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**SOCIO-ECONOMIC RESOURCES, HOUSEHOLD
COMPOSITION, AND THE SOCIAL NETWORK AS
DETERMINANTS OF WELL-BEING AMONG
DUTCH AND TUSCAN OLDER ADULTS***

1. INTRODUCTION

The well-being of older adults is an important theme in recent discussions in the Netherlands and other European countries. Public discussions about the size and affordability of current pension schemes are well-known. Will it be possible to guarantee public pensions, public health care services and other such benefits and services for the elderly in the years to come? Or is it impossible to come up with reliable forecasts, because at the aggregate level the influence of demographic change on the economy is indirect and influenced by that of many other variables (Jackson 1994; Van Imhoff and Keilman 1991)? The fast-growing numbers of elderly, and the rise in the proportion of elderly in national populations is being studied by economists as well as financial experts. It is only in the second phase that other scholars come in; they emphasize the non-economic aspects of the ageing process such as social integration, the participation of older adults in society, and quality of life (Day and Day 1994). Additionally, these scholars underline the importance of gaining deeper insight into the determinants of the quality of life and well-being of older adults.

In this article the well-being of older women and men will be studied from three perspectives. Firstly, we will shed light on the socio-economic factors that provide the elderly with greater or fewer opportunities and resources for independent and successful ageing, or confront them with restrictions in realizing physical and social well-being. The second

* This article is partly based on data collected in the context of the research programme 'Living arrangements and social networks of older adults'. This research programme is being conducted at the Departments of Sociology and Social Science Methodology, Faculty of Social Cultural Sciences of the Vrije Universiteit in Amsterdam, and at the Netherlands Interdisciplinary Demographic Institute in The Hague. The research is supported by a programme grant from the Netherlands Programme for Research on Ageing (NESTOR), funded by the Ministry of Education and Science and the Ministry of Welfare, Health, and Cultural Affairs.

perspective is that of cohesion. What is the effect of cohesion indicators, such as household composition, and the size of, and support from the social network, on well-being? The situation of the elderly will also be determined by country-specific structures regarding the system of social security, and the socio-cultural system of norms and values concerning the social and familial roles and embeddedness of the elderly. As a consequence, socio-economic resources as well as social cohesion patterns may be different for the elderly of different nationalities and living in different countries. Differences in social cohesion may be related to the fact that values and norms concerning family and non-family relationships, independence and protection vary per country (Lecchini, Marsiglia and Bottai 1995; Moors 1995; Palomba 1995). A comparison of the situation of elderly persons in two countries - in this case the Netherlands and Italy - forms the third perspective of this study.

Well-being as a broad phenomenon is defined as an aspect of quality of life. Subjective well-being refers to the subset of phenomena that relates to happiness and feelings of satisfaction (Hox 1986; Hoff 1995). In this study subjective well-being is operationalised as the absence of loneliness. Our starting point is that whether or not the elderly can realize a situation of non-loneliness depends on the socio-economic resources at their disposal, as well as on the social cohesion they manage to organize. The well-being of older adults is correlated with the socio-economic or 'material' as well as 'immaterial' characteristics of the situation they are confronted with.

2. DIFFERENCES IN SOCIO-ECONOMIC STATUS

Information on the socio-economic resources of the elderly population is still relatively scarce (Liefbroer and De Jong Gierveld 1995; Mayer and Wagner 1993; Pampel and Hardy 1994; Timmermans 1993). In most countries of the world, the elderly have lower levels of income than younger age groups, because they no longer receive employment-related income. In Italy and the Netherlands, however, most elderly receive some kind of work-related pension and/or social insurance or public pension benefit.

In Italy, social insurance for old age is mainly related to the individual's employment history. For most workers in the public and private sectors the pension system is directly related to the work history (the number of years of premium payments); after 30 years a worker can have about 70% of the mean salary over the final five years of active labour force participation. Pre-pension schemes are possible with about 60% of the mean

salary over the final five years of active labour force participation. Females not active in the labour market are allowed to participate in the pension schemes by voluntary pension premium payments. After the death of the husband, the widow normally has a basic pension related to the husband's pension level.

Social insurance pensions in the Netherlands consist of a flat benefit to *all* the elderly irrespective of the number of years worked; the basis of this pension is the payment of premiums by all participants in the labour market. This Dutch social insurance pension scheme (AOW pension since 1957) allows elderly persons to live independently at a basic financial level, that is, above the poverty line. A large proportion of the elderly are allowed an additional pension. Normally this additional pension is directly related to the work history (the number of years of premium payments; after 40 years of full-time work a worker can have 70% of the mean salary over the final years of active labour force participation; in this 70%, the AOW pension is included for a majority of the elderly). The system thus guarantees a basic financial standard of living, either as a couple or as a one-person household. However, the additional, collective or private pension schemes vary greatly depending on the labour market sector in general and the specific policies of the firms/employers concerned. As a result, it is difficult to compare the financial situation of the elderly, especially those living in different countries. Comparative studies for Europe show that the poverty incidence per country - for the elderly with an equivalent expenditure below 40 percent of the country average - is highest in Portugal (70.4%), medium-range in Italy (11.9%) and low-range (0.6%) in the Netherlands (Eurostat data for 1990 cited in Dooghe 1991).

Within each of the country-specific systems, we expect to find that the socio-economic resources are not evenly distributed across the elderly population, but follow more or less 'universal' patterns in all the countries of Europe. These factors include - among others - educational level, employment history, gender, partner status and partner history, household composition, age and health. Gender differences exist because the labour force participation of women is lower than that of men, and if they are employed, they are overrepresented in low-pay jobs. Consequently, women generally have lower incomes than men, also in later life. Differences in the socio-economic resources of the elderly by age are expected too, because of the cohort-specific changes in enrolment in education, and because of the fact that income levels usually drop after retirement; moreover, pension schemes are generally not 'indexed' in relation to the national inflation level. However, the ownership of a house can provide the elderly with an

extra financial resource, because home ownership is an indicator of a long-term investment that can be converted into cash if the need arises, and it implies having to spend only a small part of one's income on housing (Klaus and Hooimeijer 1994).

We hypothesize (H1) that in both countries the economic status of the elderly varies by household structure, sex and age. Elderly married (or unmarried) couples have higher incomes relative to their peers who do not have a partner, especially if the latter are very old women (Dooghe 1991). In order to test hypothesis 1, we need data on the relationship between income, household composition and sex at the individual level.

Relatively little is known about the specific effects of socio-economic resources on loneliness of the elderly; qualitative research, however, has pointed out that money is one of the themes spontaneously mentioned as a source of well-being in old age (Sherrard 1994). It is a well-known fact that money makes life much more easy for elderly persons in that it enables them to buy services that allow them to live at home, despite physical infirmities (Vicente, Wiley and Carrington 1979). Empirical data point out that nowadays the poor are 'forced' to apply strategies that include restricting one's social activities such as visiting birthday parties, inviting people to dinner, membership of clubs and societies, the continuation of a telephone connection, and so on (Engbersen 1990). In general, the negative effects of very low incomes among the elderly on the possibility to 'properly' invite and host relatives and non-relatives are underlined. Social isolation and loneliness are believed to be the result of this process. So, we hypothesize (H2) that the socio-economic status of the elderly will be negatively related to their intensity of loneliness. In order to test hypothesis 2 we need data on the relationships between socio-economic resources, household composition and well-being at the individual level.

3. DIFFERENCES IN HOUSEHOLD COMPOSITION

The family, especially the nuclear family, is considered to be one of the most important integrating structures of society. In modern societies, such as in Western Europe, the nuclear family is sometimes replaced by other types of unions, such as extramarital cohabitation. A rising proportion of elderly people live in one-person households (13 percent of males and 32 percent of females aged 60 years and over in Italy and 13 percent of males and 38 percent of females aged 60 years and over in the Netherlands; Dooghe 1991), and the percentage of elderly who live together with one (or more) of

their children is rapidly decreasing in Western as well as in Eastern European countries (De Jong Gierveld and Van Solinge 1995; Klinger 1992; Myers 1992; Sundström 1994; Van Solinge 1994; Wall 1984, in press). Data reported by Sundström (1994) point out that both in Italy (1990) and in the Netherlands (1986) 31 percent of people aged 65 or over live alone; the percentage of elderly people living with their children is 39 in Italy (1990) and only 8 in the Netherlands (1987). According to Mengani and Lamura (1995) many people above the age of 75 in Italy still move into one of their children's homes once they are widowed.

Data have shown a protective effect of marriage on the well-being of men and women (Gove 1972). Intimacy, however, can also be provided by non-married partners (Van Tilburg 1988). (Married) persons with a partner are, on average, happier than persons without a partner (De Jong Gierveld 1986, 1987; De Jong Gierveld and Van Tilburg 1989). As a consequence, men and women with a partner are less prone to early mortality than people without a partner (Gove 1972; Kobrin and Hendershot 1977; Veenhoven 1983). The protection or cohesion idea provides a possible explanation for the relatively high degree of well-being and low degree of loneliness among men and women with a partner (Dykstra 1990; Gove and Hughes 1980; Van Tilburg 1988). Others, however, point out that perhaps marital status has no direct effect on health and well-being when household composition (living alone versus living with others) are taken into account (Cafferata 1987). So, household composition will be examined as an important factor in the prediction of loneliness among the elderly.

The social network is to be considered as another important structure providing protection against loneliness. The concept of social network refers to all those people with whom one interacts regularly, and with whom one has close ties. The larger the number of people in the social network, the more likely it is that the elderly's needs for well-being are met (House and Kahn 1985; Van Tilburg 1990). Exchange of support is a crucial additional indicator of the functioning of the social network (Antonucci and Akiyama 1987; Depner and Ingersoll-Dayton 1988; Knipscheer 1993; Lakey and Heller 1988; Schwarzer and Leppin 1991). The amount of support received from members of the social network will presumably add to the prediction of the intensity of loneliness. The mechanisms that relate characteristics of realized social contacts to the desire for and values regarding social contacts, and consequently to the perceived discrepancy between desired and realized social contacts, have already been fruitfully investigated with the aid of the theory of mental incongruity (Dykstra 1990; Dykstra and De Jong Gierveld 1994). Another purpose of this study will be to investigate the

cohesive social network functions of the size and exchanges of support within such networks for the protection against loneliness, in addition to the input of socio-economic resources and household composition characteristics.

We hypothesize (H3) that living with a (marriage) partner in the same household, reporting a larger social network and a greater degree of support received from network members, will be negatively correlated to the intensity of loneliness. The universal patterns of interconnectedness will be more or less comparable for elderly living in Tuscany and in the Netherlands.

4. HEALTH SITUATION

The health situation of the elderly is of major influence on their capacity to establish and maintain a satisfying network of personal relationships (Tijhuis 1994). It is well-documented that health, whether reported subjectively or measured objectively, decreases with age (Baltes, Mayr, Borchelt, Maas and Wilms 1993; De Jong Gierveld, Dykstra and Beekink 1994; Liefbroer and De Jong Gierveld 1995; Manton and Soldo 1992; Soldo, Wolf and Agree 1990). However, detailed information on the extent to which health, in addition to socio-economic resources, household composition, and the social network affect the intensity of well-being of the elderly, is still lacking (Mullins, Sheppard and Andersson 1988).

5. METHOD

5.1 Respondents

In 1992, face-to-face interviews were conducted with 4494 respondents in the Netherlands in the context of the NESTOR-LSN survey (Broese van Groenou, Van Tilburg, De Leeuw and Liefbroer 1995). They constituted a random sample of men and women born in the years 1903 to 1937, stratified according to sex and year of birth. The sample was taken from the population registers of eleven municipalities: the city of Amsterdam and two rural communities in the west, one city and two rural communities in the south, and one city and four rural communities in the east of the Netherlands. The response was 61.7%. The data were collected by 88 interviewers. A minority

of those interviewed ($N=351$; 7.8%) lived in an institution of some sort, including nursing homes, old people's homes and psychiatric hospitals.

In 1993 and 1994, face-to-face interviews were conducted with 1570 respondents in western Tuscany, Italy. They constituted a random sample of men and women born in the years 1903 to 1937. The names and addresses were taken from the population registers of several municipalities in the provinces of Pisa, Livorno, Lucca and Massa-Carrara, according to a series of indicators capable of expressing the urban level and other social and economic conditions of central northern Italy (Bottai, Caputo and Lecchini 1995). The response in this OLIVAR survey was 65.6%. Additionally, 115 interviews were conducted with elderly men and women living in institutions (rest-homes). The majority of the latter interviews were obtained via names and addresses taken from local rest-home registers. The response among institutionalized elderly was 72.3%. The data were collected by 118 interviewers.

In order to optimize the comparison between the two surveys - the Dutch sample was stratified according to sex and year of birth, while the Italian sample was not stratified - the respondents in the Dutch NESTOR-LSN survey were weighted in such a way that for each 'year of birth' the number of males and females in the Dutch sample was equal to the numbers in these strata in the Italian sample. Excluded from the sample are elderly living in institutions, respondents with whom the interview was terminated before the personal network was delineated, and Dutch respondents who only answered the short version of the questionnaire. After weighting, the resulting number of respondents in the Dutch study equals the number of selected respondents in the Italian OLIVAR survey ($N=1548$).

5.2 *Questionnaire*

The Italian OLIVAR survey carried out within the Italian National Project "Invecchiamento" of the National Council of Research, used a questionnaire which was an adapted version of the questionnaire originally developed by the Dutch group of researchers of the NESTOR-LSN research programme on 'Living arrangements and Social Networks of older adults' (Knipscheer, De Jong Gierveld, Van Tilburg and Dykstra 1990). The research programme was developed at the request of the steering committee of the Netherlands Programme for Research on Ageing (Nederlands Stimuleringsprogramma Ouderenonderzoek; NESTOR), which was set up by the Dutch Ministry of Welfare, Health and Cultural Affairs and by the Ministry of Education and Science. Previous research carried out at three

scientific institutes, namely the Department of Sociology and Social Gerontology at the Vrije Universiteit of Amsterdam, the Department of Social Research Methodology at the same university, and the Netherlands Interdisciplinary Demographic Institute (NIDI) in The Hague, provided the expertise required for the topic.

Loneliness. In this study loneliness is defined as a situation experienced as one in which there is an unpleasant or unacceptable discrepancy between the number and quality of realized and desired social relationships (De Jong Gierveld 1987). A measuring instrument has been developed consisting of five positive and six negative items (De Jong Gierveld and Kamphuis 1985). An example of a negatively formulated scale item is: I experience a sense of emptiness around me. An example of a positively formulated item is: I can rely on my friends whenever I need them. The scale has a range of 0 (not lonely) to 11 (extremely lonely). The scale has been used in several surveys and proves to be a rather robust, reliable and valid instrument (De Leeuw 1992; Van Tilburg and De Leeuw 1991). In this study a combination of three loneliness measuring instruments are used: the aforementioned loneliness scale and two direct loneliness measuring instruments. The latter two are formulated as follows: 'I sometimes feel lonely' with answer categories: no (1), more or less (2), and yes (3); and, 'If we divide people into: the not lonely, the moderately lonely, the severely lonely and the extremely lonely, what would you consider yourself to be?' with answers ranging from 1 (not lonely), to 4 (extremely lonely). A so-called total loneliness score was constructed, in which the sum of the six negative scale items accounted for half, and both direct measures accounted for a quarter of the total score. The scores were converted into a range from 0 (not lonely) to 1 (very lonely).

Household composition. When investigating household composition, we differentiate between elderly living with a partner (with or without children), and elderly without a partner. In this final category we differentiate between three subcategories: elderly living in a one-person household, elderly living with child(ren), and elderly in institutions.

Network size. The networks of persons with whom the respondents maintained important and frequent relationships were delineated by using a procedure based on Crochan *et al.* (1990). Seven categories were distinguished: people who live in the same household, children, children-in-law, other relatives, neighbours, friends and acquaintances. In each of the categories, the respondents were asked to name people above the age of eighteen with whom they had an important and regular relationship. The size

of the network was determined by the number of people who were named in the various categories.

Social support. Questions about support were posed regarding a maximum of twelve of the relationships. These were the relationships with the highest contact frequency; people living in the same household were assumed to have daily contact. Questions were posed about receiving emotional support. The mean frequency of support per relationship, within the eleven (or fewer, if fewer available) relationships other than with the partner enabled us to assess the intensity of emotional support received from the network, ranging from 0 (no support) to 3 (high level of support).

Health. The instrument used in this investigation was a question about the respondents' perception of their own health: 'How is your health in general?' Answers could be given on a five-point scale, ranging from one (poor) to five (very good).

Socio-economic resources among the elderly were analysed using three indicators: educational level, home ownership and net household income. Respondents were asked about the highest educational level they had attained, transferred into number of years needed to complete this education, ranging from 1 (lowest level) to 8 (highest level). Respondents were asked whether they owned a house, but no detailed information on net household income was provided by the two surveys. A rough indication was obtained by showing respondents a card with income brackets (net monthly and net annual income was given). Respondents were asked to indicate the number corresponding to their income bracket; item non-response proved to be around twelve percent. The information about household incomes obtained in this way provides us with the possibility to roughly compare differences between elderly with higher and lower levels of financial resources; direct estimations of the socio-economic situation of the elderly and comparisons of the absolute levels of financial opportunities of older adults are not allowed.

6. PROCEDURE

After presenting rough data about the main variables of the two surveys we will continue with an analysis of the differences in socio-economic resources using a Multiple Classification Analysis. This type of analysis is well-suited to an examination of subgroup differences, when the dependent variable, such as net household income, is continuous. The results of the analysis show how much each category of older adults deviates from the

overall mean in their resources. Next, a stepwise hierarchical regression analysis is used to determine the multivariate associations between socio-economic resources and cohesion in several areas on the one hand, and loneliness on the other¹. In this analysis, the independent variables are household income, home ownership, educational level, the presence of a partner relationship in combination with other characteristics of household composition, network size, and the mean intensity of emotional support received from within the social network. The significance of a number of control variables such as sex, age, and health is also tested.

7. RESULTS

7.1 *Rough data about loneliness*

The mean score on the total loneliness indicator (ranging from 0 to 1) for the respondents in the Netherlands is .17 ($N=1548$, $SD=.25$) and for the Tuscan elderly .22 ($N=1548$, $SD=.25$). We can state that *in general* the elderly are not characterized by extreme feelings of loneliness but by moderate feelings of loneliness. However, the score of the Tuscan elderly is significantly higher than the score of the elderly respondents in the Netherlands ($t=-4.8$; $p<.001$).

7.2 *Household composition*

The percentage of older adults living with a partner as registered in the NESTOR and OLIVAR surveys is 82 and 86, respectively (see Table 1). However, older adults in Tuscany more frequently live in a household with a partner *and* with children than older adults in the Netherlands, partly due to differing patterns of home leaving by young adults in the two countries. Among the elderly without a partner, a majority in the Netherlands live independently in a one-person household, whereas about half of the Tuscan elderly who do not have a partner live in a household with their children; less than half of them live in a one-person household.

¹ Based on Winshop & Radbill (1994), results from regression analysis on weighted and unweighted Dutch data, respectively, have been compared. Only marginal differences have been registered. We therefore decided to use the weighted data for the sake of optimal country comparisons.

TABLE 1

Household composition of elderly men and women in the Netherlands (1992; N=1548) and Tuscany, Italy (1993; N=1548)

Household composition*	Netherlands		Tuscany	
	Males	Females	Males	Females
With partner, without children	486 (65.9)	367 (45.2)	344 (46.7)	238 (29.3)
With partner, with children	120 (16.3)	70 (8.6)	288 (39.1)	181 (22.3)
One-person household	107 (14.5)	324 (40.0)	48 (6.5)	167 (20.6)
Without partner, with children	10 (1.4)	33 (4.1)	39 (5.3)	180 (22.2)
Without partner, without children, with others	15 (2.0)	17 (2.1)	18 (2.4)	45 (5.5)
Total	737 (47.6)	811 (52.4)	737 (47.6)	811 (52.4)

* Not institutionalized.

7.3 *The size and support of the social network*

Sharp and significant differences exist in the size of the network, the total number of persons with whom a regular and important relationship is maintained, between Tuscan and Dutch older adults: 5.01 and 14.20, respectively ($t=34.8$; $p<.001$). A more in-depth analysis of this difference (not explicitly reported in this study; Van Tilburg, de Jong Gierveld, Lecchini and Marsiglia 1995) showed that, compared to the Dutch respondents, the Tuscan respondents indicated fewer network members for all partial networks such as a smaller proportion of children (alive), but also a smaller proportion of in-laws, neighbours and other non-kin such as acquaintances.

In contrast, the relationships indicated by Tuscan respondents prove to be more 'active': on average more emotional support is received than in the Netherlands. Mean emotional support per relationship received by Tuscan respondents is 1.78. The mean emotional support per relationship received by Dutch respondents is 1.58. The difference is significant ($t=-7.5$; $p<.001$)

TABLE 2

Results of a multiple classification analysis of household income, by age and household composition of elderly men and women, the Netherlands (1992; N=1584)

	Males			Females		
<i>Grand mean</i>	NLG			NLG		
	2859.56			2278.86		
<i>Age</i>	<i>n</i>	adj. deviation	β	<i>n</i>	adj. deviation	β
55-59	115	+472.43		90	+376.64	
60-64	172	+203.65		150	+124.54	
65-69	153	-105.91		117	-106.67	
70-74	125	-240.90		153	-91.62	
75-79	56	-370.57		60	-244.60	
80-84	52	-346.35		74	-96.74	
85-89	12	-364.86		31	-127.07	
			.23			.15
<i>Household composition*</i>						
With partner, without children	449	+174.64		295	+519.29	
With partner, with children	110	-18.09		54	+83.18	
One-person household	103	-572.10		285	-455.03	
Without partner, with children	9	-467.12		26	-853.54	
Without partner, without children, with other(s)	14	-937.45		15	-327.74	
			.24			.41
<i>R Squared</i>			.108			.216

* Not institutionalized.

7.4 Health in general

The data show clear differences in subjectively experienced health: the mean level of reported subjective health is 3.13 for older adults in Tuscany, and 3.69 for the Netherlands' respondents. Again, the difference is significant ($t=16.0$; $p<.001$).

TABLE 3

Results of a multiple classification analysis of household income, by age and household composition of elderly men and women, Tuscany, Italy (1993; N=1584)

	Males			Females		
<i>Grand mean</i>	Lit.			Lit.		
	1,766,904			1,352,312		
<i>Age</i>	adj.			adj.		
	<i>n</i>	<i>deviation</i>	β	<i>n</i>	<i>deviation</i>	β
55-59	99	+535,320		98	+203,816	
60-64	154	+198,496		155	+139,096	
65-69	144	-62,832		125	+81,512	
70-74	114	-67,664		147	-180,432	
75-79	52	-539,352		62	-80,328	
80-84	55	-619,176		73	-71,952	
85-89	9	-519,144		33	-435,528	
			.21			.13
<i>Household composition*</i>						
With partner, without children	301	-49,296		215	+47,776	
With partner, with children	243	+102,848		158	+291,376	
One-person household	41	-109,592		130	-75,880	
Without partner, with children	28	+136,664		152	201,656	
Without partner, without children, with others	14	-677,624		38	-363,680	
			.09			.14
<i>R Squared</i>			.045			.050

* Not institutionalized.

7.5 General data, and results of the MCA analysis regarding socio-economic resources

There was a difference in educational level of older adults: the mean level of education is 2.73 for respondents in Tuscany and 3.41 for respondents in the Netherlands. The difference is significant ($t=10.4$; $p<.001$).

We saw sharp differences in home ownership: among older adults in Tuscany, 70 percent are home owners, as opposed to only 37 percent among Dutch older adults. The low percentage among Dutch older adults can be explained by age and cohort factors, as well as by the Dutch system of

housing corporations providing high-quality social housing programmes for large proportions of the population in the larger cities of the country. The system was introduced in the 19th century. Whereas 55 percent of all males aged 55 to 59 are home owners in the Netherlands, this is only the case among 24 percent of males aged 84 to 89 (Liefbroer and De Jong Gierveld 1995).

Tables 2 and 3 show differences in household income according to age, household composition and sex for respondents of each of the two countries separately. Each column gives the general mean, and for each designated category, the deviation from that mean. For instance, the first column shows that men have reported a mean household income of NLG 2859.56 in the Netherlands, and an income of Lira 1,766,904 in Tuscany. The female respondents reported mean household incomes of NLG 2278.86 and Lira 1,352,312 respectively, indicating a sex difference in household incomes. As can be seen from tables 2 and 3, the 'younger elderly' have higher income levels than the 'older adults'. However, the age differentials in household incomes among men are larger than among women. Furthermore, the biggest differences exist between people under the age of 65 and those over that age, which suggests that retirement is one of the most important factors at play. There are also large differences in household incomes according to household composition. Generally speaking, we find support for our first hypothesis, namely that the economic status of the elderly respondents in both countries varies by household structure, sex and age.

However, the data given in tables 2 and 3 also indicate differences in the patterns of socio-economic resources, by age, sex and household composition. For male respondents in both countries the mean household income of those without a partner and living with children is better than the mean household income of elderly men living alone. For the female elderly respondents, on the other hand, the mean household income of those living in a one-person household is higher than the income of those without a partner, living with children.

Older respondents in Tuscany who live with a partner and with children report a higher mean household income than older men and women with a partner but without children. However, in the Netherlands, older adults who live with a partner and with children report a lower mean household income than older men and women with a partner but without children.

Tables 4 and 5 provide overviews of the means and standard deviations for the different determinants of loneliness used in this study, as well as the correlations with loneliness. Both tables 4 (the Netherlands), and 5 (Tuscany) show in the size of reported zero-order correlations that the socio-

economic resources available to older adults - home ownership, household income level and educational level - are all associated with lower loneliness scores, as expected in hypothesis 2.

As can be seen in tables 4 and 5, the loneliness scores of the elderly differ significantly depending on the type of household they are in. As was expected, the elderly living with a partner are generally less lonely than others. Elderly living in one-person households in particular show high loneliness scores. The differences in mean loneliness scores between those living in one-person households and other household compositions without a partner compared with those living with their partners, are significant, and they correspond with existing ideas about the cohesive functions of the nuclear family and partnership bonds in particular.

As expected, network size is negatively correlated with loneliness, as are the mean scores for emotional support received. The subjective reports about health in general are significantly and negatively correlated with loneliness, again as expected. Hypothesis 3 can thus be confirmed. Finally, better health conditions are also associated with lower loneliness scores.

7.6 Hierarchical regression analysis

Hierarchical regression analysis is performed to assess whether variables indicating socio-economic resources and variables indicating cohesion contribute to an explanation of the variance in loneliness scores among the elderly. Variables are entered in steps, starting with socio-economic indicators, together with characteristics of one's household composition, age and sex. According to the data in table 1, household composition, age and sex are directly connected to socio-economic resources and we have to take that into account from the beginning of the analysis. Next, the size of, and emotional support received in the social network are introduced. In the final step health is entered.

Table 4, step 1 shows for the Dutch elderly that the socio-economic variables, together with household composition, age and sex, explain 18.0% of the total variance in loneliness. Significant loneliness provoking contributions stem from 'living in a one-person household', and, to a lesser degree, from 'living without partner, with children'. Living with a partner, either with or without children, is recognized as a factor contributing significantly to lowering the intensity of loneliness. The three socio-economic variables are not significantly related to loneliness.

The size of the social network and the emotional support received in the network add, in step 2, an extra 1.1% explanation for the Dutch elderly.

TABLE 4

Results of a hierarchical regression on loneliness, older persons in the Netherlands (1992; 1344 ≤ N ≤ 1548)

	<i>M</i>	<i>SD</i>	<i>R</i>	Step		
				1	2	3
				$\beta(p)$	$\beta(p)$	$\beta(p)$
<i>Loneliness</i>						
ALOTOT (0 → 1)	.17	.25				
Age at day of interview	69.29	8.18	.14	.00(.997)	-.01(.612)	-.02(.386)
Sex	1.52	.50	.18	.05(.075)	.06(.025)*	.06(.027)*
<i>Household composition</i>						
With partner, without children	.53	.54	-.29	-.20(.001)**	-.19(.001)**	-.19(.001)**
With partner, with children	.10	.36	-.12	-.16(.001)**	-.15(.001)**	-.15(.001)**
One-person household	.26	.48	.37	.24(.001)**	.23(.001)**	.23(.001)**
Without partner, with children	.01	.22	.06	.09(.001)**	.09(.001)**	.09(.001)**
Income ^a	2570.99	1267.54	-.20	-.04(.235)	-.03(.351)	-.01(.766)
Own house? No, yes (0,1)	.37	.48	-.10	.00(.987)	.01(.756)	.02(.508)
Educational level	3.41	1.93	-.08	-.01(.788)	.01(.817)	.02(.507)
Network size	14.20	9.60	-.17		-.10(.001)**	-.09(.001)**
Mean emotional support received	1.54	.85	-.08		-.05(.063)	-.05(.067)
Health in general	3.69	.87	-.25			-.20(.001)**
Total adj. <i>R</i> ²				.180	.191	.231

Notes: ^a Household income in Netherlands guilders; * $p < .05$; ** $p < .01$.

TABLE 5

Results of a hierarchical regression on loneliness, older persons in Tuscany (1993; 1318 ≤ N ≤ 1548)

	<i>M</i>	<i>SD</i>	<i>R</i>	Step		
				1	2	3
				$\beta(p)$	$\beta(p)$	$\beta(p)$
<i>Loneliness</i>						
ALOTOT (0 → 1)	.22	.25				
Age at day of interview	68.32	8.17	.13	.00(.907)	-.01(.802)	-.04(.117)
Sex	1.52	.50	.21	.10(.001)**	.10(.001)**	.08(.005)**
<i>Household composition</i>						
With partner, without children	.34	.55	-.14	-.15(.001)**	-.15(.001)**	-.14(.001)**
With partner, with children	.26	.52	-.20	-.20(.001)**	-.19(.001)**	-.18(.001)**
One-person household	.10	.41	.18	.18(.001)**	.18(.001)**	.18(.001)**
Without partner, with children	.10	.41	.03	-.02(.424)	-.02(.396)	-.01(.636)
Income ^a	1548,560	1509,216	-.12	-.04(.173)	-.03(.218)	-.03(.271)
Own house? No, yes (0,1)	.70	.46	-.14	-.08(.002)**	-.08(.002)**	-.08(.003)**
Educational level	2.73	1.69	-.12	-.07(.013)*	-.07(.011)*	-.04(.181)
Network size	5.01	3.93	-.12		-.06(.025)*	-.05(.042)*
Mean emotional support received	1.78	1.04	-.09		-.04(.118)	-.04(.087)
Health in general	3.13	1.06	-.29			-.22(.001)**
Total adj. <i>R</i> ²				.142	.149	.185

Notes: ^a Household income in Italian liras (corresponding to *M*=1935,70 and *SD*=1886.52 in Dutch guilders); * *p* < .05; ** *p* < .01.

The most important contribution in this field comes from the network size; mean emotional support received is of secondary importance.

In step 3 subjective health explained an additional 4.0% of the variance in loneliness scores among the Dutch elderly (total adjusted $R^2 = 23.1\%$).

In the first step 14.2% of the variance in loneliness among the Tuscan elderly, is explained by socio-economic variables, in combination with household composition, age and sex (see table 5). *Two* of the three indicators of socio-economic resources contribute significantly to an explanation of variance in loneliness: people who do not own a house and those with the lowest educational levels are more prone to high loneliness scores than other elderly. Cohesion within the realm of partner bonds and household composition offers a significant explanation of the variance in loneliness scores, as shown in table 5. Living with a partner contributes significantly to lowering the intensity of loneliness scores; while living in a one-person household is to be seen as loneliness provoking. Table 5 shows that the cohesion variables as introduced in step 2 are responsible for a 0.7% additional explanation of loneliness: the size of the network is a significant contributor. Subjective health contributes significantly to an explanation of loneliness (see table 5, final step). This variable explains an additional 3.6% of the variance in loneliness scores (total adjusted $R^2 = 18.5\%$).

8. DISCUSSION

It is a fallacy that all elderly are lonely members of society. It is also a fallacy that loneliness comes automatically with age. The data presented in this paper show clearly that while there is a lot of variation in the intensity of loneliness among the elderly, the mean scores on a loneliness scale ranging from 0 (not lonely) to 1 (very lonely) is only .17 and .22 for the Dutch and Tuscan elderly, respectively. Furthermore, the study provided zero-order correlation coefficients between age categories and loneliness, indicating an increase in loneliness with increasing age. However, further analysis revealed that socio-economic indicators and cohesion variables are much more decisive for loneliness intensity than age. This appears to be the case for Dutch as well as Tuscan elderly.

The age-specific distribution of the elderly over household types is another important outcome of this study. The proportion living alone is much higher among the elderly in the Netherlands than in Tuscany. A possible explanation for these differences could be a difference in family size. However, official statistical data show that the largest families are to be

found among the Dutch elderly and not among the elderly in Tuscany. So this explanation does not hold. On the other hand, an economic explanation must not be ruled out. Living together in a joint household is often the way in which adult children assist in the support of older persons who do not have economic resources (Shanas 1968). This economic motive can perhaps be used to explain the fact that older females living without a partner, but with children, have lower household incomes than older females without a partner who live alone, contrary to our expectations.

Another country-specific outcome of the study is the fact that older adults in Tuscany living with a partner but without children report lower mean household incomes than older adults living with a partner and with children; this is in contrast to the situation in the Netherlands, where older adults living with a partner but without children report higher mean household incomes than older adults living with a partner and with children. It is worth investigating further the norms and values concerning the payment of a part of their income by young adult children to their parents - to strengthen the household income level. This is generally not adhered to in the Netherlands, in contrast to Italy.

Socio-economic resources will always be one of the contributors to the elderly's well-being. Guaranteeing a basic household income level above the poverty line will be one of the most challenging policies for all developed countries who maintain high moral standards concerning the well-being and participation of the elderly in society. In principle, broad support for such policies can be expected, as the MOAB 1994 results show (Van Leusden and Moors 1995): 67 percent of the population of the Netherlands mention explicitly their willingness to pay higher premiums for old-age pension schemes, either as a first or as a second option to guaranteeing public pension schemes for the over-65. In the Netherlands, the zero-order correlation of household income with loneliness is $-.20$. After controlling for network characteristics and household composition, the household income level had a surprisingly small impact on the loneliness of the Netherlands' elderly. Given the extensive literature underlining the sociological impact of these factors on well-being, stronger associations were expected. But the result is in accordance with the findings of others such as Mizan (1994), and Moorer and Suurmeijer (1992) and can perhaps be attributed to the overall relatively 'high' level of the basic AOW pension system. Among the Tuscany respondents, however, socio-economic resources prove to be significantly related to loneliness, also after controlling for household composition and network characteristics: home ownership proves to be very important and relates significantly to loneliness, also after controlling for

household composition, network characteristics, health, sex and age. Further research is needed to clarify these striking differences.

As far as the striking differences in the size of the network and the size of the partial subnetworks of children, brothers and sisters of the elderly are concerned, one has to take into account that the drop in the annual birth rate started much earlier (about 1920) in north and central Italy (Terra Abrami and Sorvillo 1993) than in the Netherlands. In the Netherlands, the decline set in later (around 1965-1970) and was more abrupt. So, the numbers of ever-born brothers and sisters of the elderly in Tuscany are significantly lower than in the Netherlands; the same pattern can be seen among the numbers of children ever born to persons aged 55 and over. This fact has to be taken into account when explaining the size of the network realized. Another explanation could be that the smaller network size as reported by Tuscan older men and women is influenced by a stronger selection out of the available potential network members. This mechanism could also be responsible for the next finding.

One of the most important results of this study concerns the fact that relationships as reported by Tuscan respondents prove to be more 'active' than those of Dutch elderly. Existing literature provides some support for this research finding. A study by Dooghe (1991) says that, compared to the situation in other countries, the frequency of contacts between elderly parents and their children seems to be far lower in the Netherlands, where only half of the elderly who live independently are visited at least once a week by their children, and where one out of seven elderly is rarely visited by their children.

The data presented in this study show that several aspects of cohesion are indeed significantly related to loneliness. Household composition is important: elderly living with a partner are less lonely than other elderly, especially elderly living alone. Living without a partner but with children yields less loneliness in Tuscany, more loneliness in the Netherlands. It is suggested that these differences are caused directly by different social evaluations of care provided by family members in the form of a joint household: an attractive alternative in Italy, a last resort in the Netherlands where the elderly prefer intimacy, but at a distance. Network size is significantly and negatively correlated with loneliness in both countries, as expected, as is the mean emotional support received by the elderly. The effects of health, sex and age on loneliness are also comparable.

Summarizing, we can say that material resources are significant and country-specific. Differences in social security and pension systems need further investigation to clarify in detail the relationship between education,

household income level and home ownership on the one hand, and loneliness on the other hand. But the theme has proven to be very important, as expected. Immaterial resources in social relationships significantly affect loneliness and according to patterns found in all Western countries. It makes sense to conclude that these patterns are more general, and perhaps universal.

ACKNOWLEDGEMENTS

The authors would like to thank Aart C. Liefbroer for his valuable comments on the draft of this article.

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