlated to pension income. Figure 5 shows the percentage of pensioners co-residing against the percentage of non-pensioners co-residing by country. Only 56% of pensioners co-reside while 82% of elderly not receiving a pension co-reside, a difference of 26 percentage points. As shown in the figure, in only 12 of the 54 countries with pension receipt data is co-residence higher for recipients than non-recipients. Nearly all of these 11 countries are lower income. Mauritius, which has universal pensions, is the outlier on the upper left corner, whereas pensions appear to have a push factor in higher income countries.

Since there is a positive correlation between pension income and overall income, we ran regressions where these two variables were isolated. The results suggest that the pension effect is significant apart from the effect of overall income per capita in countries where there are significant levels of elderly living apart. This suggests that co-residence rates are influenced by the incomes directly received by the elderly.

Figure 5: Co-residence is lower for pensioners



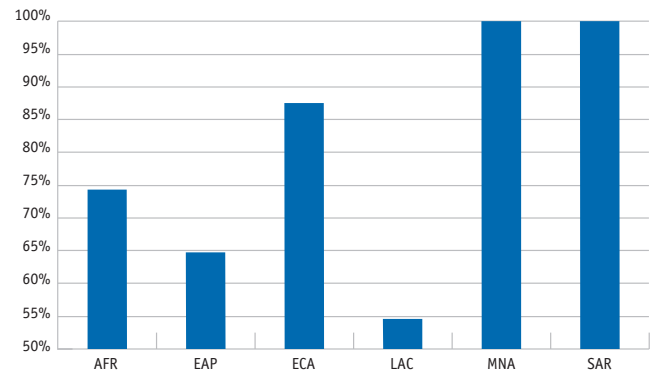
Source: Authors' calculations based on ASPIRE

Men in developing countries are more likely to co-reside than women, 80% as compared to 77%. The difference is likely explained partially by average life expectancies of men lower than women, and men more likely to marry a younger spouse, which result in a larger percentage of elderly female widows. In MNA and SAR, male co-residence is greater than females in 100% of the countries in the sample, 88% in ECA, and LAC at 55% is closest to gender parity (Figure 6).

While seemingly counterintuitive, younger elderly (60-74) were more likely to co-reside more than older elderly (75+) in all but 12% of countries. Reasons may include longevity bias of those that can afford to live on their own, as well as sampling design where few elderly-only and older elderly households may be sampled. Unsurprisingly, those that have lost their spouse have a co-residence rate 7 percentage points greater than non-widows, and this pattern holds in over half of the countries.

¹⁰ Again note that there are only two MNA countries, and so it is not possible to generalize for the region based on these.

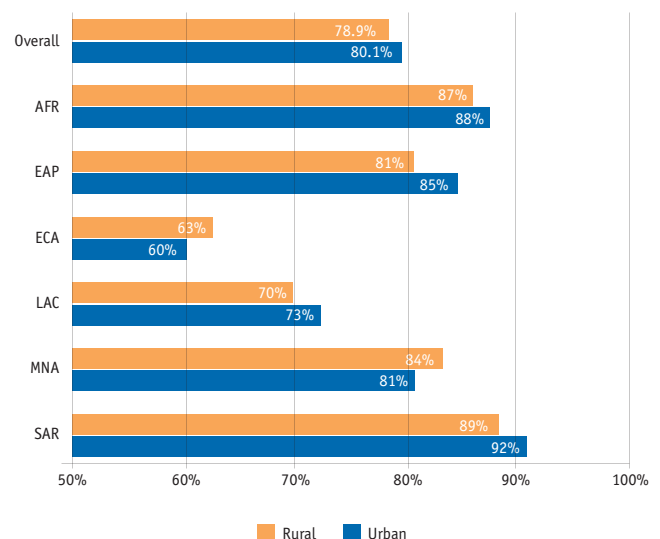
Figure 6: Share of countries in region male co-residence higher



Source: Authors' calculations based on ASPIRE

In-line with past studies, co-residence is on average more common in urban areas, though there is clear regional variation (Figure 7). Reasons for such a phenomena include that living costs are higher in urban areas, and so elderly cannot afford to live alone, as well as possible migration of elderly to live with their working offspring. In SAR co-residence is higher in urban areas compared to rural areas in all sample countries, followed by EAP at 92%, LAC and AFR at 60% and 58%, and on the low-end of the spectrum 47% in ECA and 38% in MNA.¹⁰ The low ECA and MNA co-residence in urban compared to rural areas is striking, and while conjuncture, could possibly be explained by a migration bias of offspring to urban areas, where education and information advantages tend to be greater than rural areas.

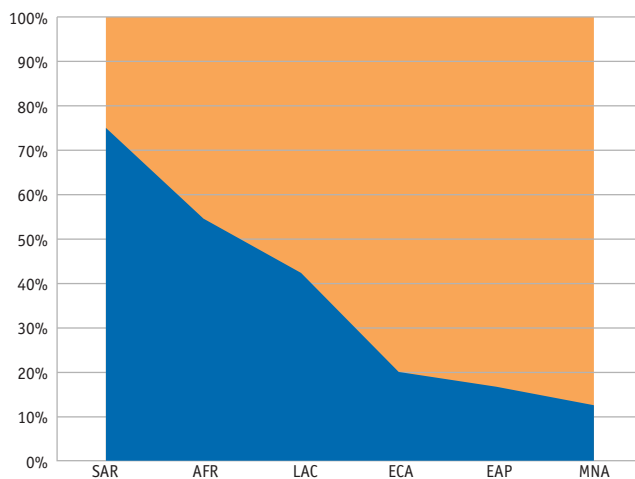
Figure 7: Co-residence in rural and urban areas by region



Source: Authors' calculations based on ASPIRE

While it would be expected for unemployed elderly to co-reside in most countries, as can be seen in Figure 8, this is clearly not a trend that holds across regions. Assuming that work income is the only source of income, it could be anticipated that unemployed elderly would not be able to afford living alone. In SAR (75%) and AFR (55%) we can see that unemployed elderly are more likely than employed to co-reside. In sharp contrast, in EAP, ECA, and MNA 80 percent or more of the sample countries, employed elderly are more likely to live with non-elderly than unemployed. Employment in some of these countries could have a pull-effect on non-elderly. Cultural norms of family support could help explain the high co-residence rates in SAR.

Figure 8: Share of countries by region where co-residence greater for unemployed elderly



Source: Authors' calculations based on I2D2

Conclusions and Direction for Future Research

This note documents a wide range of elderly co-residence rates across countries. These rates are found to be inversely correlated to country income levels. Within countries, co-residence is also closely related to household welfare measures with poorer households exhibiting higher co-residence rates. Also noteworthy is the fact that elderly-only households tend to have higher incomes/expenditures, especially in poorer countries.

These results have implications for pension and social assistance system design and policy choices. For example, co-residence patterns should be taken into account in the ongoing discussion regarding the appropriate role for non-contributory or 'social pensions' versus non age based social assistance. High co-residence rates imply that well-targeted social assistance programs will also address poverty among the elderly. High co-residence rates also imply potential overlap between programs and their beneficiaries. There is also some evidence that pension income could affect co-residence rates and intra-household allocation of resources.

While income levels within and across countries explain a share of the variation in co-residence rates, there are clearly other factors at work. Future research may use available data to investigate other drivers such as land and housing ownership and health status. Changes over time can also be analyzed.

The data available in these surveys does not provide information on intra-household allocation of resources. This important aspect of co-residence would require special surveys. A recent example is the impact analysis of a social pension program conducted by Rand (2013) for Mexico. This and other studies that allow for detailed accounting of intra-household distribution of resources would help improve our understanding of the nature of co-residence across and within countries.

Select Co-residence Rates by Gender

Sub-Saharan Africa	Male	Female
Angola	80%	69%
Benin	84%	70%
Botswana	72%	81%
Burkina Faso	96%	93%
Cabo Verde	85%	86%
Cameroon	87%	81%
Chad	95%	85%
Comoros	94%	91%
Congo, Dem. Rep.	86%	76%
Congo, Rep.	88%	83%
Cote D'Ivoire	88%	89%
Djibouti	96%	93%
Ethiopia	94%	82%
Gabon	75%	78%
Gambia, The	98%	98%
Ghana	76%	76%
Kenya	87%	82%
Lesotho	87%	85%
Liberia	96%	95%
Madagascar	89%	84%
Malawi	80%	77%
Mali	97%	95%
Mauritania	95%	89%
Mauritius	74%	65%
Mozambique	85%	73%
Niger	97%	93%
Nigeria	91%	78%
Rwanda	92%	87%
Sao Tome and Principe	69%	79%
Senegal	98%	99%
Sierra Leone	97%	98%
Swaziland	90%	92%
Tanzania	90%	87%
Uganda	88%	86%
Zambia	91%	87%

East Asia & the Pacific	Male	Female
Cambodia	91%	89%
China	67%	63%
Fiji	85%	86%
Indonesia	81%	72%
Lao PDR	97%	97%
Marshall Islands	94%	96%
Micronesia, Fed. Sts.	92%	94%
Mongolia	75%	70%
Myanmar	93%	91%
Palau	82%	81%
Papua New Guinea	87%	89%
Philippines	82%	81%
Thailand	75%	73%
Timor-Leste	80%	73%
Togo	84%	89%
Vanuatu	78%	77%
Vietnam	80%	79%
Europe & Central Asia	Male	Female
Albania	78%	74%
Armenia	89%	89%
Azerbaijan	85%	77%
Belarus	37%	30%
Bosnia and Herzegovina	54%	45%
Croatia	40%	33%
Georgia.	70%	65%
Kazakhstan	62%	56%
Kosovo	92%	92%
Kyrgyz Republic	76%	68%
Macedonia, FYR	76%	76%
Moldova	35%	26%
Montenegro	56%	44%
Serbia	51%	44%
Tajikistan	93%	87%
Ukraine	41%	36%

Latin America & the Caribbean	Male	Female
Argentina	53%	49%
Bahamas, The	69%	68%
Bolivia	62%	64%
Brazil	63%	60%
Chile	66%	66%
Colombia	72%	73%
Costa Rica	69%	66%
Dominican Republic	75%	76%
Ecuador	68%	66%
El Salvador	75%	77%
Guatemala	79%	78%
Guyana	74%	78%
Haiti	78%	79%
Honduras	84%	83%
Jamaica	64%	74%
Mexico	69%	66%
Nicaragua	88%	90%
Panama	66%	71%
Paraguay	76%	74%
Peru	74%	72%
Uruguay	43%	38%
Venezuela, RB	80%	85%

Middle East & North Africa	Male	Female
Egypt, Arab Rep.	82%	63%
Iran, Islamic Rep.	79%	62%
Iraq	83%	76%
Jordan	84%	70%
Lebanon	76%	66%
Syrian Arab Republic	100%	99%
Tunisia	80%	69%
West Bank and Gaza	77%	66%
Yemen, Rep.	95%	92%

South Asia	Male	Female
Afghanistan	98%	96%
Bangladesh	92%	85%
Bhutan	92%	90%
India	85%	80%
Maldives	92%	91%
Nepal	90%	87%
Pakistan	96%	94%
Sri Lanka	85%	82%

Global	Male	Female
Average	80%	77%

Refer to www.worldbank.org/pensions for much more detailed co-residence and other pensions data.

References

- Aguila, Emma, "Male Labor Force Participation and Social Security in Mexico," *Journal of Pension Economics and Finance*, 2013 (forthcoming)
- Bongaarts and Zimmer. 2001. "Living Arrangements of Older Adults in the Developing World: An Analysis of DHS Household Surveys". Policy Research Division. Population Council. Washington, D.C.
- Borsch-Supan et al. 1992. "Health children and living arrangements". In *topics in the Economics of Aging*. Ed Wise, D. university of Chicago. Chicago.
- Cameron. 2000. "The Residency Decision of Elderly Indonesians: A Nested Logit Analysis". *Demography*. Volume 37-No. 1.
- CEDLAS and World Bank. 2010. "A guide to the SEDLAC: Socio-Economic Database for Latin America and the Caribbean". Argentina and US.
- Chan. 1998. "The interrelationship between formal and familial support of the elderly in Asia: What can we learn from the Singapore case?" National University of Singapore. Singapore
- Costa 1998. *The Evolution of Retirement: An American Economic History, 1980-1990*. University of Chicago Press. Chicago.
- Edmonds. 2006. "Child labor and schooling responses to anticipated income in South Africa". *Journal of Development Economics*.
- Evans, B. 2014. "Using Household Surveys for Age-Based Poverty and Pensions Analysis". World Bank. Washington D.C.
- Galasso et al. 2008. "Investing for the Old Age: Pensions, Children and Savings". World Bank. Washington D.C.
- Giles et al. 2010. "Can China's rural Elderly Count on Support from Adult Children?" World Bank. Washington D.C.
- Iacovou. 2000. "The living Arrangements of Elderly Europeans". Institute for Social and Economic Research.
- Kacgicibasi .1999. "The Value of Children: A Key to Gender Issues". *IPA Journal*.
- Laslett. 1995. "Necessary knowledge: age and aging in the societies of the past." *Aging in the past: Demography, society, and old age: 3-77*.
- Ogawa and Hodge .1998. "Old age security for parents and expectations from children: attitudes and perceptions of married Japanese women of childbearing age". *Population Problems Research Council*. Tokyo.
- Pal. 2007. "Effects of Intergenerational Transfers on Elderly Coresidence with Adult Children: Evidence from Rural India". *IZA DP No. 2847*. Bonn.
- Schoeni. 1998. "Re-assessing the decline in parent-child old age co-residence during the twentieth century"/ *Demography*. Volume 35, Issue 35. Washington.
- Stark. 1995. *Altruism and Beyond: An economic analysis of transfers and exchanges within families and groups*. Cambridge University Press. Cambridge.
- Zimmer and Kwong. 2003. "Family Size and Support of Older Adults in Urban and Rural China: Current Effects and Future Implications". *Demography*. Volume 40-No. 1
- UN. "Living Arrangements of Older Persons Around the World". *Population Division*. New York.