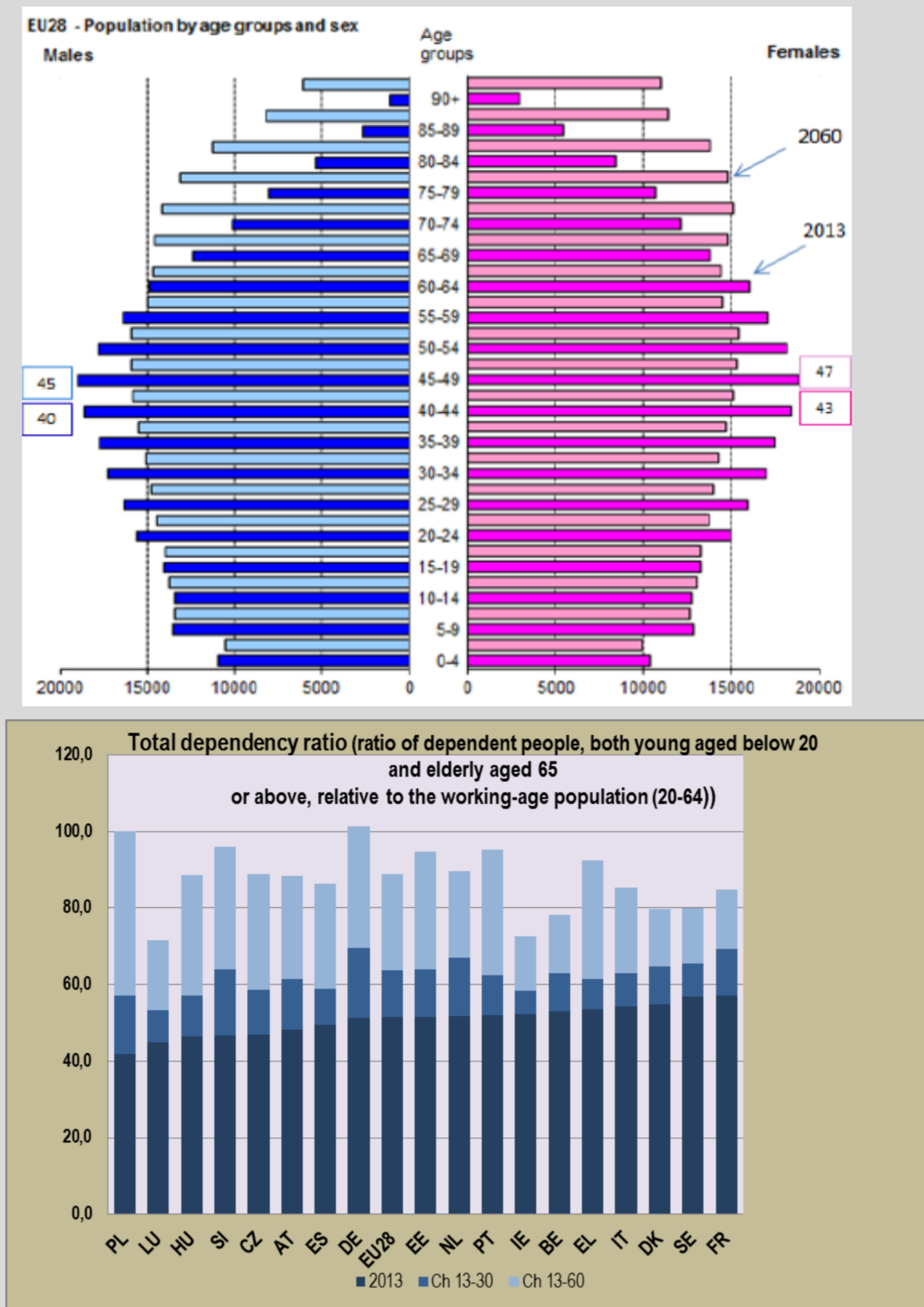




Introduction

- Fertility dynamics, life expectancy and migratory movements determine the structure of European population. Population which increases in size but will also be older and older.
- In a context where the fertility rate is under the natural reposition rate which is 2.1, and this way will be in the future. EUROPOP2013 projections show the increase in life expectancy in European countries. Especially for women which is in 83.1 years in 2013 and arrives at 89.1 years in 2060. Moreover, these projections indicate that life expectancy at 65 years old will increase an average of 4.7 years in both sexes. In 2060, life expectancy at 65 years old will be 22.4 years higher for men and 25.6 years for women.
- The population pyramid (figure 1) plans important changes, in 2013 the average age for men and women is 40 and 43 years respectively, in 2060 it will increase until 45 and 47 years. The implications of these trends are that dependency rate for people over 65 will increase from 27.8% in 2013 to 50.1% in 2060 (graphic 1). Increasing the participation of older people.
- Population aging is a social conquest. However, we have to take into account two important aspects. The first one, the rise of personal autonomy losses and dependency situations related to age which imply more care needs, especially in older ages (over 80). The second one, current social dynamics and the decreasing in informal support increase the need of a governmental response to this increasing social demand.
- Social changes as a consequence of the increasing participation of women in job's market, the reduction in household sizes and the dynamics in them generate alternative sceneries to the traditional care patterns of the private field.



Source: Commission services, Eurostat, EUROPOP2013

Theoretical framework

Typology of personal care by provider

- Informal care:** care provided by family members, friends or neighbours for long period of time.
- Formal care:** receipt includes professional or paid nursing or personal care, professional or paid home help for domestic tasks, and meals-on-wheels. It also includes home care or paid home help from private providers.
- Mixed cares:** group of tasks related to daily activities done from the complementarity of formal carers- professional services provided by public or private organisations- and informal ones, developed in the personal social surrounding of the person. They are based in a complex system which combines the intervention of the family, the market and the government.

Models of care arrangements

- The hierarchical compensatory model:** the choice of caregivers followed an ordered preference according to the primacy of the relationship between the caregiver and recipient. Informal caregiver → Formal caregivers.
- The task- specific model:** proposes that tasks and groups can be classified along parallel sets of dimension. The model assumes that each of the formal and informal caregivers has capabilities that are best suited to different types of tasks. Formal caregivers = ∪ Severity situation done complex skill and task (adl+iadl); Informal caregivers = ∩ Severity situation done little skill and task (adl)
- Supplementary or complementary model:** formal cares are designed as a supplement for informal care tasks and as a support for the natural support's network. Different researches affirm that due to the reduction of autonomy in the old person and the addition of formal cares as a response to the increasing specialization of cares, the attention received by means of the social net of informal cares does not change. On the other hand, the formal cares when designed as a complement improve the efficiency of the informal cares attention, maintaining the roles of each of them. Informal caregivers + formal caregivers = mixed responsibility of care (mixed cares).
- The substitution model:** suggests that formal care will substitute for informal care, and that informal carers will withdraw their support for older family members because of formal services. Formal caregivers or informal caregivers (only one).

Purpose

The objective of this study was to detect the explanatory factors which determine the characteristics of the personal cares receipt among people who are over 65 and disabled, in the group of European countries SHARE w5. As well as, measuring the degree of influence which the factors cause in the receipt of mixed cares, a typology which combines informal and formal cares.

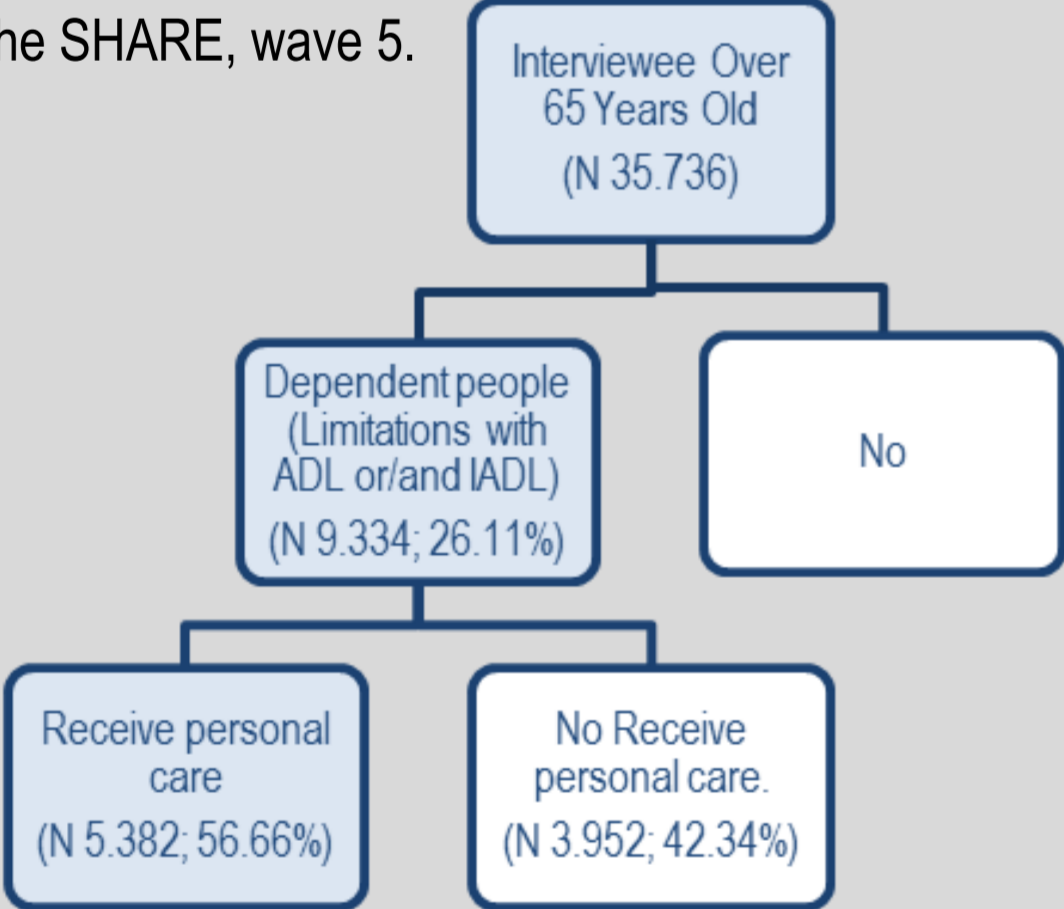
Methodology

Main concepts

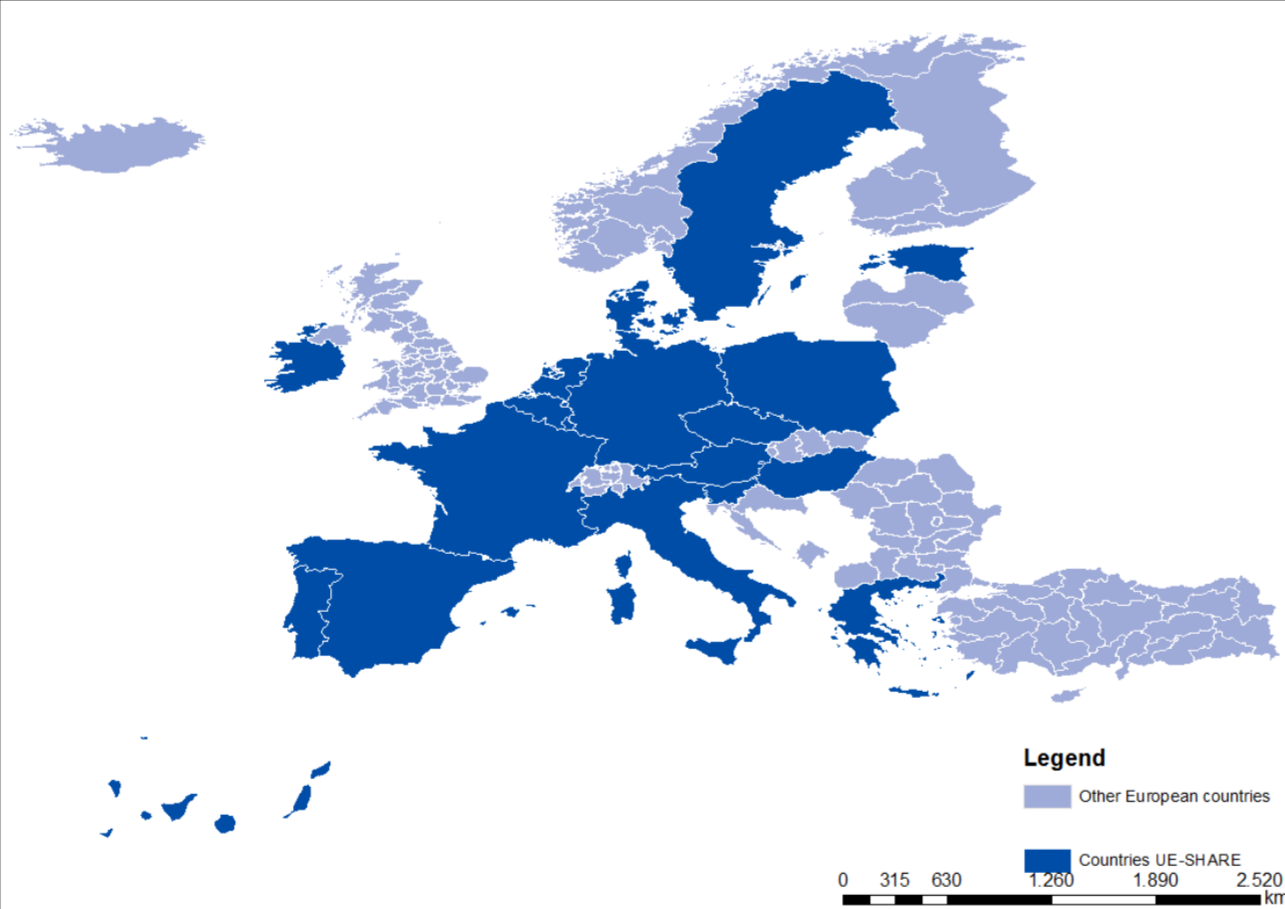
- Dependence is a state in which persons, by reason of lack or loss of physical, psychological or intellectual autonomy, require significant assistance or help in carrying out their usual day-to-day activities.
- Activities of Daily Living (ADLs) are a defined set of activities necessary for normal self-care. The activities are: dressing, walking across a room, eating...
- Instrumental Activities of Daily Living (IADLs) are defined as those activities whose accomplishment is necessary for continued independent residence in the community. The activities are:, preparing a hot meal , shopping for groceries , making telephone calls, taking medications , managing money...

Sample construction process

- Data used from the SHARE, wave 5.



Study area location: Union European countries



Descriptive data for the study sample (Table1)

Variables	N	%
Informal care	1.811	33,6%
Formal care	1.831	34,0%
Mixed care	1.740	32,3%
Total (people receive personal care)	5.382	100,0%
Variables	N	%
Sex of interviewee		
Man	1.716	31,9%
Woman	3.666	68,1%
Age of interviewee		
65-74	1.434	26,6%
75-84	2.368	44,0%
≥ 85	1.580	29,4%
Severity of dependence Degree		
Moderate	2.301	42,8%
Severe	2.247	41,8%
Total	834	15,5%
Marital status		
Married	2.524	46,9%
Never married; Divorced/ Living separate	648	12,0%
Widowed	2.210	41,1%
Years of education		
< 10 years	3.397	63,1%
> 11 years	1.985	36,9%
Age of spouse/partner		
≥ 64	658	12,2%
65-74	905	16,8%
≥ 75	789	14,7%
No partner	3.030	56,3%
Years of education of partner		
< 10 years	1.346	25,0%
> 11 years	1.033	19,2%
No partner	3.003	55,8%
Area of building		
Rural Area	1.619	30,1%
Urban Area	3.763	69,9%
Household size		
One member	2.297	42,7%
Two or more members	3.085	57,3%
Children presence		
No children	645	12,0%
Children	4.737	88,0%
Sex of children		
No children	645	12,0%
man	2.561	47,6%
woman	2.176	40,4%
Household annual income		
≤ 12.000€/annual	2.182	40,5%
12.001 - 24.000 €/annual	1.671	31,0%
≥ 24.001 €/annual	1.529	28,4%
Regular economic benefits from the state		
Receive	5.069	94,2%
No receive	313	5,8%
Paid out-pocket for nursing home/home care		
Exempt from payment	3.298	61,3%
≤ 1.200 €/annual	1.310	24,3%
> 1.201 €/annual	774	14,4%

Statistical Analysis

Categorical Principal Components Analysis

- Sample characteristics (N 5.382) cases: dependent people of 65 years old and over, who receive personal care and living at home. The variables included are: social networks, age, area of building, dependence severity degree (Table 1).

- Purpose: describing the structure and the interrelations among the variables originally involved in the personal care of old dependent people (Table 1). Allowing a synthetic interpretation of the research.

Binary logistic regression analysis

- Sample characteristics (N 3.642) cases: dependent old people over 65 who receive personal cares, particularly informal or mixed cares. Not taking into account those who only receive formal cares.

- Purpose: to analyze the degree of influence of the 6 factors obtained by the reception of mixed-cares, as a typology combining formal and informal cares. The dependent variable is *receiving personal cares* two categories: mixed-cares (value 1) as the reference value and informal cares (value 0).

Statistical analysis was performed using SPSS 20.

Results

Categorical Principal Components Analysis

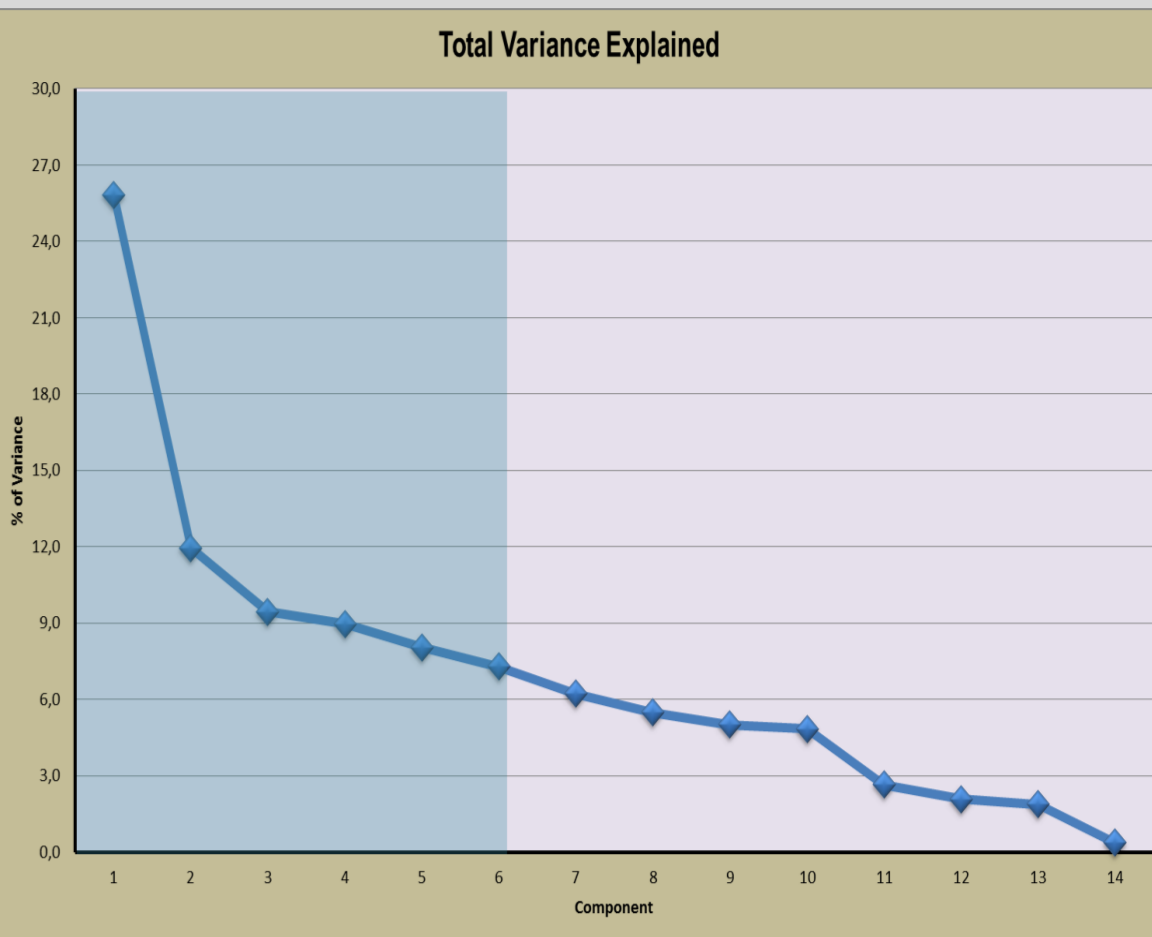
the application of the model shows six factors extracted and the correlations between the variables and each factor, which explains the 71.5% of the total of the variance.

Rotated Component Matrix.

Variables	Component					
	1	2	3	4	5	6
Age of spouse/partner	0,923	-0,088	0,002	0,004	-0,039	0,061
Year of education of partner	0,945	-0,094	0,017	-0,007	-0,025	0,041
Household size	0,802	-0,158	0,034	-0,071	0,017	0,019
Marital status	0,864	0,047	0,143	-0,035	0,044	-0,089
Sex of children	-0,157	0,905	0,025	-0,048	0,03	0,034
Children presence	-0,052	0,926	-0,015	-0,010	-0,005	-0,036
Age of interviewee	0,213	-0,002	0,695	0,103	0,009	-0,03
Severity of dependence Degree	-0,078	0,015	0,740	-0,045	-0,101	0,030
Total annual household income	-0,202	0,020	-0,207	0,762	-0,095	0,011
Paid out-of-pocket for nursing home/home care	0,11	-0,087	0,294	0,761	0,104	0,048
Sex of interviewee	0,379	0,052	-0,117	0,043	0,652	-0,129
Regular economic benefits from the state	-0,238	-0,012	-0,006	-0,025	0,771	0,109
Area of building	0,16	-0,16	0,139	0,46	0,139	0,852
Years education	0,018	0,024	-0,356	0,19	-0,269	0,570

Extraction Method: Principal Component Analysis. Rotation Method: Component Score.

Total Variance Explained.



Factors	Characteristics	Explained variance
Factor 1 : the characterization of the social network	They have high charges in those variables which characterize the social network of the dependent person like the age of the partner, the partner's academic level, the household size, the marital status.	25,80%
Factor 2 : The descendants network	The variables with a higher weight are those which include the information about the presence of children and the gender of them. This factor characterizes those who present personal cares in their usual social surrounding.	11,94%
Factor 3 : The dependence situation	The variables which form this factor are those which measure the association between the age and the dependence situations and its severity. It gives information about the dependent person characteristics.	9,44%
Factor 4: Household income and cost service	It is used to measure how the formal cares are presented in the house surrounding. By means of the economic variables such as the household income and the economical contribution to the cost service of the formal cares they receive.	8,97%
Factor 5: Gender and economic benefits.	Factor which summarises if the dependant person receives or not the economic benefits and its link to the gender of the recipient.	8,05%
Factor 6: territory and education	The variables with more importance are the territory- rural or urban area- and the academic level of the survey respondent.	7,30%

Binary logistic regression analysis

the statistics used to test the consistence of the logistical regression model are the corrected version of the squared R of Cox-Snell, the squared R of Nagelkerke to know the goodness adjustment of the model. In our case it is significant (x2, p<0,001) with a R2 of Nagelkerke of 0.416, classifying correctly the 74.7% of the cases. The predicting factors of the use of mixed-cares will be determined after the analysis of the change probabilities using the odds ratio (OR).

+	Table 2 Binary logistic regression model. Dependent variable is mixed cares				
Factor 4		B	p- value	Exp (B)	I.C. 95% for EXP(B)
Factor 3	Factor 1: The characterization of the social network	,450	,000	1,569	1,447 to 1,701
Factor 1	Factor 2 : The descendants network	-,256	,000	,774	0,712 to 0,841
Factor 6	Factor 3: The dependence situation	,912	,000	2,488	2,274 to 2,723
Factor 5	Factor 4 : Household income and cost service	1,314	,000	3,722	3,339 to 4,150
Factor 5	Factor 5: Gender and economics benefits	,098	,019	1,103	1,017 to 1,197
Factor 2	Factor 6: Territory and education.	,215	,000	1,240	1,146 to 1,343
	Constant	,376	,000	1,456	
-	*Sample (N 3.642). Percentage Correctly predicted: 74,7%. R2 de Nagelkerke: 0,416				

- The economic component which involves mixed-cares, makes factor 4, the income and cost of the service, the one with the highest influence (OR 3,722) on the provision of this type of cares. Being completed with factor 5 gender and economical benefits (OR 1,103).
- Factor 3, dependance situation (OR 2,488), includes the main characteristics if these situations: age and level of seriousness, with a great influence in the provision of this type of cares.
- Dependent person social network (factor 1; OR 1,569), characterized by natural supports inside the house, its configuration is fundamental for mixed-cares. Nevertheless, factor 2 the descendants network, have an opposite influence to informal cares. Fundamental aspect from the point of view of mixed-cares and its complementary function.
- The residence characteristics and the education of the dependent, factor 4, have an influence of 1,24 probability in the reception of mixed-cares to informal cares.

Conclusions

In a context in which attention to dependent people is a challenge for European social politics. Recent studies show the uncertain impact of the cares system as a consequence of the demographic context, the new family structures and the reduction of informal cares. In fact, the hypotheses are centered on the role of informal and formal cares as a complement or substitute.

In this sense, our study shows the factors which determine mixed-cares in Europe:

- Mixed-cares represent the 32.3% of the total of people who receive cares in the European Union. A percentage which explains the efforts of social politics to established coordinated and complemented actions among family, market and Government in response to dependent people attention.

- The level of severity of the dependence situation and the age are explained as endogenous characteristics of the cares provision (Factor 3). The resulting hypothesis shows the addition of formal cares combined with informal ones as a complement, due to the existence of different levels of personal autonomy, high – moderated- or for those who need sporadic help -severe-, in order to avoid unnecessary institutionalizations and to keep the person in his/her own social surrounding.
- Mixed-cares are mainly explained by the situation of the dependent elderly (factors 4 and 5). It cannot be assured that mixed-cares are circumscribed to high level incomes. In this sense, our study indicates that mixed-cares are explained, apart from the incomes, from the contribution level to the cost of the service or the exemption of payment depending on the incomes, the economical provisions devoted to this end and the gender. Mixed-cares are not exclusive; they are accessible depending on the needs situation. This conclusion is formed as a future line of investigation.

- The circumstances of immediate support network- such as widowhood, reduced household size, elderly aged couple- determine the provision of mixed-cares (factor 1). Now then, factor 2 shows how the descendants are those who lead the informal cares provision. The combination of both factors stands out how mixed-cares are a complement for children's cares as a consequence of personal circumstances or of primary network support of the dependent's ancestor.

- The factor which relates territory and education explains the location of the type of care received and how the education of the old person- that is the number of academic years- affects the externalization of certain tasks to formal cares as a complement to the informal cares they receive.