Altruism and Efficient Allocations in Three-Generation Families

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Abstract

Understanding inter-generational transfers within the family is key to the design of effective policies in health and social care. Research into resource allocation in a two-generation household, i.e. one consisting of parents and children, is well established (see e.g. Dickie and Gerking, 2007). However, perhaps surprisingly, little is known about three-generation households, regarding the motivations, preferences and/or behaviours of the 'middle' generation towards the older generation i.e. grandparents. In this paper, we focus on the familial situation in which the grandparent lives with the family and, as such, is assumed to be a household member. Theoretically, this allows us to extend the current two-generation 'parental altruism' model of family resource distribution to three-generations. This underpins the empirical investigation, which is to establish whether the middle generation has altruistic preferences with respect to their own parents as well as their child and, if so, whether the degree of altruism varies across the different generations. The answer to this question has profound implications with respect of the degree to which the so-called 'squeezed middle' can substitute for the government in the area of health and social care for the elderly, in particular if life expectancy continues to increase.

We report the results of a stated preference study carried out in Poland. The current structure of Polish households provides a unique opportunity to explore this issue, as the share of three-generation households in Poland is relatively large (10%) in comparison with other European countries. We use a split-sample Choice Experiment (CE) to estimate the 'middle' generation's willingness to pay (WTP) for reducing their child's (youngest generation) risk of getting heart disease and their WTP to reduce the same risk for their parent (oldest generation).

The CE comprises two attributes; the lifetime risk reduction and a price attribute. Each respondent was randomised into one of two sub-samples. Both sub-samples contain a block of choice sets, concerning a reduction in her/his own risk of the illness. Further, one sub-sample, contains a block of choice sets relating to her/his child's and the other sub-sample contains a block of choice sets concerning his/her parent's risk reduction. Depending on a subsample, in each choice set, respondents are asked to choose which kind of the vaccination program they would prefer for themselves and their

child, or for themselves and their parent. In the survey as a basement risk level we use the risk of being diagnosed with a coronary artery disease before age 80 years for the respondent, her/his child and her/his parent assessed by the respondent.

To analyse our CE data we use a multi nominal logit model (MNL) and selected random parameter models (RPL). We run the RPL models these which allow and these which do not allow for a correlation of random parameters. We found the models with correlations fit data better. Table 1 shows the models results.

Table 1. Models results.

Treatment 1 (child and respondent)				**Treatment 2 (granny and respondent)**			
Variable	**MNL**	**RPL**	**Dist.**	**Variable**	**MNL**	**RPL**	**Dist.**
Mean				***Mean***			
ASC_SQ_CH	1,1308***	-2,1626	n	ASC_SQ_G	0,7516***	-3,4061***	n
Risk/10_CH	0,2464***	0,4372**	ln	Risk/10_G	0,308***	1,5974***	n
Cost/10_CH	0,0296***	-1,1184***	ln	Cost/10_G	0,0615***	-1,4524***	ln
ASC_SQ_R	0,6974***	-2,1293**	n	ASC_SQ_R	0,9143***	-3,6964***	n
Risk/10_R	0,2208***	0,2292	ln	Risk/10_R	0,281***	1,3978***	n
Cost/10_R	0,0445***	-0,7597***	ln	Cost/10_R	0,0525***	-1,6188***	ln
St. dev.				***St. dev.***			
ASC_SQ_CH	-	21,279***		ASC_SQ_G	-	13,6364***	
Risk/10_CH	-	2,0238***		Risk/10_G	-	1,3557***	
Cost/10_CH	-	2,2731***		Cost/10_G	-	2,0638***	
ASC_SQ_R	-	14,184***		ASC_SQ_R	-	14,7753***	
Risk/10_R	-	2,4403***		Risk/10_R	-	1,3394***	
Cost/10_R	-	1,4093***		Cost/10_R	-	2,3013***	

We found out that mean and median WTP for decrease of lifetime risk of coronary artery disease appeared to be significant at 1% for granny, respondent and his/her child. Similarly to findings in the literature (see e.g. Dickie and Messman, 2004) we observe the significant difference between the value of risk reduction for the respondent and her/his child. An estimated marginal rate of substitution (MRS) between child and the respondent risk reduction is about two indicating that respondents value the children's health attribute twice as highly as their own. Regarding granny's health we do not observe the significant difference between the WTP for risk reduction for the respondent and her/his parent.

References:

Dickie M., Messman, V. 2004. Parental altruism and the value of avoiding acute illness: are kids worth more than parents? Journal of Environmental Economics and Management 48(3), 1146-1174.

Dickie, M. Gerking, S. 2007 Altruism and environmental risk to health of parents and their children, Journal of Environmental Economics and Management 57, 323-341.