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## **Farmers' satisfaction with Agricultural Credit: The case of Greece**

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## **Farmers' satisfaction with Agricultural Credit: The case of Greece**

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The existence of an appropriate institutional framework pertaining to the financial system in agriculture, that will support efficient financial mediation, reduce transaction costs, and facilitate the farmers' access to loaned capital on favourable terms, is considered to be an essential step as regards the course of competitiveness in Greek agriculture. This paper is based on an empirical study on a sample of farmers. The aim of this research study is to examine the farmers' satisfaction with current structures and services related to agricultural credit, as provided in Greece at present. On a second level, this objective of this paper is to develop a typology of farmers, based on their satisfaction structures (by a methodological scheme based on Principal Axes Factoring (PAF), Hierarchical and K-Means Cluster Analysis). The results of this typology will allow for conclusions and proposals to be deduced, regarding the potential for improving agricultural credit, with the growth of the agricultural sector as the ultimate aim. The PAF highlighted five factors-dimensions that can be used to analyze the farmers' satisfaction with agricultural credit. The first and most important factor is linked to the financial terms of credit and to transaction costs. The second focuses on the human aspect of services, on facilities and equipment. The third factor pertains to the possibility of receiving such services on a personal basis. The fourth is linked to the terms of lending, and the fifth factor exclusively defines the particular properties of agricultural credit.

**Key words:** Agricultural Credit, Satisfaction, funding, Principal Axes Factoring, Financial Marketing

### **Introduction**

Following a decade of radical change and reforms on a European and global level, agriculture in Greece is today undergoing a period of particularly decisive importance for its future. Its adjustment to the new globalised environment will essentially depend on a further development and improvement of its structures, in order to strengthen its competitiveness in the global market (Mamatzakis, 2003; Galanopoulos *et al.*, 2004). One of the most significant factors linked to the development of the agricultural sector in Greece is the possibility of identifying external sources of

funding on favourable terms, in order to carry out the investments required. A rational management of funding is the key element that exploits all the other production coefficients and allows the farmer to more effectively valorise his labour and the natural environment, for his own benefit and that of society (Spathis, 1999; Provopoulos and Kapopoulos 2001). The term agricultural credit, in its broader sense, is used to describe the system of banking finance that covers the field of primary production, the processing and trade of agricultural products, and the production and distribution of agricultural inputs (seeds, plants, agrochemical products). Under a stricter sense, agricultural credit is limited to primary production, which is usually not the focus of the banking system's attention, due to its organizational model and the particular attributes that characterize the agricultural sector (Stamatoukos and Spathis, 1991; Spathis, 1999). The main factors that fuel the demand for and use of loans by the primary sector are the following (Ziogas, 1999; Ziogas, 2003):

- a) The limited capacity for savings and thus for self-financing investments, due to the small size of the agricultural holdings.
- b) The increased risks involving any prediction of the price level of agricultural products, and the great fluctuations that characterize them.
- c) The existence of numerous natural risks and disasters that affect the agricultural production volume and quality.
- d) The long intervening period between any decisions made regarding production volume and actual harvesting.
- e) The moneyfication of production over large periods, combined with the continuous increase of the production costs and the expenses of the agricultural family.
- f) The need to improve the productive potential of the agricultural holding, through costly but not particularly efficient investments.
- g) The uncertainty regarding the size of the agricultural production.
- h) The need to establish and develop processing units, a fact that requires high capital investment.

The existence of an appropriate institutional framework pertaining to agricultural credit, that will support efficient financial mediation, reduce transaction costs, and facilitate the farmers' access to loans on favourable terms, is considered to be an essential step as regards the course of change in Greek agriculture (Kamenidou, *et al.*, 2003). The structural weaknesses and particularities of the Greek agricultural sector,

the reduction in public intervention-support schemes and the liberalization of global trade for agricultural goods, accentuate the need for increased funding, for the implementation of investments, that will foster a more rapid assimilation of new technologies and organizational structures (Ziogas, 1999). Furthermore, based on the new financial approach adopted by the EU concerning the elimination of funding from agricultural financial programmes, the need to provide effective financial services and transform agricultural financial institutions into efficient and sustainable bodies, becomes even more imperative (Fennell, 1999).

The changes that arise from the current Agricultural Credit model, and the liberalization of interest rates and of the banking system, have created new terms and conditions in the Greek banking market, along with the need for new banking products and a differentiation of interest rates depending on the credit risk involved. The developments in the Agricultural Credit mechanism must also be combined with qualitative changes, that are related to the farmers' satisfaction with the banking services provided. The farmers' satisfaction with the latter is of utmost importance, since it is related to whether the farmers will continue to practise agriculture, which is a fact linked to the future development of the agricultural sector.

Public organizations of the broader public sector in particular, as well as public services of the Central Administration, have indeed begun to deal with citizens (constituencies) as "individual" consumers/customers (Lane, 2001; Barzeleay, 1992; Kernaghan, 2000). The awareness that customer satisfaction is probably the most important source for developing and maintaining a competitive edge, has had a decisive effect on the institution of organizational priorities and practices both in the private and public sector (Woodruff, 1997). Under a broader sense, the need to constantly keep the "customer" satisfied comes from its close association to the financial performance of organizations, and even their survival. According to Vilares and Coelho (2003), the significance attributed to customer satisfaction can also be seen in the constantly increasing development and establishment of customer satisfaction indicators on a national level primarily, also known as "National Customer Satisfaction Barometers" (Fornell, 1992; Anderson et al., 1994; Bruhn and Grund, 2000).

Customer satisfaction is considered a precondition of customer loyalty and customer commitment, and they in turn are a prerequisite for achieving financial objectives, such as an increase in profitability, market share and the performance of invested capital (Hackl and Westlund, 2000; Bolton and Drew, 1994; Cronin and Taylor, 1992).

Oliver (1981, 1993) summarizes the approaches towards customer satisfaction in the following definition: satisfaction is a psychological state that results from the relation between the feelings that surround unconfirmed expectations and the customer's prior feelings regarding (prior) consumer experiences, considering it thus as an axiological and emotional response of the customer. Customer satisfaction consists of both emotional and perceptual (experiential) elements (Rust και Oliver, 1994) and depends on the particular environment in each case (Gumus and Koleoglou, 2002). In addition, it is also affected by elements of the cultural environment and by basic demographic customer variables, such as gender and age (Dimitriades and Maroudas, 2007).

The aim of this study is to examine the farmers' satisfaction with the existing structures and services related to agricultural credit, as provided in Greece at present. On a second level, the objective of this paper is to develop a typology of the farmers, based on their satisfaction structures. The results of this typology will allow for conclusions and proposals to be formulated, regarding the potential for improving agricultural credit, with the growth of the agricultural sector as the ultimate aim.

## **Materials and methods**

This study is based on an empirical study involving a sample of 210 farmers, who are active in the Region of Central Macedonia. The selection of the farmers in the sample was made from the Farmers' Register lists at the Directorates of Agricultural Development of the Region's Prefectural Authorities, using systematic random sampling. The study was conducted during the period 2007-2008. The collection of the initial data was made through personal interviews with the farmers and the use of a specially structured questionnaire, which consists of 30 questions, divided into 5 units. More specifically, it includes units involving the demographic and economic data of the farmers in the sample, the role of banks, the service and information provided, the quality and type of banking transaction, the level of satisfaction with the

banking transaction. The majority of the questions were closed, multiple-choice questions, and the interviewees were also requested to answer questions on a graded “Likert-type” or Hierarchical scale. For a summary presentation of the available data, methods of Descriptive Statistics were used. The statistical analyses were carried out with the SPSS version 15 software, where the Exact Tests subsystem was installed.

The study included 182 men (86.7%) and 28 women (13.3%). Of the total sample, 70 farmers (33.3%) were aged 36-45 years, 25 farmers (16.6%) were aged 19-35 years, and the same percentage (16.7%) also accounted for the other age groups. Half of those questioned stated that their main profession is farming (50%), 14 (6.7%) stated that they are mainly involved in animal breeding, while 91 interviewees (43.3%) stated that they are involved in both activities. A large percentage of the sample (50%) have completed Primary education, 56 (26.7%) have not completed Primary school, 35 (16.7%) have completed basic education, and only 14 (6.7%) are Secondary school graduates. As regards income gained, 133 interviewees (63.3%) declared a net monthly income of up to 500€, 42 (20%) declared a net monthly income of 500 to 1000€, 28 (13.3%) declared a net monthly income of 1000 to 1500€, while only 7 (3.3%) declared a net monthly income of 1500 to 2000€.

Table1. Socio-economic profile of the sample

Socio-Economic Factors		Number of Farmers	(%)
Sex	Male	182	86.7
	Female	28	13.3
Age	(1) 19-35 yrs	25	16.6
	(2) 36-45 yrs	70	33.3
	(3) >56 yrs	115	50.1
Education Level	(1) Not completed Primary Education	56	26.7
	(2) Primary Education	105	50.0
	(3) Basic Education	35	16.7
	(4) Secondary Education	14	6.7
Involvement in farming	(1) Agriculture	105	50
	(2) Animal breeding	14	6.7
	(3) Mixed sectors	91	43.3
Agricultural income (€/month)	(1) < 500 euros	133	63.3
	(2) 501-1000 euros	42	20.1
	(3) 1001-1500 euros	28	13.3
	(4) >1501 euros	7	3.3

In order to test the validity the semantic construction validity of the measurement scale for satisfaction with Agricultural Credit, Principal Axis Factoring (PAF) was used with rectangular Varimax rotation of the axes. To check the reliability of the measurement scale (in the sense of internal consistency), Cronbach's a reliability coefficient was calculated and evaluated. More specifically, the Principal Axis Factoring (PAF) analysis highlighted 5 factors (Table 1) that explain 66.4% of the total variance. The overall reliability of the satisfaction measurement scale (21 questions) is very satisfactory, with Cronbach's a 0,899. The first factor explains 40.2% of the total variance, and has a high Cronbach's a reliability coefficient of 0,871. In addition, the discrimination indicators for this factor, which also constitute semantic construction validity indicators, ranged between 0.60-0.86, which is quite higher than the limit (0.20). The first factor is mainly structured around questions 1, 2, 3 and 13 and can be identified as the satisfaction component that expresses "the financial terms for credit and cost of transactions". The second factor explains 12.8% of the total variance, has a high Cronbach's a reliability coefficient of 0.849 and is mainly structured around questions 8, 9, 12 and 16. This satisfaction component focuses on the "human aspect of services and facilities, equipment and service". For this factor, the discrimination indicators (REF) ranged between 0.58-0.82, which is relatively higher than the limit (0.20). The third factor explains 8.5% of the total variance, has a high Cronbach's a reliability coefficient of 0,800 and is mainly structured around questions 4, 6, 10 and 15. Based on the semantic content of the questions, this satisfaction component refers to the possibility of receiving personal service. For this factor, the discrimination indicators (REF) ranged between 0.48-0.73, which is relatively higher than the limit (0.20). The fourth factor explains 7% of the total variance with a satisfactory Cronbach's a reliability coefficient of 0,718, and is connected to questions 14, 18 and 21. This factor expresses the satisfaction component that focuses on lending terms. For this factor the discrimination indicators (REF) ranged between 0.48-0.60. The fifth factor explains 6.5% of the total variance and is mainly structured around question 19. It constitutes a local dimension of satisfaction, as expressed through the semantic content of question 19. Therefore, the fifth factor can be characterized as a determining factor of the particular characteristics of agricultural credit.



Table 1. Components of the farmers' satisfaction with Agricultural Credit

Ερωτήσεις	Factors					communalities
	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>	
Q <sub>13</sub>	0.880					0.790
Q <sub>1</sub>	0.865					0.858
Q <sub>2</sub>	0.781					0.753
Q <sub>3</sub>	0.504					0.611
Q <sub>7</sub>						0.535
Q <sub>16</sub>		0.837				
Q <sub>8</sub>		0.780				0.804
Q <sub>9</sub>		0.704				0.539
Q <sub>12</sub>		0.557				0.707
Q <sub>5</sub>						0.620
Q <sub>15</sub>			0.729			0.602
Q <sub>4</sub>			0.704			0.778
Q <sub>10</sub>			0.558			0.725
Q <sub>6</sub>			0.534			0.613
Q <sub>17</sub>						0.162
Q <sub>21</sub>				0.793		0.707
Q <sub>14</sub>				0.615		0.649
Q <sub>18</sub>				0.573		0.734
Q <sub>19</sub>					0.695	0.496
Cronbach' s a	0.871	0.849	0.800	0.718	*	
Mean	3.1	3.9	3.6	4.1	1.9	
St. D.	0.4	0.4	0.4	0.3	0.8	

- \* There is no application
- Table 1 only presents the loads whose absolute value is  $\geq 0.50$ . Loads of this class for this specific sample size are statistically significant at a significance level  $\alpha=0.05$  and a power level 0.80.

Based on the data in Table 2, we make the following observations: the four questions linked to the first satisfaction component received the following answers on average:

Table 2. Structural analysis of satisfaction components

Satisfaction components		Mean	Std. Deviation
<u>1<sup>st</sup> component</u> (F <sub>1</sub> ): “financial terms for credit and cost of transactions”			
Q <sub>1</sub>	Loan interest rate	3.2	1.1
Q <sub>2</sub>	Deposit interest rate	2.6	1.2
Q <sub>3</sub>	Feeling of security with transactions	3.6	1.1
Q <sub>13</sub>	Cost of transactions/deductions	2.9	0.9
		<b>3.1</b>	
<u>2<sup>nd</sup> component</u> (F <sub>2</sub> ): “human aspect of services / facilities, equipment and service”			
Q <sub>8</sub>	Pleasant environment	3.7	0.6
Q <sub>9</sub>	Variety of banking products	4.4	0.5
Q <sub>12</sub>	Friendliness of staff	3.7	0.7
Q <sub>16</sub>	No of ATMs	3.4	0.9
		<b>3.8</b>	
<u>3<sup>rd</sup> component</u> (F <sub>3</sub> ): “possibility of receiving personal service”			
Q <sub>4</sub>	Knowledge of staff	3.9	0.6
Q <sub>6</sub>	No of bank branches	3.4	0.9
Q <sub>10</sub>	Service by the staff	3.9	0.6
Q <sub>15</sub>	Proximity to interviewee’s house	3.0	0.9
		<b>3.6</b>	
<u>4<sup>th</sup> component</u> (F <sub>4</sub> ): “lending terms”			
Q <sub>14</sub>	Reliability of information	3.7	0.7
Q <sub>18</sub>	Speed of granting loans	4.0	0.7
Q <sub>21</sub>	Flexibility in arranging the loan installments	4.3	0.6
		<b>4.0</b>	
<u>5<sup>th</sup> component</u> (F <sub>5</sub> ): “particular characteristics of agricultural credit”			
Q <sub>19</sub>	Flexibility in dealing with agricultural production problems	<b>2.0</b>	0.8

As we can see in Table 2, the farmers express a neutral-medium level of agreement concerning the first and third satisfaction component, since the general mean for the four questions that comprise the relevant components is equal to 3.1 and 3.6 respectively. For the second and fourth satisfaction component, the farmers express a more positive level of agreement, since the general mean for the questions that

comprise them is 3.8 and 4.0 respectively; as regards the fifth component, it seems that there is disagreement among the farmers.

Table 3. The relation between the satisfaction parameters

	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>
F <sub>1</sub>	0.342 p=0.000	0.550 p=0.000	0.399 p=0.000	0.182 p=0.008
F <sub>2</sub>		0.591 p=0.000	0.545 p=0.000	0.117 p=0.090
F <sub>3</sub>			0.489 p=0.000	0.093 p=0.179
F <sub>4</sub>				0.008 p=0.907

In Table 3, we see that the first four satisfaction components present positive, medium to strong intensity, statistically significant correlations between them. One exception is the fifth component, which is not significantly correlated to the other four, thus confirming its local or particular character, as regards the satisfaction measurement scale. Based on all that was mentioned in this unit, the semantic construction validity is documented to a satisfactory degree, as well as the reliability of the scale for measuring the farmers' satisfaction with Agricultural Credit.

To develop the typology of the farmers in the sample, based on the factorial structures (dimensions) F<sub>1</sub>, F<sub>2</sub>, F<sub>3</sub>, F<sub>4</sub> and F<sub>5</sub>, highlighted by the PAF, Hierarchical Cluster Analysis was applied (Hair *et al.*, 1995; Sharma, 1996). The square of Euclidean distance was used to measure the dissimilarity between the farmers, and the methodology based on Ward's criterion was used to form the clusters. Prior to the Analysis, the factorial scores of the farmers were converted into Z-scores, so that all five factors could be entered in the Analysis with the same "weight". The analysis produced three clusters of farmers. The first cluster (S<sub>1</sub>) includes 28 farmers (13.3%), the second cluster (S<sub>2</sub>) 77 farmers (36.7%) and the third (S<sub>3</sub>) consists of 105 farmers (50%). The profile of the clusters as regards the five factors is provided in Table 4 (also see Figure D<sub>1</sub>).

Table 4: The Profile of the Clusters

Clusters		F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>
S <sub>1</sub>	Mean	2.4 <sup>b</sup>	2.7 <sup>b</sup>	2.6 <sup>c</sup>	3.1 <sup>c</sup>	1.8 <sup>b</sup>
	Std. Deviation	.6	.4	.4	.4	.4
	N	28	28	28	28	28
S <sub>2</sub>	Mean	2.5 <sup>b</sup>	3.9 <sup>a</sup>	3.5 <sup>b</sup>	4.0 <sup>b</sup>	2.5 <sup>a</sup>
	Std. Deviation	.9	.4	.5	.4	.9
	N	77	77	77	77	77
S <sub>3</sub>	Mean	3.6 <sup>a</sup>	4.1 <sup>a</sup>	3.9 <sup>a</sup>	4.3 <sup>a</sup>	1.5 <sup>b</sup>
	Std. Deviation	.7	.3	.5	.4	.5
	N	105	105	105	105	105
Total	Mean	3.1	3.9	3.6	4.1	1.9
	Std. Deviation	.9	.6	.6	.6	.8
	N	210	210	210	210	210
$R^2$		0.374	0.607	0.419	0.529	0.335
		$P<0.001$	$P<0.001$	$P<0.001$	$P<0.001$	$P<0.001$

For each factor, means followed by different letter are statistically significant different at  $P<0.05$  according to the Tukey's test

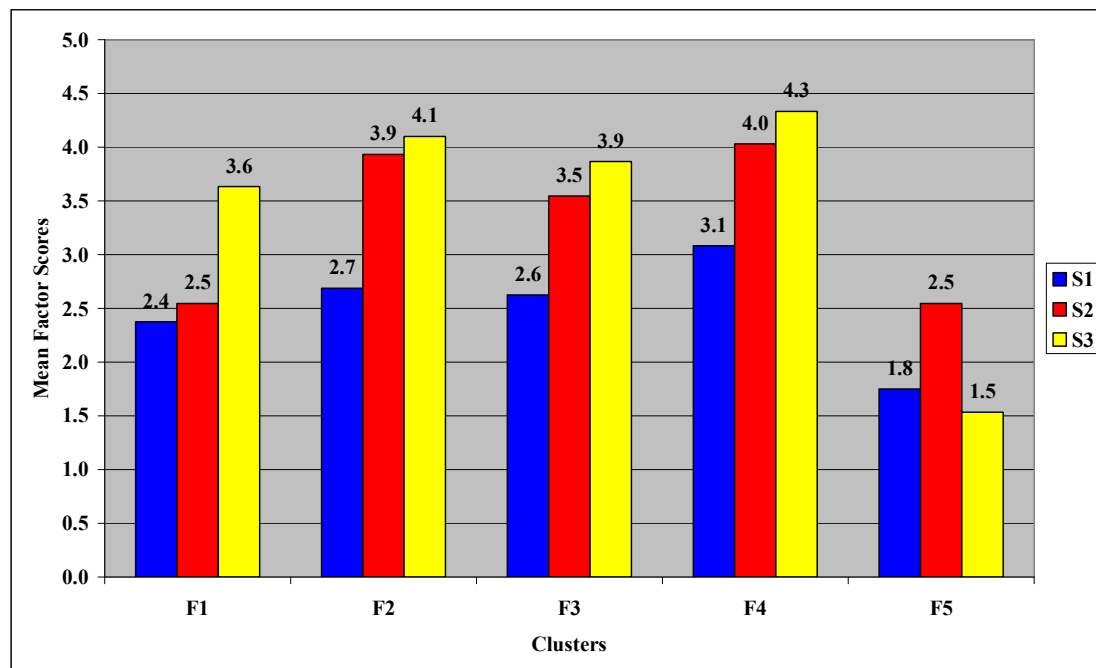


Diagram D1: Cluster's Profile

Based on the data in Table 4, we observe that cluster S<sub>3</sub> has the highest values for the satisfaction components F<sub>1</sub>, F<sub>2</sub>, F<sub>3</sub> and F<sub>4</sub> and a low value for component F<sub>5</sub>. More specifically, this cluster mainly consists of farmers that express a high satisfaction score for issues of service provision and the level of service, a high satisfaction score for the banking facilities and technical equipment, and also as regards the possibility of receiving personal service and for the lending terms. In addition, the farmers in this

cluster express disagreement and present a negative satisfaction score as regards the particular characteristics of the agricultural credit provided. Cluster S<sub>2</sub> has the highest values for the satisfaction components F<sub>2</sub> and F<sub>5</sub> and the lowest values for the components F<sub>1</sub>, F<sub>3</sub> and F<sub>4</sub>. More specifically, this cluster consists of farmers who express a high satisfaction score for issues pertaining to service provision, the level of service and the lending terms, and a relatively neutral satisfaction score in relation to the possibility of receiving personal service. Moreover, the farmers in this cluster express a disagreement as regards their satisfaction with the Bank concerning the financial terms for credit and the cost of transactions, as well as the particular characteristics of agricultural credit. Cluster S<sub>1</sub> mainly includes farmers who present the lowest scores in relation to all satisfaction components (F<sub>1</sub>, F<sub>2</sub>, F<sub>3</sub>, F<sub>4</sub> and F<sub>5</sub>). More specifically, this cluster consists of farmers who present a relatively neutral satisfaction score regarding the lending terms. Their satisfaction score is indifferent as regards the provided services and the banking facilities, technical equipment and level of service, as well as the possibility of receiving personal service. The farmers in this cluster rather disagree as regards the obtained satisfaction in relation to the financial terms for credit and the cost of transactions, and also disagree and present a negative satisfaction score as regards the particular characteristics of agricultural credit. Based on the coefficient of determination  $R^2$ , the relative significance of the variables that were used to form the clusters is in descending order: F<sub>2</sub>, F<sub>4</sub>, F<sub>3</sub>, F<sub>1</sub> and F<sub>5</sub>.

Next, in order to examine the “profile” of the clusters, the characteristics of the farmers in the various clusters were examined, as regards gender, age, educational level and agricultural income gained (Tables 5, 6, 7, 8). It was found that a correlation exists, of medium intensity, between gender and cluster type ( $\chi^2=21.294^*$ ,  $df=2$ ,  $p<0,001$ , Cramer’s  $V=0,318$ ). Cluster S<sub>1</sub> exclusively comprises men, while cluster S<sub>2</sub> contains the largest percentage of women farmers.

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\* The observed significance level (p-value) was calculated using the simulation method Monte Carlo (Mectta and Patel, 1996). This method leads to timely and safe conclusions, even when the methodological preconditions for implementing the  $\chi^2$  test are not upheld.

Table 5: Cluster Profile in relation to the Farmers' Gender

Clusters		Gender		Total
		Women	Men	
S <sub>1</sub>	Count	0	28	28
	%	.0%	100.0%	100.0%
S <sub>2</sub>	Count	21	56	77
	%	27.3%	72.7%	100.0%
S <sub>3</sub>	Count	7	98	105
	%	6.7%	93.3%	100.0%
Total	Count	28	182	210
	%	13.3%	86.7%	100.0%

Based on the age distribution of the farmers in the sample, there was found to be a strong correlation between age and cluster type ( $\chi^2=128.036$ ,  $df=10$ ,  $p<0,001$ , Cramer's  $V=0,552$ ). Cluster S<sub>1</sub> only comprises farmers of an advanced age, while cluster S<sub>3</sub> is dominated by farmers of a younger age.

Table 6: Cluster Profile in relation to the Farmers' Age

Clusters		Age			Total
		19-35 yrs	36-45 yrs	>56 yrs	
S <sub>1</sub>	Count	0	0	28	28
	%	.0%	.0%	100.0%	100.0%
S <sub>2</sub>	Count	28	21	28	77
	%	36.4%	27.2%	36.4%	100.0%
S <sub>3</sub>	Count	7	54	44	105
	%	6.6%	51.4%	42.0%	100.0%
Total	Count	35	75	100	210
	%	16.6%	35.7%	47.7%	100.0%

The study of the second level profile, based on the educational level of the farmers in the sample, showed a medium correlation between educational level and cluster type ( $\chi^2=45.479$ ,  $df=6$ ,  $p<0,001$ , Cramer's  $V=0.329$ ). As we can observe in Table 7, cluster S<sub>1</sub> only includes farmers who have attended primary education, while cluster S<sub>3</sub> mainly includes farmers with a high educational level.

Table 7: Cluster Profile in relation to the Farmers' Educational Level

Clusters		Education				Total
		1	2	3	4	
S <sub>1</sub>	Count	0	28	0	0	28
	%	.0%	100.0%	.0%	.0%	100.0%
S <sub>2</sub>	Count	28	21	21	7	77
	%	36.4%	27.3%	27.3%	9.1%	100.0%
S <sub>3</sub>	Count	28	56	14	7	105
	%	26.7%	6.7%	13.3%	53.3%	100.0%
Total	Count	56	14	35	105	210
	%	26.7%	6.7%	16.7%	50.0%	100.0%

As regards the agricultural income gained by the farmers in the sample, it was observed that a medium correlation exists between this component and cluster type ( $\chi^2=18.535$ ,  $df=6$ ,  $p=0.006$ , Cramer's  $V=0.210$ ). As we can see in Table 8, cluster S<sub>1</sub> has the lowest monthly income gained, while cluster S<sub>3</sub> mainly has the highest monthly income gained.

Table 8: Cluster Profile in relation to the Farmers' Agricultural Income

Clusters		Profit				Total
		1	2	3	4	
S <sub>1</sub>	Count	21	7	0	0	28
	%	75.0%	25.0%	.0%	.0%	100.0%
S <sub>2</sub>	Count	42	21	14	0	77
	%	54.5%	27.3%	18.2%	.0%	100.0%
S <sub>3</sub>	Count	0	14	84	7	105
	%	.0%	13.3%	80.0%	6.7%	100.0%
Total	Count	63	42	98	7	210
	%	30.1%	20.0%	46.6%	3.3%	100.0%

### Conclusions – Suggestions

Customer satisfaction, as a prerequisite for customer loyalty and customer commitment is of particular importance for the development of businesses and organizations (e.g. Banks), that aim to achieve financial targets, such as increasing their profitability, market share, and the performance of their invested capital. The farmers' satisfaction with banking services and agricultural credit in particular is vitally significant, since it is related to whether the farmers will continue to practise agriculture, which is a fact linked to the future development of the agricultural sector.

The present paper studied the level of farmer satisfaction with the existing infrastructure and services regarding agricultural credit, as provided in Greece. Based on the farmers' satisfaction structures, a relevant farmer typology was developed. The

Principal Axis Factoring (PAF) analysis highlighted five satisfaction parameters. The first factor was identified as the satisfaction component that expresses “the financial terms for credit and cost of transactions”. The second factor relates to the satisfaction component that focuses on the “human aspect of services / facilities, equipment and service”. The third factor refers to customer satisfaction and receiving “personal service”, while the fourth expresses the satisfaction component that pertains to the more general “lending terms”. The fifth factor represents a local dimension of satisfaction that can be characterized as the “determining factor of the particular characteristics of agricultural credit”.

Through the application of Data Analysis methods it was possible to formulate a typology of farmers displaying a similar behaviour and perceptions, regarding their level of satisfaction with agricultural credit, as presented in Greece. More specifically, this typology includes three farmer clusters. Cluster  $S_1$  consists of the least satisfied farmers, whose displeasure focuses on the financial terms for banking transactions. It only includes elderly farmers, who have attended primary education and have the lowest monthly agricultural income. Cluster  $S_2$  consists of farmers who portray a high degree of satisfaction with the provided services and level of service, but disagree on the financial terms for credit and the cost of transactions. Cluster  $S_3$  involves farmers who are more satisfied overall. This cluster is predominated by younger farmers of a high educational level, who achieve a high monthly income in their majority. It is worth noting that the farmers in all three clusters express displeasure as regards the particular characteristics of the agricultural credit provided. As we can observe, the older farmers with a low educational level, present an overall disappointment and dissatisfaction with Agricultural Credit, a fact that can be linked to their low income gained and possibly to their reduced capacity to invest in their agricultural holdings. On the contrary, the level of satisfaction with agricultural credit is higher among the younger farmers who have a higher educational level. Young farmers constitute a developmental prospect for Greek agriculture, and also value the quality of the banking services provided, e.g. the provided services, personal service, the variety of banking products, the friendliness of staff, the number of ATMs. At the same time, they are interested in the lending terms and conditions, such as the speed of granting loans and the flexibility in arranging loan instalments.



Based on the results of the typology, it is possible to formulate conclusions and suggestions, regarding the possibilities for further improving agricultural credit, with the development of agriculture as the ultimate aim. More specifically, a policy for improving the financial system that frames the agricultural sector, must be supplemented with measures linked to the particular features and characteristics of agricultural credit in Greece. Such measures should also involve financial terms for loans (loan rates, duration of loan, etc), as well as the criteria for granting loans (viability of the holding, return on investment, introduction of new technology and innovation, etc). In any case, a shift towards new banking products, quality in the transaction environment, a sufficiency of equipment, the necessity to manage agricultural risk, simple procedures and flexibility in granting loans, are all expected to increase the number of young people who choose to continue practicing agriculture, and boost entrepreneurship in the agricultural sector.

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