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THE CHOICE OF BANKING FIRM: ARE THE INTEREST RATE A SIGNIFICANT CRITERIA?[a]

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Abstract:

The objective of the research is to know the factors that in Spain determine the choice of banking organization. The obtained results indicate that the dimension of the network of branches is the reason more valued. In spite of the increasing symmetry of the Spanish banking market, the preferences of the clients of the savings banks and those of the banks are not absolutely coincident, being the proximity - the main reason for election- much more valued by the former than by the latter. The existence of divergences in the preferences has also been detected according to the region and the typology of city of residence.

Keywords: Choice criteria, retail banking, logit multinomial.

JEL Codes: G20; G21.

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1. Introduction

Since the mid-1980s, a series of closely related factors have radically altered the structure of the Spanish Banking System. Firstly, the process of deregulation, begun some years ago, has reached its conclusion, thus lifting the restrictions that had previously limited the competition between spanish banks. Secondly, the so called desintemediation has increased the options available to customers giving them greater power to negotiate with different banking entities. Technological advances, particularly in the fields of telecommunications and IT, have significantly reduced the entry barriers to the banking market, thus allowing other companies – financial and non-financial – to offer products and services often with greater efficiency than existing banks and savings banks.

In this eminently competitive market "las cajas de ahorros"(savings banks) having steadily increased their market share with respect to banks and have become the principal agents in the Spanish Banking System. In light of these developments, the aim of this paper is to study the factors that influence the choice of baking entity in Spain. Despite the obvious importance of such question, there are virtually no studies of the spanish case and the body of academic literature on the subject is small. The methodology adopted here is a discrete choice model, where the dependent variable records the probability of a given event: in this case, the probability that an individual focuses on a particular factor when choosing a bank firm.

The paper is organised as follows. After describing the database used in the research (section 2) we analyse the factors that determine the choice of baking entity among spanish customers, focusing particularly on the socio-economic and geographical features that influence on this decision (section 3). We then present the factors that increase the probability of choosing a savings bank (section 4) and finally give the principal conclusions of the study.

2. Previous studies and database

Precise knowledge of the preferences of the users of banking services and, more specifically, of the factors that influence the choice of banking firm is a priority issue for banking entities, since their survival ultimately depends on this information. It should come as no surprise, then, that these companies periodically carry out systematic analyses of the preferences and habits of their customers and that the information obtained are considered "sensitive material". The strategic

character of this information and the lack of public databases[1] explains the relative scarcity of academic literature on the subject. There are nonetheless certain studies, such as Kaynk and Kucukemiroglu (1992), which analyse the determining factors behind the choice of banking entity in Hong Kong, Boyd (1994), which analyses the preferences of customers in the United States, Devlin (2002), which measures the importance of the level of education possessed by customers in their choice of company, and Devlin and Gerrard (2004), which orders the various selection criteria according to importance. Needless to say, there are considerable differences in terms of the methodologies used (personalised survey, phone survey, etc.), the sample size and the way in which the results are analysed.

On the spanish case, the work of Coello (1997) is in fact the only reference available. Coello uses a logit binomial to estimate the probability of choosing a bank or savings bank by analysing the characteristics of the customers and of the banking entities. In order to relate the characteristics of the entities, he constructs a group of proxys that represent the most relevant features: the price of products (based on interest rates of deposits and credit), the quality of service (employees per branch), the feeling of security transmitted (participation of the entity in the total national market) and the transport costs for customers (determined by the branches of each entity in each province). Aware that there are no data broken down geographically for many of the variables and that it is therefore not possible to ensure sufficient variability between individuals to provide significance, Coello groups the characteristics of the two entity types – banks and savings banks– based on the considered averages of the individual data, where the consideration is based on the relative importance of each entity within the region. The problem with this procedure is that all of the characteristics are essentially reduced to approximations of the number of branches in each region, which is why the approach was not used in this study.

Instead, we decided to exploit the information provided by the FRS/INMARK, a private consultancy firm that since 1988 study the financial habits of the spanish people through face-to-face interviews with a representative population sample. Participants in the survey are asked to specify which factors they considered when choosing a bank firm, making this a good starting point for determining the characteristics that carry most weight in the decision. The survey also provides most of the socio-economic characteristics of the participants (sex, marital status, age, level of education, level of income, profession), thus making it possible to estimate how they influence the selection of banking entity. We therefore know the region the participant is from, the town of residence and the name of the entity or entities they bank with, which will

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[1] One notable exception is the United States, where the Federal Reserve periodically publishes the "Survey of Consumer Finance" and releases the results to interested researchers.

allow us to identify possible variations in the reasons behind their choices due to particular regional characteristics (it is possible that certain features are valued more than others in certain regions of Spain) and according to the type of entity (bank or savings bank).
Fuente: FRS/INMARK

3. The choice of bank: determining factors

To facilitate the interpretation of results and subsequent econometric modelling, the features included in the survey have been placed into six groups: proximity, quality of service, security, recommendation, price and others. As can be seen in table 1, almost half of the survey participants (48.5% to be exact) consider the size of the network of branches (proximity) the main factor in the choice of bank firm[2]. It is understandable, then, that the managers of banking entities see the opening of new branches as the most efficient means of increasing market share, thus explaining why Spain is one of the western countries with the highest network of branches. It is more surprising that the group of "other reasons" ranks second (20.11%) in the relative importance between different selection criteria. This is explained by the fact that these factors (payment of bills by direct debit, mortgage management and receiving pay checks) should be considered more the consequences of banking with a particular entity rather than a selection criterion per se. Also notable is the high percentage of participants (18.34%) that claim to base their choice on the recommendation of a relative and/or through mere habit. Opportunities and incentives provided for child savings accounts seem to have a greater impact than expected, albeit considering that their influence decreases with customer age. The remaining factors considered by spanish customers when selecting a bank firm are quality of service and (to a far lesser degree) security. It is interesting to note the negligible influence of prices of financial products in the choice of bank or saving bank. This fact has also been highlighted in much of the existing international literature (Devlin and Gerrard, 2004, for example).

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[2] Given that we have only been able to consult the survey for 2003, the study shows the factors that influence the choice of banking entity at present; the analysis of possible changes in preferences that have developed over time must therefore be left for a subsequent study.

TABLE 1
Choice criteria

	Total	Savings banks	Banks
Observations number	8.000	4.684	2.724
Proximity	**48,5%**	**54,14%**	**39,87%**
to home	43,74	50,04	33,66
to work	3,69	2,80	5,51
Density of branches	1,08	1,30	0,70
Quality of service	**9,81%**	**7,49%**	**13,11%**
Friendliness	5,85	4,55	7,27
Efficient personal	1,90	1,30	2,94
Quick service	2,05	1,64	2,90
Security	**2,7%**	**2,16%**	**3,52%**
Solvency	1,04	0,81	1,32
Good reputation	1,66	1,35	2,20
Recommendation	**18,34%**	**17,63%**	**19,13%**
Tradition	9,31	10,95	6,46
Familiar recommendation	9,02	6,68	12,67
Price of products	**0,58%**	**0,45%**	**0,73%**
Competitive interest paid	0,20	0,15	0,33
Low interest charged	0,27	0,21	0,33
Low fees charged	0,09	0,09	0,07
Others	**20,11%**	**18,13%**	**23,64%**
Receiving pay checks	8,11	8,01	8,88
Mortgage	3,02	1,99	4,81
Payment of bills	6,09	5,91	6,28
Have a grant	0,22	0,15	0,29
Convenient location	0,23	0,30	0,07
It was the only one	0,27	0,23	0,33
For business	0,18	0,09	0,18
Others	0,86	0,66	1,17
Ns/Nc	1,13	0,79	1,62

Fuente: FRS/INMARK

The above results seems to suggest that spanish customers give greater importance to the extrinsic features of banking firms (the number of branches, the reputation and the strength of the company name, to give a few examples) than to the specific characteristics of the services required (the interest paid on credit and commissions charged for direct debits). A possible explanation for this behaviour is that the extrinsic features, since they cover the general aspects of the entity, are easier to evaluate than the specific characteristics, which are considered to be largely homogeneous between different entities.

The data in table 1 illustrate what is undoubtedly an important fact: the existence of differences in the strength of preferences between the customers of banks and those of savings banks. Note that although both groups consider proximity the principal reason for making their respective choices, savings bank customers value this factor for more than bank customers (with a frequency of 54.14%, compared with 39.87% for bank customers). It seems, then, that although

banks and savings banks are essentially comparable, customers continue to differentiate between the services they offer. We will return to this issue later in the paper.

3.1. The incidence of socio-economic characteristics

Having identified the factors that influence the choice of banking entity, the next step is to analyse the effect of individual characteristics on the stated reasons for customer choices[3] To this end, the explanatory variables have been divided into two groups: socio-economic (age, sex, level of education, marital status and level of income) and geographical (the region in which the customer lives and the size of the city of residence). Participants are asked decide between various unordered alternatives, so a multinomial logit[4] model is appropriate. In order to determine possible differences according to the type of banking entity selected, three different estimations were performed; the first includes all individuals regardless of whether they opt for savings banks or banks; the second considers only those individuals that choose savings banks; and the third considers only bank customers. Remember that the parameters are considered relatively to the base category of the endogenous variable[5] and that the parameters, when significant, indicate the direction in which the probability of preferring one determining factor varies, but they cannot be interpreted in terms of elasticity (they do not quantify the variation).

Table 2 shows the results of the combined estimation of socio-economic variables. The parameters associated with the age variable are significant and take negative values for recommendation (the youngest participants –those aged between 16 and 25– give greater importance to family recommendation or habit than older customers when choosing a bank

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[3] Before performing the estimations we depurated the data. To prevent correlation between the different alternatives, we discarded the observations of individuals who chose proximity as the most important factor and reasons such as quality of service or security as secondary factors. For the reasons explained (not being a deciding factor as such) we also discarded the observations of those individuals who claimed to have based their choice on "other reasons" and those of participants who did not provide relevant personal details (level of education, for example). Finally, we decided to focus the study on the operations of banks and savings banks, discarding the observations of individuals who opted for other types of financial companies. These decisions reduced the size of the sample, although it remains sizeable (4771 participants) and representative. Table 1.A of the appendix shows the composition of the FRS/INMARK sample and of the sample used in the econometric estimations.

[4] We consider an individual who must choose his bank for the next years. The choice will be made based on the selection criterion that will be most useful to the customer. Of course, a selection criterion does not increase usefulness by itself, but in the sense that it is based on an underlying attribute –for example, an individual that bases the selection on "transport costs" (that is, the size of the network of branches) will, by basing the decision on this factor, be able to find branches more easily, thus increasing the usefulness of the factor.

[5] By way of example, if we consider the quality of service variable and focus on the parameter of the explanatory variable levels of education, we would say that in comparison with the case of the proximity variable, customers with a high level of education give greater importance to the quality of service than those with a lower level of studies.

firm. This is probably because these younger customers are dealing with such companies for the first time and are therefore less well informed. As is to be expected, as the customer gains experience the importance of recommendation decreases while the relative importance of proximity increases. Age also conditions the importance given to the quality of service. Note that although customers give greater value to proximity as they grow older, from the age of 65 the relative value attached to the quality of service is greater than when the same customers were in the group of 16 to 25 year olds.

TABLE 2
Choice criteria

	Quality of service		Security		Recommendation	
	Prob.	Ef. Marg.	Prob.	Ef. Marg.	Prob.	Ef. Marg.
Constant	-2,482 (0,336)***		-3,806 (0.568)***		-0,601 (0.219)***	
			Socioeconomic variables			
Age						
16-25	*Category base*					
26-35	0,353 (0,281)		-0,270 (0.418)		-0,737 (0.156)***	-0,141 (0.023)***
36-45	0,226 (0,287)		-0,229 (0.424)		-1,005 (0.164)***	-0,185 (0.024)***
46-64	0,309 (0,295)		-0,153 (0.438)		-0,945 (0.173)***	-0,176 (0.025)***
65+	0,541 (0.309)*	0,106 (0.047)**	-0,156 (0.468)		-0,923 (0.191)***	-0,174 (0.025)***
Gender						
Female	*Category base*					
Male	-0,099 (0.090)		0,075 (0.153)		-0,086 (0.719)	
Education Levels						
Less high school	*Category base*					
High school	0,255 (0.125)**	0,022 (0.013)*	-0,199 (0.207)		0,210 (0.102)**	0,035 (0.019)**
Bachelor or higher	0,496 (0.157)***	0,039 (0.027)**	0,251 (0.251)		0,466 (0.125)***	0,073 (0.026)***
Marital status						
Single	*Category base*					
Married	0,411 (0.122)***	0,048 (0.013)***	0,283 (0.205)		-0,107 (0.093)	
Widowed	0,255 (0.213)		-0,542 (0.432)		-0,031 (0.167)	
Households Income levels						
Less than 900€	*Category base*					
901-1200€	0,322 (0.146)**	0,033 (0.018)**	0,137 (0.249)		0,124 (0.117)	
1201-1800€	0,410 (0.144)***	0,043 (0.018)**	0,085 (0.253)		0,162 (0.115)	
1801-2400€	0,504 (0.185)***	0,060 (0.026)**	0,432 (0.309)		0,062 (0.150)	
More than 2400€	0,484 (0.240)**	0,045 (0.032)	-0,026 (0.451)		0,362 (0.183)**	0,054 (0.038)

Note: The dependent variable is a qualitative variable that represents the reasons for choice proximity, quality of the service, security and recommendation. The base category of the independent variable is proximity. Method of estimation: logit multinomial. The marginal effects of those significant parameters are only shown The standard errors appear between parenthesis. (***): significant coefficient to 1%, (**) significant coefficient to 5%, (*): significant coefficient to 10%.

The parameter of the sex variable is not significant in any case, suggesting that gender does not influence the choice, while the marital status variable only appears to condition the importance given to the quality of service, this being an attribute valued more by married individuals or those with partners than by single individuals. As expected, individuals with high levels of education place greater importance on the quality of service than other customers. If we consider levels of education to be a proxy of the degree of knowledge about banking products and services, we could also assume that the higher the level of education possessed by customers, the less likely they would be to consider family recommendations when choosing a bank or savings bank. However, this initial impression is not supported by the evidence, since those individuals with a higher level of education also value recommendation more than the other groups.

The level of income variable shows significant parameters for quality of service as a determining factor (the value given to quality of service is greater the higher the income). A possible explanation for these results is that individuals with higher levels of income are more selective (and demand more personalised attention) and so give less importance to the size of the network of branches of a particular entity. It can also be seen that the parameter of the level of family income variable (income greater than 2400 Euros per month) is significant when recommendation is the determining factor.

3.2. The incidence of geographical characteristics

The strategies pursued by the different entities determine both the structure of markets (the number and characteristics of available companies) and the manner and degree of competition in a given area. Consequently, it is important not to rule out the possibility of significant differences in the strength of preferences depending on the region in which the respective participants reside. Indeed, as can be seen in table 3, residents of most regions (Asturias, the Canary Islands, Extremadura and Valencia) tend to give greater importance to the quality of service than participants in Catalonia. These above regions, together with Navarre, La Rioja and the Basque Country attach the greatest importance to security. Residents of Galicia, Murcia and Castilla La Mancha give the greatest value to recommendation. The city variable also provides interesting results; customers are less likely to value quality of service and personal recommendation the larger the town or city in which they live.

TABLE 3
Choice criteria

	Quality of service		Security		Recommendation	
	Prob.	Ef. Marg.	Prob.	Ef. Marg.	Prob.	Ef. Marg.
Spatial variables						
Region						
Cataluña	*Category base*					
Andalucía	0,783 (0.174)***	0,063 (0.024)***	1,013 (0.388)***	0,030 (0.020)	0,629 (0.147)***	0,082 (0.032)**
Aragón	1,112 (0.318)***	0,072 (0.049)	1,052 (0.691)***	0,017 (0.034)	1,200 (0.264)***	0,188 (0.63)***
Asturias	2,279 (0.337)***	0,282 (0.073)***	1,847 (0.713)***	0,040 (0.048)	1,299 (0.366)***	0,056 (0.073)
Baleares	0,264 (0.320)		1,511 (0.508)***	0,081 (0.050)	0,600 (0.251)**	0,085 (0.058)
Canarias	1,147 (0.226)***	0,110 (0.039)***	1,612 (0.502)**	0,032 (0.031)	0,795 (0.205)***	0,087 (0.046)***
Cantabria	1,032 0.427)***	0,078 (0.067)	1,767 (0.710)**	0,086 (0.047)	0,799 (0.308)**	0,075 (0.084)
Castilla la Mancha	0,403 (0.288)		1,212 (0.522)**	0,022 (0.028)	1,527 (0.196)***	0,315 (0.047)***
Castilla León	1,154 (0.236)***	0,066 (0.035)***	1,953 (0.438)		1,176 (0.201)***	0,149 (0.048)***
Extremadura	2,020 (0.300)***	0,183 (0.058)***	2,316 (0.547)***	0,082 (0.057)	1,484 (0.296)***	0,117 (0.065)**
Galicia	1,151 (0.214)***	0,022 (0.026)	1,667 (0.434)***	0,033 (0.026)	1,800 (0.170)***	0,315 (0.040)***
Madrid	-0,282 (0.248)		0,785 (0.444)*	0,027 (0.023)	0,606 (0.170)***	0,129 (0.038)***
Murcia	1,381 (0.286)***	0,055 (0.040)	1,038 (0.688)		1,788 (0.233)***	0,308 (0.054)***
Navarra	0,971 (0.387)***	0,090 (0.064)	1,703 (0.640)***	0,092 (0.069)	0,510 (0.369)	
Com. Valenciana	1,332 (0.193)***	0,118 (0.034)***	1,909 (0.400)***	0,083 (0.037)**	0,898 (0.173)***	0,076 (0.039)***
Rioja/País Vasco	-0,400 (0.317)		1,468 (0.440)***	0,086 (0.044)**	0,519 (0.202)**	0,091 (0.047)**
Size of city						
2.001-20.000	*Category base*					
20.001-100.000	-0,034 (0.116)		0,045 (0.206)		-0,274 (0.098)***	-0,052 (0.017***
100.001-1.000.000	-0,377 (0.114)*	-0,028 (0.011)**	-0,084 (0.194)		-0,399 (0.093)***	-0,064 (0.0.17)***
Barcelona capital	-0,921 (0.380)**	-0,068 (0.024)***	-0,381 (0.800)		-0,410 (0.260)	
Madrid capital	-0,758 (0.312)**	-0,059 (0.024)***	-0,482 (0.438)		-0,393 (0.175)**	-0,050 (0..031)
Observations	4.771					
Pseudo R^2	0.066					
LFV.	-4.898,23					

Note: The results displayed come from the same estimation that those of table 3. LFV = logarithm of the function of verisimilitude. The base category of the independent variable is proximity. Method of estimation: logit multinomial. The marginal effects of those significant parameters are only shown. The standard errors appear between parenthesis. (***): significant coefficient to 1%,(**): significant coefficient to 5%, (*): significant coefficient to 10%.

The separate estimations for banks and savings banks give similar results to those obtained in the combined estimation, so there is no apparent evidence to suggest that the probability of basing the decision on a given factor varies according to the entity considered[6] In other words, a high level of income does not necessarily lead to greater preference for the quality of service among bank customers than among savings bank customers. Nevertheless, some differences are observed in the geographical variables. In the case of savings banks, proximity and recommendation are the principal factors influencing customer choice in all regions. By contrast, customers of banks in many regions show a greater preference for the quality of service and even for recommendation than for proximity.

4. Choice of entity: savings bank vs. Commercial bank

Until now banks and savings banks have been considered "perfect substitutes". However, it is impossible to ignore the fact that customers make a different evaluation of the services offered by both, hence the need to estimate the probability of selecting a savings bank over a bank. As can be seen in table 4, almost all sets of dummies are significant in the choice of entity. The variables for levels of education and income –with notably higher marginal effects for the highest levels of education and income– have negative parameters, indicating a lesser tendency to choose a savings bank among individuals with high levels of education and income. We can also see that female customers show a greater probability of choosing a savings bank than men. In terms of territorial variables, residents of Catalonia and Aragon show the highest probabilities of choosing a savings bank, while those of Asturias, Extremadura and Galicia show a greater preference for banks[7] It can also be seen that customers living in towns with populations of between 20,000 and 100,000 show a lower probability of choosing a savings bank than those in towns with fewer than 10,000 inhabitants. habitantes presentan una menor probabilidad de elección de cajas de ahorros respecto aquellas localidades de menos de 10.000 habitantes.

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[6] The results of the estimations are given in tables 2A and 3A of the appendix.

[7] It could be argued that the geographical variables, more than capture the tendency to choose banks or savings banks in a given area, give the market share held by banks and savings banks in each area. In order to test the validity of the geographical variables an additional estimation was performed using a new variable (the ratio of savings bank branches/bank branches in each region) that controls the market share of banks and savings banks in each of the region. The results do not vary with respect to those offered here, thus confirming the existence of differences in the tendency to bank with savings banks or banks depending only on the region in which customers live.

TABLE 4
Probability choice a savings bank

	Parameter	Ef. Marg.		Parameter	Ef. Marg.
Constant	1,366 (0,086)***				
Socioeconomic variables			**Spatial variables**		
Age			**Region from**		
26-35	-0,112 (0,057)**	-0,04 (0,020)*	Andalucía	-0,434 (0,061)***	-0,16 (0,023)***
36-45	-0,13 (0,061)**	-0,046 (0,022)**	Aragón	0,15 (-0,122)	
46-64	-0,174 (0,061)***	-0,062 (0,005)***	Asturias	-0,661 (0,103)***	-0,254 (0,041)***
65+	-0,206 (0,071)***	-0,074 (0,005)***	Baleares	-0,323 (0,113)***	-0,12 (0,044)***
Gender			Canarias	-0,579 (0,085)***	-0,221 (0,034)***
Male	-0,079 (0,032)**	-0,027 (0,003)**	Cantabria	-0,023 (-0,151)	
Education levels			Castilla la Mancha	-0,618 (0,091)***	-0,236 (0,036)***
High school	-0,131 (0,045)***	-0,045 (0,015)***	Castilla León	-0,535 (0,084)***	-0,203 (0,033)***
Bachelor or higher	-0,33 (0,055)***	-0,12 (0,021)***	Extremadura	-0,814 (0,115)***	-0,313 (0,044)***
Marital status			Galicia	-0,698 (0,073)***	-0,266 (0,028)***
Married	-0,031 (-0,042)		La Rioja	-0,405 (0,230)*	-0,153 (0,091)*
Widowed	0,021 (-0,075)		Madrid	-0,351 (0,076)***	-0,129 (0,029)***
Household income levels			Murcia	-0,232 (0,104)**	-0,085 (0,040)**
901-1200€	-0,138 (0,052)***	-0,049 (0,019)***	Navarra	-0,133 (-0,161)	
1201-1800€	-0,196 (0,051)***	-0,07 (0,019)***	Com. Val.	-0,349 (0,069)***	-0,129 (0,026)**
1801-2400€	-0,299 (0,065)***	-0,11 (0,025)***	País Vasco	-0,073 (-0,091)	
More than 2400€	-0,412 (0,082)***	-0,154 (0,032)***	**Size of city**		
			20.001-100.000	-0,084 (0,042)**	-0,029 (0,015)**
			100.001-1.000.000	-0,028 (-0,041)	
			Barcelona capital	-0,003 (0,096)	
			Madrid capital	-0,074 (0,852)	
Observations	7.408				
Pseudo R²	0,04				
LFV.	-4.392,81				

Note: LFV = logarithm of the function of verisimilitude. The dependent variable is dicotomic (1 if the entity is a savings bank and 0 if it is a bank). The base category base of the explanatory variables are the same ones that in the previous case. Estimate method: probit univariante. The marginal effects of those significant parameters are only shown. The standard errors appear between parenthesis. (* * *): significant coefficient to 1% (* *): to 5% (*): to 10%.

The most significant result from the above analysis is the negative parameter presented by the age variable, suggesting that the older the customer, the lower the probability of choosing a savings bank. This result is surprising, since it contradicts a relatively well-known trend: the marked preference for savings banks shown by elderly customers. Indeed, 74.6% of the individuals over 75 years old included in the FRS/INMARK sample made a savings bank their first choice.

There are two possible explanations for the above result. Firstly, savings banks have a larger number of elderly customers than banks but also a larger number of young customers, thanks largely to the aggressive strategies aimed at attracting younger customers that have been introduced in the last few years. Secondly, if we study the probability of choosing a savings bank over a bank according only to the age variable, we see that the parameter of the elderly dummy acquires a very low, non-significant negative value, which tells us that the elderly age group shows the same probability of choosing a savings bank as the youngest group. However, as we control age by the variables sex, level of education, marital status and level of income, the parameter becomes significant and the value of its marginal effect increases in absolute value, indicating that elderly customers show a lower probability of choosing savings banks (see table 4A of the appendix). Put simply, elderly individuals choose savings banks not by virtue of being elderly, but because their levels of education and income are lower. Once we control these factors, age in itself actually produces a greater preference for banks than for savings banks.

In light of the above information, the profile of the customer most likely to choose a savings bank would be a woman under 26 years old, with a low level of education and income, living in Aragon or Catalonia in a town of less than 10,000 inhabitants. This prototype has an 85% probability of choosing a savings bank. By contrast, the customer most likely to choose a bank would be a man over 26 years old, with high levels of education and income, living in Extremadura, Galicia, Asturias or Castilla La Mancha in a town of between 20,000 and 100,000 inhabitants. A customer with this profile has a 63% probability of choosing a bank.

4.1. Location of the head office of banking entities

The above analysis has illustrated the influence of socio-economic and geographical characteristics on the choice of banking entity. It does not, however, consider one of the explanatory factors highlighted in the literature behind the success of savings banks: the strong identification that exists between this type of company and the region in which it is based. It is interesting to consider whether the choice of a savings bank is therefore made independently of that fact that it is from the region where the customer lives. With this aim, we estimated a

bivariate probit with two equations (entity and central office) allowing the respective errors to be correlated[8].

As can be seen in table 5, almost no variation is observed in the estimation of the entity equation with respect to the previous section. For the central office equation, the parameters of the age variable are only significant for individuals aged between 26 and 35, which is the group that shows the greatest preference for entities originated outside their region. The parameter of the sex variable is also significant and indicates that men show a greater tendency to work with companies outside their regions. The coefficients of the dummies for level of income and level of education are significant and negative, indicating that for higher levels of income and education there is less probability of banking with an entity from the same region. The parameters of the dummies that indicate the region in which participants live are also significant and show that customers from most areas are less likely to bank with an entity rooted in the same region than residents of Catalonia. Finally, the city variable shows significant parameters and reveals the greater preference for entities outside the region among customers living in towns and cities of between 20,000 and 1,000,000 inhabitants.

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[8] The option of regressing the entity variable on the head office variable is rejected since the fact that the company is from the region is not so much an explanatory factor for the company being chosen as an inherent feature of the company, particularly in the case of savings banks. In terms of the results, for a single restriction the critical value of the chi-square distribution is 3.84, so the likelihood and Wald tests indicate that the null hypothesis for the correlation coefficient is rejected. This implies that the equations are not independent between themselves, indicating that the disturbance of the error terms is similarly affected by random shocks. The bivariate probit estimation of the entity and head office equations is justified and is more appropriate than the univariate probit estimation.

TABLE 5
Probability choice a savings bank from the region of the residence

	Entity	Head	Ef.		Entity	Head	Ef.
Constant	1,386 (0,087)***	1,371 (0,085)***					
Socioeconomic variables				**Spatial variables**			
Age				**Region from**			
26-35	-0,118 (0,056)***	-0,113 (0,054)*	-0,046	Andalucía	-0,449	-0,761	-0,264
36-45	-0,13 (0,061)**	-0,08 -0,059	-0,040	Aragón	0,169 (-0,124)	-0,231 (0,115)**	-0,051
46-64	-0,172 (0,060)***	0,042 -0,06	-0,019	Asturias	-0,679	-0,441	-0,222
65+	-0,197 (0,070)***	0,068 -0,069	-0,02	Baleares	-0,492*	-1,07 (0,095)***	-0,359
Gender				Canarias	-0,577	-0,963	-0,333
Male	-0,085 (0,031)***	-0,072 (0,031)**	-0,031	Cantabria	-0,026 (-0,152)	-0,22 (-0,149)	-0,064
Education levels				Castilla la Mancha	-0,617	-1,369	-0,441
High school	-0,137 (0,045)***	-0,161 (0,044)***	-0,06	Castilla León	-0,539	-0,856	-0,301
Bachelor or	-0,336 (0,055)***	-0,297 (0,055)***	-0,126	Extremadura	-0,821	-1,241	-0,416
Marital status				Galicia	-0,705	-0,389	-0,218
Single	-0,03 (-0,041)	-0,048 (-0,041)	-0,016	La Rioja	-0,436 (0,225)*	-1,385	-0,439
Widowed	0,023 (-0,075)	0,051 (-0,076)	0,016	Madrid	-0,388	-0,74	-0,253
Household income levels				Murcia	-0,245 (0,104)**	-1,229	-0,398
901-1200€	-0,142 (0,051)***	-0,137 (0,050)***	-0,056	Navarra	-0,164 (-0,158)	-0,297 (0,160)*	-0,102
1201-1800€	-0,196 (0,050)***	-0,142 (0,050)***	-0,065	Com. Val.	-0,353	-0,645	-0,223
1801-2400€	-0,303 (0,064)***	-0,238 (0,065)***	-0,107	País Vasco	-0,104 (-0,088)	0,198 (0,096)**	0,02
More than 2400€	-0,413 (0,081)***	-0,354 (0,082)***	-0,153	**Size of the city**			
				20.001-100.000	-0,081 (0,042)*	-0,156	-0,051
				100.001-1.000.000	-0,02 (-0,041)	-0,109	-0,03
				Barcelona capital	0,004 (-0,098)	-0,159 (-0,1)	-0,042
				Madrid capital	-0,056 (-0,082)	0,092 (-0,081)	0,011

Observations	7.408
LFV.	-7.437,55
Rho	0,86

Note: LFV. = logarithm of the function of verisimilitude. Rho = coefficient of correlation of the terms of interference of both equations. RV = test of reason of verisimilitude to contrast the hypothesis of rho nullity. W = test of Wald to contrast the hypothesis of rho nullity. The base category of the explanatory variables are the same ones that in the previous case. Estimate method: probit bivariante. (* * *): significant coefficient to 1% (* *): significant coefficient to 5% (*): significant coefficient to 10%.

The quantitative analysis is clearest with the marginal effects. Participants aged between 26 and 45 show a far lower probability of choosing a savings bank from their region that customers aged between 16 and 25 and those over 46. In terms of sex, the results indicate that men show a lower probability (3.1%) of choosing a savings bank originated in the region than women. The probability of choosing a savings bank based within the region decreases even more considerably the higher the level of education (the probability shown by customers with higher education is 12.6% lower than that of individuals possessing only primary education) and level of income (customers with income above 2400 Euros are 15.3% less likely to choose a savings bank from the same region than those with income of less than 900 Euros).

As was expected, the spatial variables influence on the probability of choosing a savings bank originated in the region; customers in Catalonia show the greatest probability of choosing a savings bank from the same region, whilst customers living in La Rioja, Castilla La Mancha and Extremadura showed the lowest levels of probability[9]. In terms of the type of city, individuals from the smallest towns considered (less than 10,000 inhabitants) are the most likely to choice a savings bank based in the same region.

From the information presented thus far, it can be deduced that the prototype of the individual most likely to choose a savings bank from the same region is a woman aged under 26 or over 46, with a low level of education (primary education or below), a low level of income (lower than 900 Euros) and living in Catalonia in a town with fewer than 10,000 inhabitants. Customers with these characteristics have a probability of around 84% of choosing a savings bank originated in their region. The opposite extreme is a man aged between 26 and 45, with a high level of education (higher education), a high level of income (over 2400 Euros) and living in a town of between 20,000 and 100,000 inhabitants in Castilla La Mancha, Extremadura or Murcia. An individual showing all of these characteristics has a 26% probability of choosing a saving bank based in the same region.

Having defined the profile of the customer most likely to choice a savings bank from their region, we then used the bivariate normal distribution function to determine the overall probability of choosing either a bank or a savings bank from the same region. The results indicate that the probability of choosing a savings bank whose central office is located in the

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[9] Within a given region, the probability of choosing a saving bank based in the same region will obviously vary according to the socio-economic characteristics of the individual. So, for example, the average probability of choosing a saving bank based in Madrid presented by a customer living in the region is 50%, the highest and lowest values being 74% and 36% respectively.

same region as the customer is very high (59.32%), thus confirming the strong link maintained between savings banks and their primary geographical area. On the other hand, the probability that residents of a given region will choose a bank from the same region is very low (only 5.19%), possibly reflecting the fact that two banks -Banco Bilbao Vizcaya Argentaria (BBVA) y Santander Central Hispano (BSCH)- dominated the national market. Nevertheless, there are still a large number of banks with a marked regional character, whose customers are almost entirely distributed throughout the region in which the companies are originated.

The nationwide consolidation of large banks, the restrictions in place until 1989 that prevented savings banks from operating in other regions and the existence of switching costs account for the fact that customers are more likely to choose banks located outside their region than savings banks originated in other areas (probabilities of 24.69% and 10.76% respectively). It is no surprise, since a number of studies have demonstrated the clear competitive advantages enjoyed by the early entrants first in the banking market (Berger and Dick, 2004).

5. Conclusions

The aim of the present study was to identify the factors that influence the choice of banking firm among customers in Spain. The results obtained confirm that the proximity of branches is the most common factor considered by spanish customers when choosing their preferred banking firm. Personal recommendation, quality of service and security are also considered and are given far more importance than the price of the services offered. It seems, then, that spanish customers give greater value to the extrinsic features of firms than to the specific characteristics of the services that they require. This is perhaps because the extrinsic features, since they cover the general aspects of the respective banking entities, as easier to evaluate than the specific features, often perceived as relatively homogeneous between different companies.

Despite the growing symmetry in the spanish banking market, the preferences expressed by customers of savings banks and banks do not altogether coincide, since while savings bank customers give greater importance to the proximity of branches, bank customers attach more value to the quality of service provided. Clear differences were observed in customer preferences according to region of residence; residents of Catalonia were the most concerned with the relative size of the network of branches (proximity) and residents of Asturias and Extremadura gave the greatest importance to the other features.

The characteristics of individual customers logically condition their preferences. So, for example, older individuals give greater consideration to transport costs and rely less frequently

on recommendation. Customers with higher levels of education and income are less concerned with the proximity of the bank and give greater importance to the quality of service offered. These attributes also determine the probability of choosing a savings bank over a bank; the customers most likely to choose a savings bank are women under 26 or over 45, with a low level of education and income, living in Aragon or Catalonia in towns with less than 10,000 inhabitants. By contrast, customers with the highest probability of choosing a bank would be men between 26 and 45, with a high level of education and income, living in Extremadura, Galicia, Castilla La Mancha or Asturias in towns with between 20,000 and 100,000 inhabitants.

The probability of individuals choosing a savings bank from their region is particularly high, the highest value found in Catalonia and the lowest figures recorded in La Rioja, Castilla La Mancha and Extremadura. Residents of smaller towns (less than 10,000 inhabitants) are more likely to bank with savings banks originated in the area. The strong presence of banks across the entire country, the restrictions that until 1989 prevented savings banks from operating outside their regions, and the existence of switching costs explain why banks from other regions are more likely to be chosen that savings banks located outside that the region of residence.

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TABLE 1.A
Samples composition

Variable	Definition	Frequency (%)	
		FRS/INMARK	Econometric sample
Observations number		8.000	*4.771*
Socioeconomic variables			
Age			
	16-20	5,49	5,66
	21-30	20,08	20,79
	31-45	29,36	28,44
	46-64	25,64	25,95
	65+	19,44	19,16
Gender			
	Male	48,16	48,46
	Female	51,84	51,54
Education Levels			
	Less high school	25,14	24,25
	High school	55,15	54,49
	Bachelor or higher	19,71	21,25
Marital status			
	Single	31,81	33,79
	Married	60,44	58,31
	Widowed	7,75	7,90
Household income levels			
	Less than 900€	25,34	24,08
	901-1200€	16,78	16,98
	1201-1800€	25,81	20,83
	1801-more than 2100€	8,35	14,23
	Ns/Nc	23,73	23,87
Spatial variables			
Region from			
	Andalucía	18,64	19,05
	Aragón	2,55	2,08
	Asturias	2,74	1,36
	Baleares	2,18	2,62
	Canarias	4,48	4,65
	Cantabria	1,26	0,96
	Castilla la Mancha	3,80	4,17
	Castilla León	4,71	4,63
	Cataluña	15,81	14,44
	Extremadura	2,23	1,99
	Galicia	6,85	7,92
	La Rioja	0,51	0,27
	Madrid	14,20	18,42
	Murcia	3,15	2,81
	Navarra	1,21	1,17
	Comunidad Valenciana	10,43	9,05
	País Vasco	5,26	4,38
Size of city			
	2.001-10,000	17,41	17,19
	10.001-20.000	12,20	11,59
	20.001-50.000	15,74	14,09
	50.001-100.000	11,06	10,79
	100.001-500.000	25,03	25,38
	500.001-1.000.000	6,79	7,19
	Barcelona capital	3,99	3,33
	Madrid capital	7,79	10,44

TABLE 2.A
Savings banks: choice of criteria

	Quality of service		Security		Recommendation	
	Prob.	Ef. Marg.	Prob.	Ef. Marg.	Prob.	Ef. Marg.
Constant	-3,135 (-0.442)***		-3,833 (0,725)***		-0,521 (0,254)*	
Socioeconomic variables						
Age						
16-25	*Category base*					
26-35	0,540 (0,381)		0,047 (0,572)		-0,728 (0,181)***	-0,138 (0,026)***
36-45	0,431 (0,389)		-0,061 (0,578)		-1,016 (0,192)***	-0,183 (0,028)***
46-64	0,308 (0,398)		-0,139 (0,607)		-1,042 (0,204)***	-0,180 (0,028)
65+	0,591 (0,416)		-0,117 (0,651)		-0,916 (0,227)***	-0,163 (0.029)***
Gender						
Female	*Category base*					
Male	-0,008 (0,116)		0,337 (0,209)		-0,081 (0,087)	
Education levels						
Less high school	*Category base*					
High school	0,198 (0,159)		-0,216 (0,280)		0,121 (0,123)	
Bachelor or higher	0,415 (0,269)**	0,034 (0,022)	0,176 (0,346)		0,267 (0,155)*	0,038 (0,030)
Marital status						
Single	*Category base*					
Married	0,464 (0,158)***	0,047 (0,014)***	0,242 (0,275)		-0,175 (0,114)	
Widowed	0,437 (0,269)		-0,050 (0,528)		-0,147 (0,205)	
Household income levels						
Less than 900€	*Category base*					
901-1200€	0,314 (0,184)*	0,025 (0,019)	0,224 (0,327)		0,207 (0,140)	
1201-1800€	0,323 (0,183)*	0,028 (0,019)	0,257 (0,328)		0,152 (0,139)	
1801-More than 2400€	0,363 (0,220)*	0,034 (0,024)	-0,061 (0,427)		0,128 (0,165)	

TABLE 2.A (Continued)

Spatial variables						
Region from						
Cataluña	*Category base*					
Andalucía	0,886 (0,213)***	0,078 (0,027)***	0,639 (0,431)		0,516 (0,165)***	0,065 (0,034)**
Aragón	0,986 (0,377)***	0,058 (0,049)	0,062 (1,074)		1,153 (0,284)***	0,212 (0,069)***
Asturias/Cantabria	1,400 (0,369)**	0,122 (0,071)*	2,029 (0,655)***	0,079 (0,084)	0,897 (0,396)**	0,079 (0,084)
Baleares	0,369 (0,387)		1,666 (0,539)***	0,048* (0,065)	0,438 (0,310)	
Canarias	1,012 (0,290)***	0,078 (0,041)*	0,490 (0,685)		0,896 (0,236)***	0,143 (0,054)***
Castilla la Mancha	0,364 (0,370)		0,255 (0,800)		1,289 (0,238)***	0,280 (0,057)***
Castilla León	1,349 (0,296)***	0,081 (0,042)*	1,980 (0,492)***	0,190 (0,057)*	1,334 (0,239)***	0,190 (0,057)***
Extremadura	1,997 (0,407)***	0,175 (0,074)**	1,590 (0,833)*	0,193 (0,086)	1,576 (0,382)***	0,193 (0,086)**
Galicia	1,231 (0,276)***	0'021 (0,028)	1,491 (0,511)***	0,375 (0,045)	1,995 (0,200)***	0,375 (0,045)***
Madrid	-0,359 (0,270)		0,187 (0,458)		0,536 (0,164)***	0,119 (0,036)***
Murcia	1,524 (0,339)***	0,087 (0,049)*	0,231 (1,074)		1,684 (0,273)***	0,295 (0,064)***
Navarra	1,212 (0,433)***	0,132 (0,075)*	1,205 (0,823)		0,523 (0,417)	
Com. Valenciana	1,166 (0,235)***	0'095 (0,035)***	1,556 (0,440)***	0,102 (0,043)*	0,838 (0,192)***	0,102 (0,043)***
Rioja/País Vasco	-0,162 (0,360)		0,767 (0,549)		0,670 (0,219)***	0,140 (0,051)***
Size of city						
2.001-20.000	*Category base*					
20.001-100.000	-0,009 (0,149)		-0,133 (0,277)		-0,231 (0,120)**	-0,041 (0,020)***
100.001-1.000.000	-0,370 (0,143)***	-0,023 (0,013)*	-0,378 (0,260)		-0,384 (0,112)***	-0,059 (0,019)***
Barcelona/Madrid	-0,863 (0,315)***	-0,058 (0,020)**	-0,198 (0,487)		-0,425 (0,179)*	-0,058** (0,030)
Observations	3.304					
Pseudo R^2	0.068					
LFV.	-3.172					

Note: LFV = logarithm of the function of verisimilitude. The dependent variable is a qualitative variable that represents the reasons for choice proximity, quality of the service, security and recommendation. The base category of the independent variable is proximity. Method of estimation: logit multinomial. The marginal effects of those significant parameters are only shown The standard errors appear between parenthesis. (***): significant coefficient to 1%, (**): significant coefficient to 5%, (*): significant coefficient to 10%.

TABLE 3.A
Choice criteria of banks

	Quality of service		Security		Recommendation	
	Prob.	Ef. Marg.	Prob.	Ef. Marg.	Prob.	Ef. Marg.
Constant	-1,989		-0,418		-0,407	
	(0,547)***		(0,121)***		(0,426)	
			Socioeconomic variables			
Age						
16-25	*Category base*					
26-35	0,087		-0,609		-0,764	-0,145
	(0,446)		(0,649)		(0,315)**	(0,049)***
36-45	-0,137		-0,499		-1,024	-0,185
	(0,456)		(0,648)		(0,326)***	(0,051)***
46-64	0,249		-0,185		-0,816	-0,170
	(0,468)		(0,670)		(0,341)**	(0,054)***
65+	0,341		-0,368		-1,022	-0,201
	(0,492)		(0,706)		(0,368)***	(0,051)***
Gender						
Female	*Category base*					
Male	-0,343	-0,396	-0,285		-0,176	
	(0,152)**	(0,213)*	(0,240)		(0,132)	
Education levels						
Less High school	*Category base*					
High school	0,217		-0,388		0,303	
	(0,216)		(0,327)		(0,192)	
Bachelor or higher	0,458	0,276	0,031		0,720	0,129
	(0,260)*	(0,038)	(0,387)		(0,225)***	(0,048)***
Marital status						
Single	*Categoría base*					
Married	0,330		0,318		0,037	
	(0,202)		(0,321)		(0,170)	
Widowed	-0,025		-1,319		0,243	
	(0,362)		(0,814)		(0,300)	
Household income levels						
Less than 900€	*Categoría base*					
901-1200€	0,260		0,011		-0,114	
	(0,254)		(0,405)		(0,223)	
1201-1800€	0,457	0,065	-0,211		0,142	
	(0,248)*	(0,039)*	(0,419)		(0,212)	
1801-2400€	0,710	0,112	0,570		0,057	
	(0,303)**	(0,055)**	(0,472)		(0,266)	
More than 2400€	0,435	0,048	0,630		0,208	
	(0,390)	(0,063)	(0,555)		(0,315)	

TABLE 3.A (Continued)

Spatial variables					
Region from					
Cataluña	*Category base*				
Andalucía	0,541	-0,015	2,256	0,137	0,781	0,064
	(0,304)*	(0,48)	(1,047)**	(0,119)	(0,278)***	(0,076)
Aragón	2,323	0,069	4,138	0,342	1,881	-0,020
	(0,763)***	(0,015)	(1,373)***	(0,289)	(0,758)**	(0,168)
Asturias/Cantabria	1,687	0,0170	2,101	0,087	1,023	0,015
	(0,396)***	(0,094)*	(0,126)*	(0,134)	(0,411)**	(0,094)
Baleares	-0,062		1,362		0,760	
	(0,568)		(1,449)		(0,436)	
Canarias	0,113	0,081	2,487	0,197	0,464	
	(0,371)***	(0,088)	(1,123)**	(0,186)	(0,387)	
Castilla la Mancha	0,278		2,695	0,157	1,704	0,250
	(0,466)		(1,127)**	(0,163)	(0,348)***	(0,128)*
Castilla León	0,713	-0,014	2,598	0,213	0,813	0,021
	(0,387)*	(0,066)	(1,107)**	(0,190)	(0,356)***	(0,107)
Extremadura	1,755	0,080	3,398	0,282	1,223	-0,031
	(0,459)***	(0,112)	(1,148)***	(0,231)	(0,474)***	(0,121)
Galicia	0,800	-0,029	2,567	0,153	1,312	0,143
	(0,339)**	(0,051)	(1,084)**	(0,147)	(0,301)***	(0,100)
Madrid	-0,222		2,365	0,174	0,763	0,076
	(0,417)		(1,082)**	(0,141)	(0,325)**	(0,087)
Murcia	0,965	-0,050	2,644	0,128	1,821	0,238
	(0,527)*	(0,062)	(1,272)**	(0,170)	(0,438)***	(0,138)*
Navarra	0,450		3,337	0,440	0,512	
	(0,884)		(1,331)**	(0,311)	(0,783)	
Com. Valenciana	1,624	0,100	0,324	0,264	0,926	-0,055
	(0,339)***	(0,094)	(1,069)***	(0,196)	(0,344)***	(0,090)
Rioja/País Vasco	-0,958		3,230	0,503	-0,123	
	(0,661)		(1,086)***	(0,247)	(0,471)	
Size of city					
2.001-20.000	*Category base*				
20.001-100.000	-0,077		0,183		-0,434	-0,086
	(0,198)		(0,333)		(0,177)**	(0,032)***
100.001-1.000.000	-0,366	-0,037	0,299		-0,482	-0,083
	(0,197)*	(0,026)	(0,317)		(0,173)***	(0,032)***
Madrid capital	-0,742		-1,150		-0,579	-0,050
	(0,483)		(0,699)		(0,320)*	(0,055)
Observations	1.649					
Pseudo R^2	0.075					
LFV.	-1.649					

Note: LFV = logarithm of the function of verisimilitude. The dependent variable is a qualitative variable that represents the reasons for choice proximity, quality of the service, security and recommendation. The base category of the independent variable is proximity. Method of estimation: logit multinomial. The marginal effects of those significant parameters are only shown The standard errors appear between parenthesis. (***): significant coefficient to 1%, (**): significant coefficient to 5%, (*): significant coefficient to 10%.

TABLE 4.A
Variation of age parameter controled by others variables

	Regression 1		Regression 2		Regression 3		Regression 4		Regression 5	
	Parameter	Ef.Marg.	Parameter	Ef.Marg.	Parameter	Ef.Marg.	Parameter	Ef.Marg.	Parameter	Ef.Marg.
age1	-0,143	-0,051	-0,145	-0,052	-0,114	-0,041	-0,099	-0,035	-0,102	-0,036
	(0,052)	(0,019)	(0,052)	(0,019)	(0,052)	(0,019)	(0,055)	(0,020)	(0,056)	(0,020)
age2	-0,157	-0,057	-0,161	-0,058	-0,150	-0,054	-0,128	-0,046	-0,130	-0,046
	(0,053)	(0,020)	(0,053)	(0,020)	(0,054)	(0,020)	(0,060)	(0,022)	(0,060)	(0,022)
age3	-0,130	-0,046	-0,134	-0,048	-0,167	-0,060	-0,145	-0,052	-0,151	-0,054
	(0,050)	(0,018)	(0,050)	(0,018)	(0,051)	(0,019)	(0,060)	(0,022)	(0,060)	(0,022)
age4	**-0,030**	**-0,011**	**-0,039**	**-0,014**	**-0,117**	**-0,042**	**-0,105**	**-0,037**	**-0,159**	**-0,057**
	(0,053)	(0,019)	(0,053)	(0,019)	(0,058)	(0,021)	(0,067)	(0,024)	(0,068)	(0,025)
Variables de control			Gender		Gender		gender		gender	
					Education levels		Education levels		Education levels	
							Marital status		Marital status	
									Income level	

Note: The variable entity (0 if it a bank and 1 if it is a savings bank)is the dependent variable in all the estimations. In each regression we a independent variable that control the age variable. The standard errors appear between parenthesis

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