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**The old people's perception of well-being:
the role of material and non material resources ***

Bruno Cheli, Laura Lecchini and Lucio Masserini

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The Old People's Perception of Well-being: the Role of Material and Non Material Resources*

Bruno Cheli, Laura Lecchini, Lucio Masserini

Department of Statistics and Mathematics Applied to Economics
University of Pisa
via Ridolfi 10, 56124 Pisa (Italy)
fax +39 050 945375, e-mail bcheli@ec.unipi.it

Abstract

The aim of this research is to study the perception of well-being of Italian older adults, trying to outline the role played by various types of material and non-material resources together with their interactions. The basic statistical information is drawn from the OLIVAR survey (Living Arrangements and Social Networks of Older Adults in Tuscany) carried out in 1993 and 1994.

In this study we define individual well-being as the satisfaction of one's life in general. A proxy of this is represented by the answer given by any individual who is interviewed on this topic. On the basis of the available information we have outlined the following spheres of influence: *material resources, health, social network, religiousness, loneliness, free time, children, socio-demographic characteristics.*

The available after tax income is surely one of the most relevant variables accounting for economic welfare and poverty. Unfortunately, the income observed in the Olivar survey is not a sufficiently accurate indicator of household income. For this reason we decided to reconstruct the household income by means of an imputation procedure utilising the information supplied by the Household Budget Survey of the Bank of Italy.

We carried out the well-being analysis on two levels. Firstly we singled out the factors which have a direct net influence on well-being evaluation. Secondly we investigated mutual relationships among the factors. In both cases we conducted the statistical analysis by applying Logit models.

On the basis of the variables we analysed, our results reveal that the subjective well-being of the elderly is significantly influenced by health conditions, the feeling of loneliness and the availability of material resources. Moreover, all other things being equal, people who are strongly affiliated to church tend to be more satisfied than others. Among the socio-demographic characteristics only gender seems to exert a net (direct) influence on well-being. In fact, *ceteris paribus*, men tend to be more satisfied than women. Moreover, compared to women, men seem to give more importance to material resources and their well-being seems to be less connected to religion.

In the second part of the empirical analysis we also investigate the set of relationships among the well-being factors that we considered and the indirect effect on life satisfaction that any variable exerts through the other ones.

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1. Introduction

Well-being of the elderly and that of the whole population in general, represents a very important issue which is more and more debated in the field of social studies. Since the 70's a trend of research on well-being has developed that has progressively eroded the purely materialistic vision of 19th century economists, pointing out the fundamental role of non-material factors (Andrews, 1974; Argyle, 1987). Social policies in Italy have taken in very little account this knowledge, concentrating on economic aspects. In fact, as concerns the elderly, actions refer essentially to income transfers and facilitations for health care.

The aim of this research is to study the perception of well-being of Italian older adults, trying to outline the role played by various types of material and non-material resources together with their interactions. The basic statistical information is drawn from the OLIVAR survey (Living Arrangements and Social Networks of Senior Citizens in Tuscany) carried out in 1993 and 1994.

2. The conceptual model

In this study we consider individual well-being as the satisfaction of one's life in general. A proxy of this is represented by the answer given by any individual who is interviewed on this topic. Clearly, each individual has their own scale of values to which they refer more or less consciously when evaluating well-being. Our aim is to understand which factors are relevant on average for such subjective perception and the way they work.

* Although the whole paper is the result of the common work of the three Authors, B. Cheli wrote sections 4 and 5.2; L. Lecchini wrote sections 1, 2, 5.1 and 6; L. Masserini wrote sections 3 and 5.3.

On the basis of the available information we have outlined the following spheres of influence:

1. *material resources*. We considered income, house ownership and comparative evaluation of the material welfare of the family of origin, where the last aspect accounts for economic stability,
2. *health*. We took into account different aspects: i) self evaluation of health in general and compared to peers'; ii) presence of handicap;
3. *social network*. The influence of social relationships has been studied by considering either quantitative aspects (network size and intensity of the support given to others) and qualitative ones (presence of friends in the network);
4. *religiousness*. Religiousness or spirituality is a subjective fact, extremely difficult to define, which is not necessarily connected with the participation to organised religions. Nevertheless we had to confine our attention to the latter aspect, considering the strength of affiliation to a church as its proxy;
5. *loneliness*. We considered both the subjective feeling on loneliness and a composite measure (De Jong loneliness scale);
6. *free time*. We did not focus on the quantity of free time, preferring to take into account how one's spare time is organised;
7. *children*. We considered the presence of children;
8. *socio-demographic characteristics*. We took into account gender, age, living alone (single households), and the level of education. These are treated as control variables even though education can also be seen as a factor.

3. The data base

In 1993 and 1994 a series of 1570 face to face interviews were conducted on a random sample of old people residing in western Tuscany, Italy. The units of analysis of this survey are the individuals born in the years 1903 - 1937. Therefore the sample is composed of people who were aged 55 years or more at the time of the interview. The sample is representative of the corresponding population of western Tuscany, but also of several other areas characterised by

poliocentric reality (i.e. absence of very large towns), scarce rural character and a family structure historically distinguished for low fertility. Detailed information about the survey design is reported in Bottai *et al.* (1995). The questionnaire is an adapted version of the one designed for the survey on *Living Arrangements and Social Networks of Older Adults* carried out by a group of researcher from the NIDI, the Department of Social Research Methodology and the Department of Sociology and Social Gerontology of the University of Amsterdam (NL).

The survey provides information on a large set of variables relative to family history, residential history, employment history, social networks in addition to many other individual characteristics.

4. Unreliability of the observed income and its reconstruction

Available (individual or household) after tax income is surely one of the most relevant variables accounting for economic welfare and poverty, even though to a lesser extent it is to be considered an important factor of well-being too. Although welfare is an individual notion, household income¹ is generally preferred to individual income as an indicator of welfare, for the reason that individuals live in households within which they share their economic resources and take consumption decisions. The Olivar survey does not provide direct information about household income. Interviewees were asked to declare the overall income amount monthly perceived by them and their partner. This kind of information can only be considered a very rough proxy of the household income since it ignores the possible presence of other income perceivers in the household. Moreover interviewees are usually reticent to declare their real income (this phenomenon is particularly strong in Italy) and even if they are not they tend to report only the fixed earnings such as salaries, pensions, etc. and to forget other components such as interests, capital gains and year-end bonuses. For this reason, in the most accurate income surveys people are interviewed on any single source of earning with a complex system of internal control and the total income comes out as a derived variable. This kind of procedure is adopted for instance in the survey on household budgets carried out by the Bank of Italy (B.I.), which is commonly considered the most (perhaps the only) reliable source of information on the personal income of the Italian population.

¹ To be precise we should talk about equivalent household income.

If we compare the households distribution according to their income of the Olivar sample with the corresponding distribution in the B.I. sample, relevant differences come out². The situation is summarised in Table 4.1.

As we can see, the mean income of the Olivar data base is less than half compared to that of the B.I. survey and such a difference remains big even if we adjust the figures for inflation. A certain difference emerges also as concerns the relative variability measured by the standardised index $c.v./(\overline{n-1})^{1/2}$, where $c.v.=std.dev./mean$.

Table 4.1. Mean values and variability measures of household incomes.

survey and year of observation		mean	std.dev.	c.v.	$c.v./(\overline{n-1})^{1/2}$	sample size n
OLIVAR 1993 - 1994 (monthly income × 12)		18152.5	22064.5	1.22	0.0324	1416
Bank of Italy 1995 (yearly income)	weighted	45099.6	37465.6	0.83	0.03174	685
	unweighted	44025.6	33188.5	0.75	0.02629	815

As a consequence of either this empirical evidence or the previous methodological considerations we deemed the Olivar information relative to income not to be sufficiently reliable and we decided not to use it in our analysis. At the same time, given the fundamental role of income, we had to find a remedy for this lack of information. So we tried to reconstruct the household incomes of the Olivar respondents by means of the imputation from an external data base. In this respect, two considerations need to be drawn. Firstly, the Olivar data base does not contain any kind of information (e.g. consumption expenditure) that may be used as a proxy of household income. Secondly we use the imputation in an unusual way. In fact this kind of procedure is designed to cope with missing data in order to reconstruct rectangular data bases and the information that is necessary to do this is generally derived from the non-missing data in the same data base.

In our case we had to reconstruct the whole income distribution and for this purpose we used an external source of information represented by the B.I. data base restricted to households residing in central Italy whose head is over 55. As far as the imputation technique is concerned we adopted a regression based procedure. In synthesis we did the regression of the B.I. household

² As mentioned above, the Olivar Household income is approximated by the sum of the respondent's income and his/her partner's. For what regards the B.I. data, we refer only to the sub sample of households residing in central

income over a set of covariates featuring also in the Olivar survey. Hence we imputed to any Olivar respondent the mean income predicted by the regression model³. Detailed information about this point is available on request from the Authors.

As we mentioned in section 3, the studies on welfare and poverty generally refer to household income. However, when we aim to make welfare comparisons among households, we should take into account several socio demographic factors that may affect the maintenance costs. The most relevant of these factors is the household size. In fact, in order to attain a fixed level of welfare, a large household is likely to need more income than a smaller one. However, if we used the per capita household income we would ignore the scale economies afforded by living together. For these reasons it is necessary to transform the household income by means of a so called *equivalence scale*. In general an equivalence scale is a function of the following type:

$$e(A_k) = \frac{c(u, A_k)}{c(u, A_r)}$$

where: A_k - vector of socio demographic attributes corresponding to the k-th household type;

A_r - vector of socio demographic attributes corresponding to the reference household type;

u - utility level;

$c(u, A_k)$ - cost function which tells us the level of income needed by a household with characteristics A_k in order to achieve the utility level u .

By dividing the household income by the corresponding equivalence scale value we obtain the so called *equivalent household income*, which is used to make welfare comparisons among households of different types. Since i) the Olivar sample is not representative of the whole population but only of older adults and ii) we ignored the relationship between the respondent and the head of the household, we could not use any of the equivalence scales already available for the Italian population. Therefore we had to estimate *ad hoc* scales for the old population. To do this we referred to a model of the QUAIDS_PS type (Quadratic Almost Ideal Demand System with the specification of the Price System demographic variables, Cf. Betti, 1999) and we estimated it on a data set from the ISTAT Household Budget Survey so as to have the information on consumption expenditures that are necessary for such a model.

Italy whose head is aged over 55.

If you set the maintenance cost of a person over 55 equal to 1, the equivalence scale so obtained is specified by the following parameters⁴:

$\tau_1 = 0.571$ cost of any additional adult (aged 18 or more);

$\tau_2 = 0.373$ cost of any additional person aged less than 18.

5. Empirical analysis

5.1. The variables used in the model

In order to estimate a statistical model for well-being that is consistent with the conceptual one described in section 2, on the basis of the available statistical information of the Olivar survey, we defined the following variables:

variable name	label	type and values	additional description
<u>Dependent</u>			
SWB	subjective well-being	dichotomous: 1 satisfied or very satisfied, 0 dissatisfied, very dissatisfied or equally satisfied/unsatisfied	self evaluation of the satisfaction of life in general
<u>material resources</u>			
YEQ	income	continuous	equivalent household income
HOUSE	dwelling ownership	dichotomous: 1 owner, 0 not owner	
FAMFIN	previous standard of living	dichotomous: 1 better than peers', 0 worse or equal	comparative standard of living of the origin family
<u>not material resources</u>			
<u>health</u>			
SUHEALTH	subjective health	dichotomous: 1 good or very good, 0 otherwise	subjective evaluation of the present health condition
CHEALTH	comparative health	dichotomous: 1 better than peers', 0 worse or equal	subjective evaluation of the present health condition compared to peers'
HANDIC	handicap	dichotomous: 1 handicapped, 0 not handicapped	
<u>social network</u>			
ANWSIZE	network size	discrete quantitative	
FRIENDS	friend relationships	dichotomous: 1 presence, 0 absence	presence of at least one friend in the social network
SUPPORT	ability to give support	dichotomous: 1 support giver, 0 not giver	ability to give either instrumental or emotional support
<u>religiousness</u>			
RELIDIC	religious affiliation	dichotomous: 1 strongly affiliated, 0 otherwise	affiliation to organised religion

³ It is worth stressing that the R^2 coefficient for the estimated regression model is 0.47. By contrast if we do the regression of the Olivar observed income over the analogous set of covariates in the Olivar data base, we obtain an R^2 value around 0.1. This fact brings additional evidence of the unreliability of the Olivar observed income.

⁴ Further details are available on request from the Authors.

<u>loneliness</u> ALOCOMP	loneliness	quantitative	variable constructed as the sum of ALOO (scale of loneliness) and ALORAT (subjective appraisal of loneliness)
<u>free time</u> FREETIME	free time organisation	dichotomous: 1 free time activities, 0 otherwise	organised leisure time activities
<u>children</u> CHILD	presence of children	dichotomous: 1 presence of alive children, 0 otherwise	
<u>control variables</u>			
AGE1	age (dummy)	dichotomous: 1 if age is between 65 and 74 years, 0 otherwise	The reference age interval is 55 - 64
AGE2	age (dummy)	dichotomous: 1 if age is greater or equal 75 years, 0 otherwise	
SEX	gender	dichotomous: 1 male, 0 female	
SINGLE	one person household	dichotomous: 1 single, 0 more than one component household	
EDUC	level of education attained	dichotomous: 1 high, 0 low	where low indicates elementary (either completed or not) and lower vocational, whereas high stands for any higher degree

5.2. The Logit model

As we said in section 2, we aim to understand how the subjective perception of well-being is influenced by the set of factors that are observed in the Olivar survey. The statistical analysis is performed by means of a Logit model where the dependent variable is represented by SWB and the independent ones are all the remaining variables listed above. The data processing for the model estimation was carried out with SPSS. The results are reported in Table 5.2.1. Before commenting the parameter estimates it is worth remembering that the *B* coefficient in the Logit model cannot be interpreted in the same sense as in the ANOVA or the regression analysis. In other words they do not measure the average variation of the dependent variable. They only give indication about the sign of the relationship and can be compared to one another in order to assess which factors are more relevant than the others.

Although the overall adaptation is not satisfactory, a number of parameters are significant (* denotes 10% significance and ** 5% significance). Among the control variables only gender (SEX) is significant. All other things being equal, men are subjectively better off than women. The fact that age dummies are not significant reveals that the age factor is not relevant *in se* but

only for the effect it has on other variables such as health. A similar consideration also applies to the education level. By contrast, it is quite surprising that living alone (SINGLE) has no net influence on the perception of well-being. In fact old people living alone in Italy are less than in other European countries (e.g. Holland) (De Jong *et al.*, 1997) and we thought that this type of living arrangement could be a discriminating condition.

Table 5.2.1. The estimated Logit model for SWB. Significance of the parameters estimates is denoted by * (10%) and ** (5%).

Classification Table for SWB

Observed	Predicted		Percentage Correct
	not satisfied	satisfied	
not satisfied	213	265	44,56%
satisfied	90	784	89,70%
	Overall		73,74%

Variable	B	S.E.	T	Exp (B)
YEQ	1,18E-05	8,395E-06	1,4056*	1,0000
HOUSE	,3071	,1591	1.9302**	1,3594
FAMFIN	,4867	,1993	2.4420**	1,6269
SUHEALTH	,5923	,1555	3.8090**	1,8082
CHEALTH	,2984	,1516	1,9683**	1,3477
HANDIC	-,2904	,1563	-1.8580**	,7480
ANWSIZE	-,0047	,0183	-0.2568	,9953
FRIENDS	,2659	,1623	1.6385*	1,3046
SUPPORT	,0014	,0766	0.0183	1,0014
RELIDIC	,2708	,1325	2.0438**	1,3110
ALCOMP	-,0887	,0093	-9.5376**	,9152
FREETIME	-,0232	,1629	-0.1424	,9771
CHILD	-,0503	,2140	-0.2350	,9509
AGE1	-,0235	,0745	-0.3154	,9768
AGE2	-,0502	,0914	-0.5492	,9510
SEX	,3593	,1352	2.6575**	1,4323
SINGLE	-,1674	,2081	-0.8044	,8459
EDUC	-,0693	,1999	-0.3467	,9330
Constant	1,2744	,3345	3.8099	

$$R^2 = r^2(\text{SWB observed, SWB predicted}) = 0.1813$$

All other conditions being equal all the three variables accounting for material resources appear to be relevant. In fact the corresponding β coefficient are significant. Well-being is positively associated to income; moreover it tends to be higher if the house is owned and if the family of origin had a higher standard of living compared to peers'.

As far as non-material resources are concerned, the spheres of health, religiousness and loneliness reveal a net influence. Life satisfaction tends to improve for those who have good health either from the subjective (SUHEALTH) and comparative (CHEALTH) point of view. By contrast having a handicap obviously produces on average a net reduction of well-being. Some Authors define well-being as absence of loneliness. As a matter of fact we find a strict relationship between the two variables: well-being decreases as loneliness increases. Moreover, having friends among the important relationships produces a positive influence on well-being as manifested by the sign of the estimated β coefficient⁵. Finally, all other things being equal, old people who are actively affiliated to an organised religion (that coincides with the Roman Catholic Church for everybody in the sample) declare to be more satisfied of their lives in general.

Considering that gender is the only control variable with a significant β value, we tried to investigate the role of this variable more deeply by estimating the previously described Logit model for men and women separately. The results are quite interesting. Material resources appear to be more relevant for men than for women. In fact for men we find significant β values for income, dwelling ownership and the previous standard of living, whereas for women only the last variable reveals significant influence. Another interesting difference between genders is represented by role played by the presence of friends in the network and by church affiliation. Having friends turns out to have a significant (positive) influence on well-being only for men, whereas church activities reveal significant (positive) influence only for women.

5.3. The indirect effects on well-being

The analysis performed with this Logit model allowed us to see that some factors either among material resources and non-material ones have a net influence on the subjective well-being, whereas other factors seem to be irrelevant. But the sense of our conceptual model for well-being should not be limited to the analysis of the net effects that the various factors directly have on well-being. Just as important is the set of relationships among these factors and the indirect effect on well-being that any variable may have through the other ones. In this way we can also understand the role played by some of the factors that do not have net influence but that simply cannot be ignored.

⁵ Previous studies on the composition of the social network of the Italian elderly (Lecchini et al., 1995) point out that the average network size is small and relatives represent nearly 70% of it. Moreover the percentage of network that

In order to carry out this analysis in a simplified way, we considered only one variable for any of the non-material resources. Hence we took each of them as the dependent variable of a Logit model, where the independent variables are all the remaining ones. The parameter estimates of these models are reported in table 5.3.1. We have 5 Logit models, as many as the listed dependent variables are. Once again we are interested only in the sign of the parameters and not in their module.

When the parameter at the cross between two variables is significant, it means that there is a partial correlation. Let us stress out that the column (dependent) variables feature also among the row (independent) ones. Hence the pair wise combinations among these variables appear twice and the corresponding coefficients may vary in module, but not in sign.

Table 5.3.1. Parameters estimates of the Logit models with 10% significance (* denotes 5% significance; ns = not significant).

Independent variables	Dependent variables				
	FRIENDS	FREETIME	ALODIC	SUHEALTH	RELIDIC
AGE1	-0.4165*	-0.3604*	ns	-0.4571*	ns
AGE2	-0.5708*	-1.0430*	ns	-0.7060*	0.2882
SEX	0.6638*	0.4247*	-0.3116*	0.4799*	-0.2917*
SINGLE	0.7019*	0.4363	0.8582*	ns	0.5116*
CHILD	ns	ns	-0.4147*	ns	ns
EDUC	0.4317	0.5374*	-0.6206*	ns	-0.4139
YEQ	ns	ns	1.40E-05	1.38E-05	ns
HOUSE	ns	ns	-0.5296*	ns	ns
FAMFIN	0.5151*	0.4962*	ns	ns	0.5262*
ANWSIZE	0.1988*	0.0713*	-0.0405*	-0.0405*	0.1169*
FRIENDS	-	ns	ns	0.3242*	-0.3236*
FREETIME	ns	-	-0.5941*	0.3825*	ns
ALODIC	ns	-0.0337*	-	-0.0495*	-0.0152
SUHEALTH	0.3314*	ns	-0.5525*	-	ns
CHEALTH	ns	0.5352*	ns	-	ns
HANDIC	ns	-0.5129*	0.3597*	-2.1013*	0.2655
RELIDIC	-0.3234*	ns	ns	ns	-
SUPPORT	ns	0.2212*	ns	ns	0.2134*
constant	-1.7959*	1.3031*	ns	-0.8615*	ns
fitting index ^(a)	76.82%	80.23%	74.35%	69.28%	64.24%

^(a) percentage of correctly predicted values of the dependent variable.

contain friends is considerably low.

Though it would be very interesting to comment all these results, for the sake of synthesis, we shall confine our attention to the relationships that involve the variables that do not have direct net effect on well-being.

Education. All other things being equal, people who have a medium or high level of education tend to feel less lonely, to have more friends, to organise their free time more and to participate less to church activities.

Single. People who live alone tend to feel more lonely, but at the same time they have more friends and more free time activities.

Children. The only significant indirect effect on well-being of having children is represented by the reduction of the feeling of loneliness.

Equivalent Income. All other things being equal, as income grows, health improves; this fact is quite natural. However, the feeling of loneliness increases too, and this is not so easy to explain. By contrast, the feeling of loneliness tends to be lower for those who are owners of the dwelling.

Network size. Although the size of the social network does not play a direct role on well-being, it turns out to be very relevant in an indirect way, as it is associated to all the five factors we considered. However, it seems difficult to analyse these relationships in terms of cause/effect. Perhaps the only thing that is worth commenting on is that having a large network tends to reduce loneliness.

Free time. The ability to organise free time is associated with a lower feeling of loneliness and better health.

Support. Giving support to others is positively associated with religious practice and organised free time activities.

6. Conclusions

In this paper we have analysed the perception of well-being among senior citizens in Tuscany, in order to outline the factors that are more relevant for its definition and the role they play.

Age does not seem to have a net (direct) effect either on satisfaction of life in general or on the feeling of loneliness. A similar result was found by De Jong Gierveld *et al.* (1997) who analysed the same data set of the Olivar survey as well as similar data relative to the Dutch

elderly. Nevertheless it has some indirect effects on well-being, the most important of which is the quite natural deterioration of subjective health.

One of the main issues that we aimed to investigate was the role of income and material resources in general. In a previous research on the same data set it was found that income did not have a significant effect on well-being (defined as absence of loneliness) (De Jong Gierveld *et al.*, 1997). These Authors had used the income declared by the interviewees, whereas we judged this variable too affected by measurement errors and we preferred to reconstruct the household income by means of an imputation procedure using the information supplied by the Bank of Italy Household Budget Survey. The results we found contrast with those of the above mentioned research: household income does seem to have a net (direct) effect on well-being perception. Besides there are other material resources that are relevant, namely ownership of dwelling and the previous standard of living. This last variable derives from the subjective evaluation of the standard of living of the family of origin compared to the neighbours. Unlike income, it does not reflect the current standard of living but the material assets and opportunities received in youth.

When we carry out the same analysis on each of the two genders separately, we find that income takes on a relevant role only for men, whereas the other two variables accounting for material resources are relevant for both genders. In a way we can say that men take into account material resources more than women do when they evaluate their well-being.

Among the non-material resources we considered, a significant direct effect on well-being is exerted by health, loneliness, presence of friends in the network and religious affiliation. The fact that life satisfaction improves with health and worsens with the feeling of loneliness is valid for both, males and females, whereas a strong religious affiliation has a positive influence (on well-being) only for women.

All the factors that we considered have also indirect effects on well-being as long as they interact with one another. For instance, living alone on one hand increases the feeling of loneliness and on the other is associated to positive factors of well-being such as religious affiliation and the presence of friends. Another interesting result is that people with medium or high education level tend to feel less lonely, to have more friends, to do more organised free time activities, though participating less to church activities.

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