Political Consumerism and Food Community Networks

Luigi Cembalo[a], Giuseppina Migliore[b], and Giorgio Schifani[b]
[a]Department of Agriculture Economics and Policy, University of Naples Federico II, Italy
[b]Department DEMETRA, University of Palermo, Italy
cembalo@unina.it ; giusi.migliore@unipa.it

Abstract

European society, with its steadily increased welfare levels, is not only concerned about food (safety, prices), but also on other aspects such as biodiversity loss, landscape degradation, pollution of water, soil and atmosphere. To a large extent these concerns can be translated into a wider concept named sustainable development defined as a normative concept by Morgan and Sonnino (2008). Sustainability in the food chain means approaching a new emerging vision of a sustainable agro-food system introducing an institutional dimension to take into account. Among different attempts to conjugate such concepts, there is one that is taking place in many Regions of Italy. In the last years spontaneous aggregations of consumers are developing. They are named Solidarity Purchase Group (SPG). In short, they are characterized by an economy, not necessarily local, ethical and equitable, where social and economic territorial relations tend to develop districts and networks. One of the main characteristics of a SPG is the direct relations between small farms, and their customers with a high content of participation and specialization. The study means to tackle issues related to organizational frameworks, at farm and chain level, and to assess those elements that mark consumer's choices and satisfaction.

Keywords: *Sustainability, New Models of Consumption, Solidarity Purchase Groups, Institutions and Economics*

1 Introduction

Within the economic theory the study of consumer behavior is conceptualized with the neoclassic theory where the representative agent is *Homo Oeconomicus.* In the economic theory, therefore, the assumptions underlying consumer behavior is the principle of rationality according to which individuals tend to maximize their utility based on constraints imposed by income availability (Schotter, 2002).
Numerous criticisms of the neoclassical model on the study of consumer behavior reveal that the behavior of individuals is more than a mere mechanical manifestation of its structure of preferences.
More exactly, it is thought that within the relationship between preference and behavior there is interdependence among choices made by individuals influenced by social codes of behavior.
What we are essentially undermining is the vision of a *Homo Oeconomicus* overly rational and intent on maximizing his/her own satisfaction ignoring all sorts of ethical considerations. In this wide debate what emerges is the more general argument that

Homo Sociologicus has an epistemological status not inferior to the economic formulations (Bianchini, 2007).
Essentially, *Homo Sociologicus* is an individual who, within his sphere of choices, assigns an important value to aspects which go beyond the neoclassic paradigm and on whom external factors have direct implications concerning social behavior and purchase.
In recent years consumption dynamics in genera,l and food ones in particular, have been closely linked to changes in lifestyles.
While the vision of an *Homo Oeconomicus* was justifiable in an economy in which the rationality of ones choices was closely limited to the satisfaction of primary needs (in an environment where food was scarce), today in western societies the consumer is becoming more and more an *Homo Sociologicus* whose models of consumption are strongly influenced by social and cultural factors.
The loss of biodiversity, the degradation of landscape, soil, pollution and waters, as well as social inequalities and the disrespect of workers' rights are all issues that today increasingly condition the individuals' behavior when it comes to purchase decisions.
What emerges is an individual who wants to exercise his/her right of choice, in which the ethical and solidarity dimensions of purchase represent important elements in the new purchase dimension. What is being outlined is the profile of a consumer which sociological literature defines critical citizen (Norris, 1999).
These are individuals who give great value to democratic principles, who show increasing distrust towards the institutions and towards the traditional channels of participation, towards whom consumption confers instruments of direct action, permitting them to intervene in situations which seem to be not sufficiently treated (Foro and Tosi, 2009).
Although *Homo Sociologicus*, as h/she has been identified in the literature, is illustrated as a critical and active individual, he/she is still a consumer that, as such, does not subtract himself from the logics of consumption and of marketing; but the forms of social participation are what represent a breaking point with the market and the occasion to propose a change in perspective (Carrera, 2009) in the promotion of a sustainable and durable development.
A new institutional dimension of sustainability has been observed with increasing evidence, in which strong intersections can be formed among environmental space, society and economy, as is represented in the sustainability prism proposed by Spangenberg (1998) (figure 1).

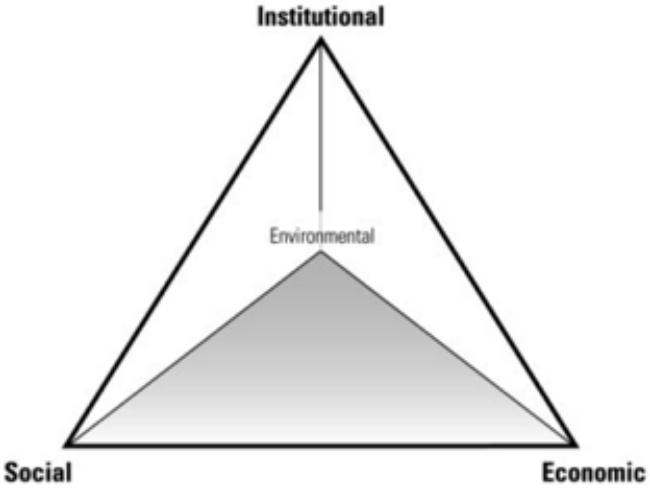


Figure 1. The Four Dimensions of Sustainability

At the base of the growing interest by numerous researchers for what sociology literature defines Political Consumerism*,* there is its strong consolidation in western Countries. From a survey of the European Social Survey (ESS), conducted between 2002 and 2003 in twenty-two European Countries, 28% of the interviewed declared that they had boycotted or that they had carried out on action of critical consumption in the 12 months preceding the survey, with the intent of bringing about improvement or to contrast damage to society.

It has also been seen that the level of institutionalization of consumer organizations, in general, is directly proportional to the diffusion of critical consumption (Forno and Tosi, 2009).

Rather strong institutional forms of political consumerism are seen, at international levels, above all in relationship with the agro-food system, giving life to a purchase network of alternative agro-food products, within which social practices, environmental friendly production models, and new direct economic relations based on trust between farmers and consumers are strongly interlinked.

Among the different forms of social participation which experiment different forms of direct selling to responsible consumers, we have in particular: Farmers Markets, which are the result of the cooperation between social and institutional agents and which have been rapidly growing in the last years even in Italy; Community Supported Agriculture, which involves farmers, often organic, supported by local communities. This form is little diffused in Italy, but recently it has been an object of study in the Campania region by some authors (Cicia *et al*, 2010).

In this study we examine a phenomenon which refers to the diffusion, in the last years. of the Solidarity Purchase Groups (from here referred as GAS from its Italian name: Gruppi di Acquisto Solidale,).

The GAS are spontaneous associations of consumers whose behavior is characterized by a strong ethical and solidarity dimension and in which the territorial economic and social relations between the individuals involved tend to evolve into networks and districts of solidary economics.

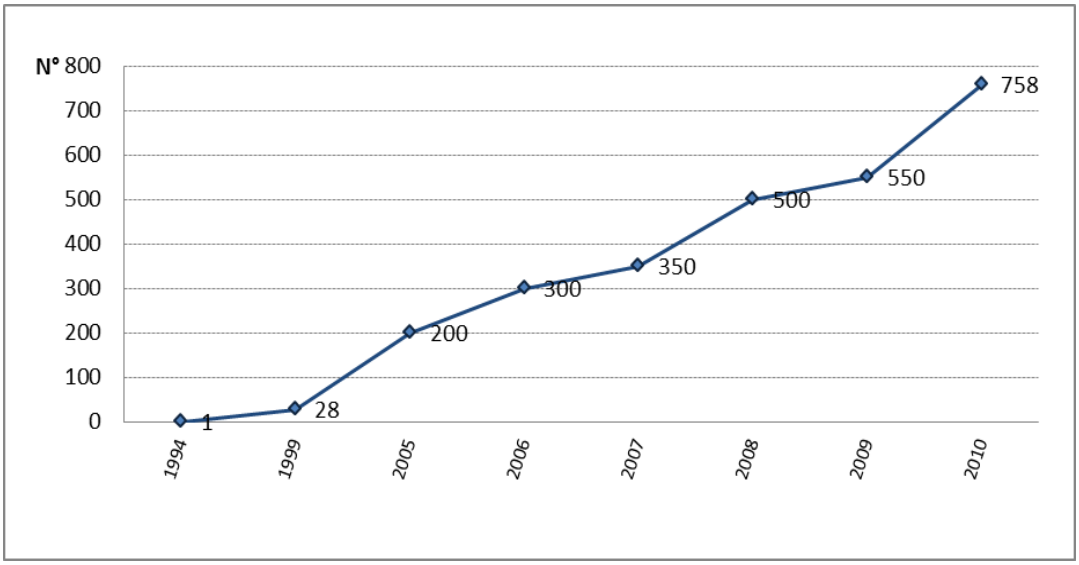
The present study, which is part of a wider study financed by the Sicilian Region[1], analyses the GASs present in Sicily (a region in Southern Italy) where 32 active groups are present, which represent a number of about 1,200 families.
Although this phenomenon is still very marginal and limited to recent years, it can be particularly interesting for its rapid diffusion.
Attention towards this type of political consumerism comes not only from its progressive expansion into areas distant from main cities, where the phenomenon is more noticeable, but also from its impact potential on the regional productive economic system.
Sicily, effectively, has very weak agricultural structures, they are scarcely competitive on the global market, the mean farm utilized land is 4.12 hectares[2] and associations between farmers are still very scarce.
ISTAT[3] data also shows that there has been a progressive fall in number of workers employed in agriculture. In fact data from the population censuses of 2001 and of 1991[4] show a fall in those employed in agriculture equal to 26% and a reduction in the number of farms, from 1990 to 2000[5] of over 19%.
The characterization of ethical content products and the diffusion of the GASs, should this phenomenon assume wider proportions in the future, could contribute to slowing down the process of this exodus from the farms contributing to an amelioration of the territories erosion which is directly linked to the abandoning of agricultural activities.
To evaluate the potential of this phenomenon in Sicily and the effective attention towards themes of sustainability of the agro-food system by the critical citizen a sample of 316 partners belonging to almost all the GASs present and operative in Sicily, representing as many families totaling 946 consumers, was interviewed.
This study is structured as follows: in paragraph 2 the principal characteristics of the GASs and their evolution in time are treated; in paragraph 3 the empirical model implemented and the explicative variables are described; in paragraphs 4 and 5 the principle socio-economic characteristics of the GASs consumer partners and their attitudes towards consumption are put into evidence; while in paragraphs 6 and 7 the profiles which characterize GAS consumers are analyzed. In the last paragraph, some concluding remarks, deriving from the overall results obtained, are presented.

2 The Solidarity Purchase Groups

The growing awareness toward environment issues and toward sustainability, the concerns related to the food scandals and the attention to aspects linked to food safety, but above all the need to express socially ethical and solidary behavior, have all given way in Italy, to the constitution and diffusion of the GASs, a phenomenon which is continuously growing and evolving.

[1] "The development of GASs in Sicily and its relation with the world of production", Demetra Department, University of Palermo, Sicily Region – Department of Food and Agriculture Resources, National Institute of Agricultural Economics (INEA).
[2] 5th General Agriculture Census , Sicily.
[3] Italian National Institute of Statistics.
[4] 13th and 14th General Population Census, Sicily.
[5] 4th and 5th General Agriculture Census , Sicily.

The GASs are consumer groups which gather in formal or informal associations, and decide to share choices and purchases of products, especially organic agro-food products. Such groups are also motivated by an urge to experiment new forms of socialization and participation.
The GASs therefore represent consumer associations characterized by their choice of ethical and critical consumption. They tend to consume responsibly, and they have an important role in activating economic process, especially at a local level.
Moreover, because of their voluntary and participative nature, the GASs represent important instruments of collective growth, in which tight internal and external relational networks are realized with producers and with other GASs.
The first GASs arose in Italy around the middle of the 90's and they have a rapid diffusion initially in the Lombardy and Emilia Romagna regions in northern Italy and then especially, since 2005, in the entire national territory.
Today they are concentrated mostly in the northern regions of Italy and their number, which seems to be largely underestimated, was 758[6] in 2010 (figure 2).
Regarding purchases, the GASs are oriented towards particular products and farms. Products are frequently organic and local and they come from small or medium sized farms that are to be found near the groups (0 Km production) that often have difficulty in entering the traditional commercial channels (Schifani and Albanese, 2010), or from social farms or cooperatives.
In any case producers have to have certain fundamental requirement: preferably they should be certified organic producers; they should adapt environmentally friendly production practices; they should respect rights of the workers involved in the production process; they should be willing to dialogue with the rest of the groups; and finally they should be available for visits on their farms.



Source: our elaboration from data "National network linking GASs" available on web site www.retegas.org, December 2010.

Figure 2. Trend of GASs in Italy from 1994 to 2010

[6] The only data available on GASs which are operating in Italy are on the Italian GAS network web site, where the GASs can register on a voluntary basis.

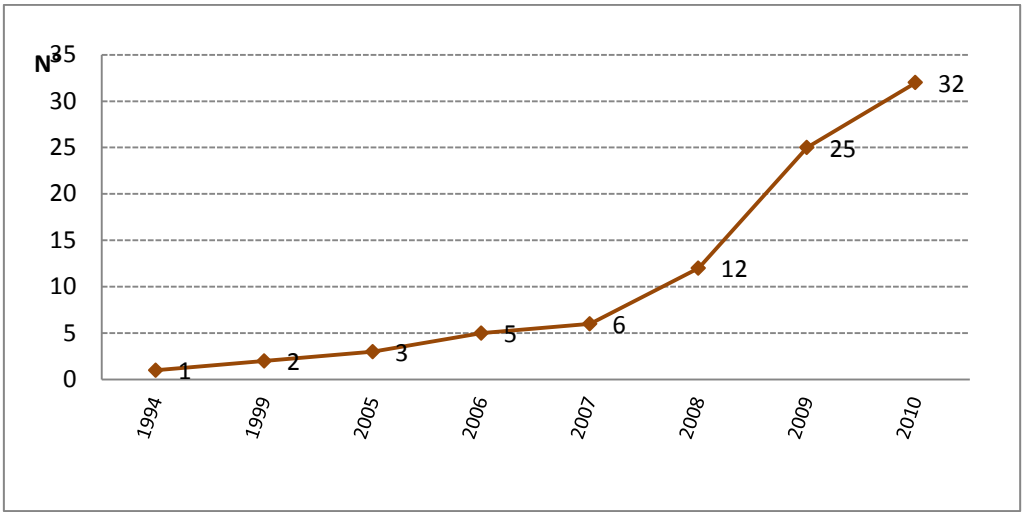
A part from agro-food products, which represent in volume and in value the largest part of GAS purchases, in some cases the groups purchase products of other nature, which come from fair trade channels.

As we have already mentioned, one of the most interesting characteristics of the GASs, apart from aspects linked to environmental and economic sustainability of the local agro-food system, is the experimentation of new forms of socializing and participation: the groups meet periodically to evaluate choices, form new product tasting events, to make decisions, realizing moments of collective choice sharing; a more or less substantial part of partners, generally on a voluntary basis, take part in the organization and management of the purchases and deliveries, and in the organization of cultural activities regarding mainly the diffusion of information on various environmental, agricultural food and in some cases economic and political issues. Among the different activities of a socio-cultural character, the realization of the Time Banks and the Book Banks[7] are particularly interesting. GASs are not isolated groups, interactions among GASs are multiple on the single region level as well as on a national level; GASs promote networks and districts of solidary economy, in which environmental associations, other non-profit organizations, craftsmen, Ethical Banks, are also involved.

In Italy, institutional attention towards this phenomenon starts in 2007, when the Budget Commission of the Italian Government approved an amendment to the Financial Law (Article 5) in which the purposes of the GASs and their non-profit nature are recognized and the fiscal and financial aspects are disciplined.

In Sicily, although the first GAS was established in the province of Syracuse in 1994, the diffusion of GASs is still a recent phenomenon, marginal and limited and essentially referable to very recent years. In particular, from 2007, year in which the phenomenon starts manifesting itself with greater intensity, to December 2010, the number of GASs has notably increased going from 6 to 32 (figure 3).

[7] The Time Banks are based on the free sharing of time and know-how. Each partner dedicates some of his time and in turn receives other services, always on a volunteer basis. The hours that a partner dedicates to a certain cause become credits that can be exchanged through an appropriate service (Bank) among partners. In the Book Banks the partners establish libraries, which are often "virtual", were books that one intends to lend are put at the disposal of other partners, covering in this way cultural and savings needs.



Source: our elaboration on direct surveys, December 2010

Figure 3. Trend of GASs in Sicily from 1994 to 2010

However, we must consider that we are dealing with a dynamic phenomenon, as we observed during the census of GASs in Sicily, in some cases the establishment of new groups is accompanied by the closing or temporary suspension of other groups, the cause of this can mostly be found in the internal organizational aspects and in the volunteer nature which marks the partners participation.

Certain dynamism is also observed within the groups, whose consistency in Sicily results being variable going from a minimum of 8 to a maximum of 150 associated units. This is an aspect that often conditions activities of the groups above all in relation to economical capacity that is necessary to justify the purchase of products (minimum volumes for delivery), on which transport cost can have negative effect.

3 Data used and empirical model

Data collection and sample selection were possible after completion of the first phase of our study in which our analyses develops, and which has allowed us to determine, the consistency and the geographical distribution of GASs over the entire Sicilian territory.

Data was collected in 2010 through the submission of an *ad hoc* questionnaire structured in 3 parts with a total of 32 closed-answer questions: a first set of questions served the purpose of collecting information on the socio-economic characteristics of the family units and of the purchasers; the second part of the questionnaire was dedicated to opinion collections, expressed with the Likert scale 1-5, relative to the aspects regarding the importance given to social and environmental sustainability by the units, and to data collection on purchase frequency and spending percentage through GAS respect to total food purchase by the unit; with the third set of questions, finally, we explore attitudes, opinion and motivations in Likert scale 1-5, relative to organizational and managerial aspects specific to GAS.

The variables collected through the questionnaire were generated on the base of information gathered through informal encounters with GAS partners and by participating at meetings with Sicilian and national GAS members. In figure 4 the

variables subdivided into three sets corresponding to as many sections of the questionnaire are reported. This subdivision is not conceptual, it is functional towards an expositive schematization.
The individuals interviewed, even if not statistically representative of the family partners of the GASs present in Sicily, come from a sample extracted from all Sicilian provinces excluding the province of Trapani in which no GASs were found and the provinces of Agrigento and Enna, where the two GASs present, one for each province, chose to not take part in this survey

Set 1	Set 2	Set 3
Age	Solidarity towards farmers	Interest in visiting farms
Family members	Ethically responsible consumption	Food tasting interest
Income	Convenient prices	Cultural interest
Numbers of income in the family	Trust relation with farmers	General organization satisfaction
Sex	Food safety	GAS discovery mode
Education	Environmental sensibility	Quality satisfaction
	Spending percentage	Price satisfaction
	Spending frequency	Delivery organization satisfaction
	Attention locally sourced products	Family GAS participation level
	Attention towards organic food certification	Buying group experience
		Previous experience with other GAS
		Years of adherence to GAS
		Adherence from constitution of GAS
		Initiative promoter
		Organizational activities
		Associate producer

Figure 4. Variables collected through the questionnaire

Among the 32 GASs contacted, 27 took part in the survey while 3 GASs pertaining respectively to the provinces of Messina, Caltanissetta and Syracuse were excluded from the survey because they were unable to meet deadlines of the survey.
In sample extraction the province with the least number of GAS partners was considered, on which a minimum threshold of sample extraction equal to 30% of individuals present in the GASs was established.
The extraction concerned a total sample of 316 consumers and people responsible for purchase in the partner families of the GAS, representing, as mentioned, 946 family members (Figure 5).

Province	N° GAS	N° Family	Sample extration	Approximation
Caltanissetta	2	190	57,0	57
Catania	3	85	25,5	26
Messina	1	50	15	15
Palermo	12	382	114,6	115
Ragusa	3	153	45,9	46
Syracuse	6	191	57,3	57
Total	**27**	**1051**	**315,3**	**316**

Figure 5. Territorial distribution and sample extraction

To be able to identify the principal characteristics of the people responsible for purchase, the motivations amenable to the perception of the sustainability of the agro-food system, the opinions on the GAS organization, the attitude towards purchase and finally the specific individualization of the profiles of the consumers taking part in the GAS, a Principal Components Analysis (PCA) and subsequently a Cluster Analysis were carried out.

To verify the validity of the starting data for the application of the factorial model two tests were carried out: The Kaiser-Meyer-Olkin Test (KMO), also known as measure of sampling adequacy, which is based on the partial correlations of the variables, and Bartlett's Test of Sphericity[8], that in both cases generated a positive result on the application of the model (Figura 6).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,72
Bartlett's Test of Sphericity	Approx. Chi-Square	2409,32
	df	465
	Sig.	0,0000

Figure 6. KMO and Bartlett's Test

The use of PCA had intent of analytically transforming a set of correlated variables, into a minor number of independent macro-variables putting into practice a synthesis of the information of the set of original variables associated to the minimization of the loss of information; in this way, each component supplies a synthetic representation of the association present among the original variables. The Principal Component Analyses can be expressed by means of the following general formula:

$$Y_{i} = w_{i1} X_{i} + w_{i2} X_{2} + \ldots + w_{ip} X_{p}$$ (9).

Moreover, the component reproduces, in a decreasing order, the maximum of the variation reproducible in that turn and are independent among themselves. The loadings of the contributions furnished by the variables to the principal components is quantified through correlation coefficients called calculated componential loading, between variables and the single principal components.

---

[8] - The partial correlation result from the correlation between two variables when the effect of a third variable is annulled; the formula for calculating the KMO is the following : KMO= $\sum_{i}^{p}\sum_{j\neq i}^{p} r_{ij}^{2} \Big/ \sum_{i}^{p}\sum_{j\neq i}^{p} r_{ij}^{2} + \sum_{i}^{p} \sum_{j\neq i}^{p} r_{ij.12\ldots q}^{2}$

Where $r_{ij.12\ldots q}^{2}$ is the correlation coefficient between X_i and X_j excluding extracted factors and X_{ij} is the simple coefficient between the variables.

- Bartlett's of sphericity is based on Chi-squared:

$$x^{2} = (n - 1 - \frac{2v+5}{6}) Log_{e} \left| R_{vv} \right|$$

where n is the number of cases, v is the number of element present on the diagonal of the correlation matrix and $\left| R_{vv} \right|$ is the determinant of the correlation matrix. The degrees of freedom are calculated in the following way :

$$df = v\frac{v-1}{2}$$

(9) Where Y_i is the i-th new variable, $X_1, X_2, \ldots\ldots, X_p$ are the standardized original P variables and $w_{i1}, w_{i2}, \ldots, w_{ip}$, are the values of the loading weights associated to each of them.

After the PCAs, Factor scores were produced on each principal component which express the contribution of each observation on the composition of factors. The factors scores are used for the subsequent Cluster Analysis and for the econometric model.

4 General characteristics of the GAS consumers

In confronting the data generated in the present analysis with the ISTAT statistics, some of the principal socio-economic characteristics of the GAS consumers were outlined.
The prevalent age groups seen among the consumers of the sample was between 40 and 49 (36,4% of the sample) and 50 – 59 (30,4%), values which are superior to the regional statistic data.
These data lead age groups are more sensible towards issues concerning agro-food system sustainability (figure 7).

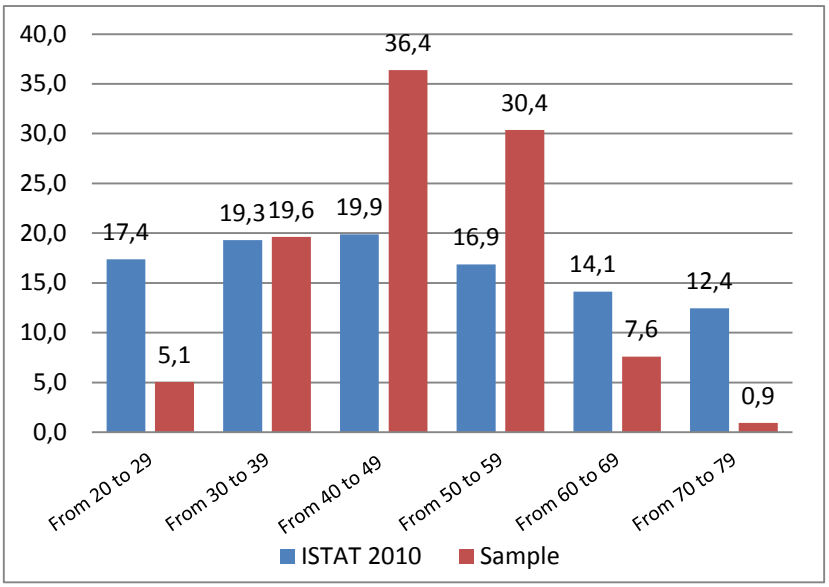


Figure 7. Age groups distribution

The education level of the GAS consumers resulted being rather elevated, in fact with respect to the census data, the individuals who possessed a High School Diploma or a University Degree present a higher incidence; and this element leads us to think that there could be a direct relation between scholar level and the propensity to adhere to consumer associations (Figure 8).

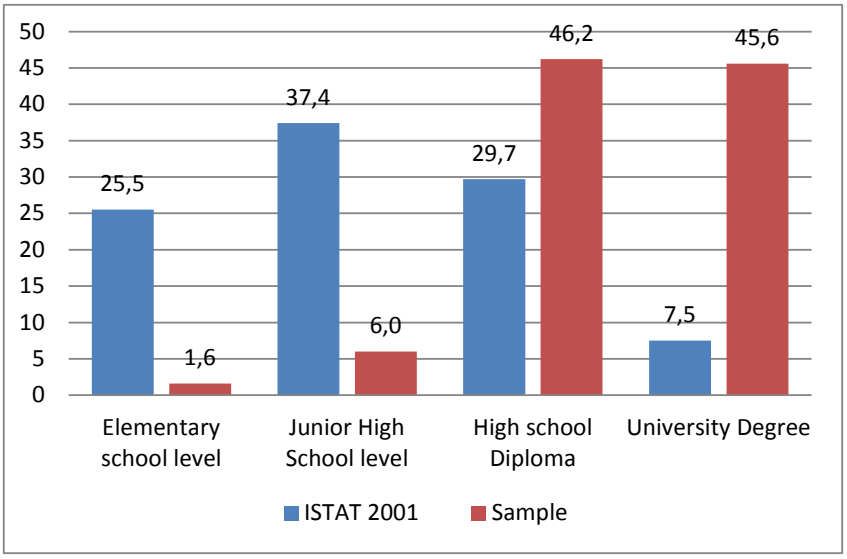


Figure 8. Distribution of education among the sample and the Sicilian population

Family size is prevalently large, when confronted with census data, in fact 60% of the sample belongs to a family of 3 or 4 members (Figure 9).

The political consumer of the GAS does not have a particularly high income level. From the latest available ISTAT data regarding Sicilian population pro-capite monthly income, which in 2008 equaled 1.790 euros a month, the income levels found within the family units did not exceed, in most cases, 2.500 euros a month; we must also consider that in over 55% of the family units two members of the family contributed in composing the average monthly income (figures 10 and 11)

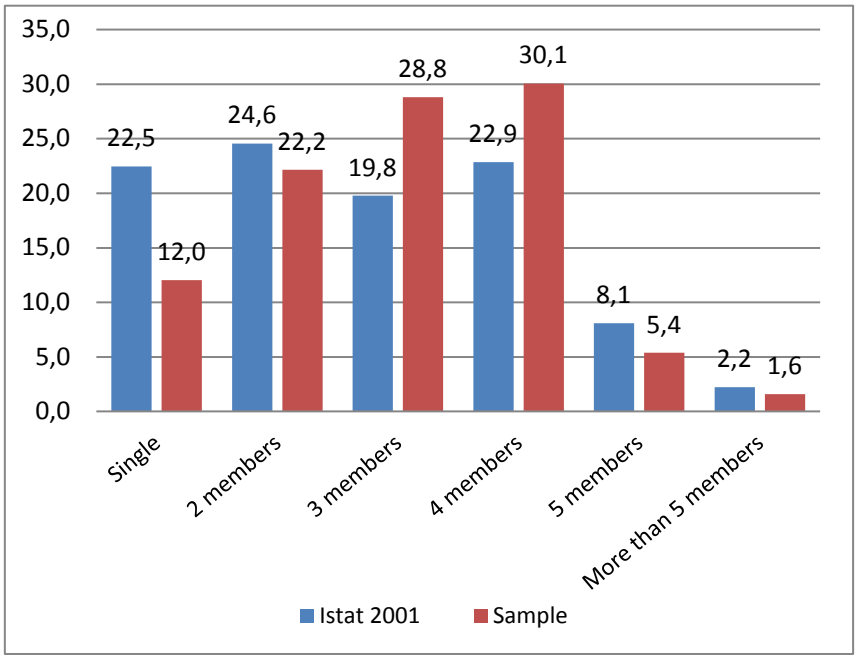


Figure 9. Distribution of family units sizes among the sample and the census data

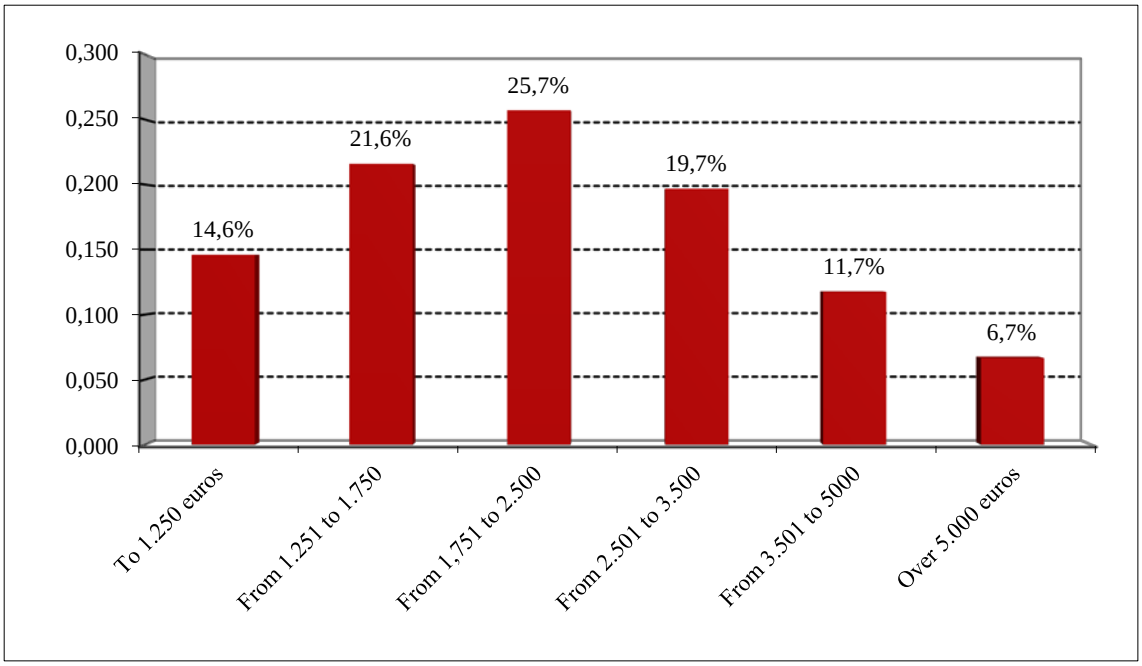


Figure 10. Distribution of the income groups of the family units

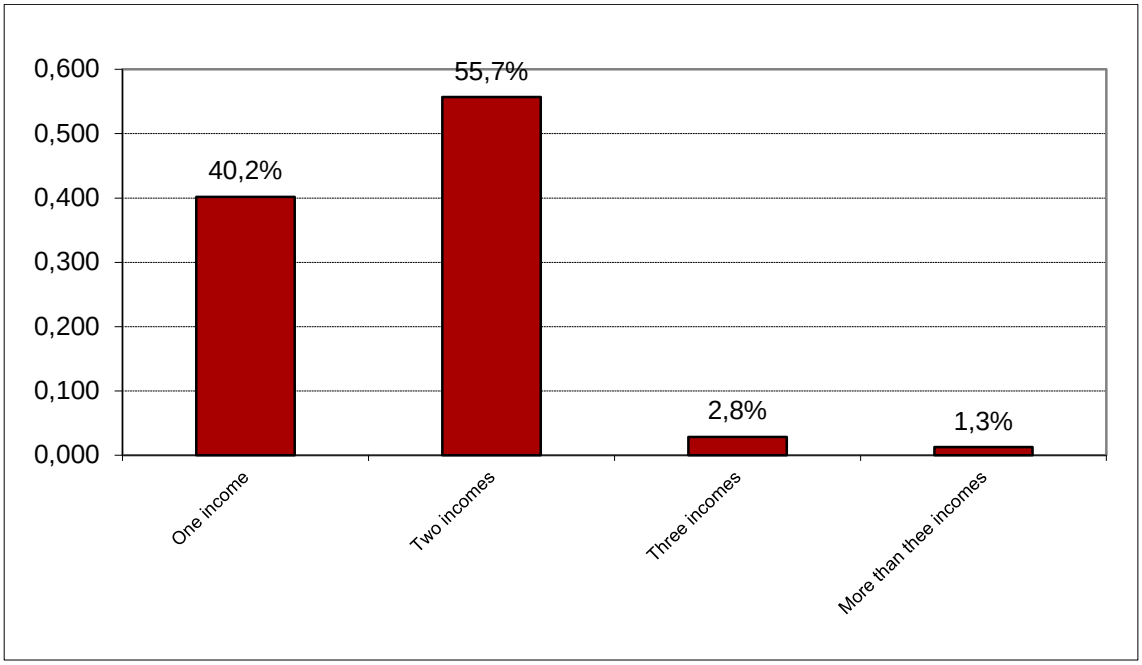


Figure 11. Type of income present in family units

5 Consumers factors and attitude

The application of Factor Analysis has consented us to reduce the information contained in 32 original variables into 10 Principal Components which totally reassume 61,3% of the total variance.
For the choice of the number of components being extracted we referred to the major self- value Criteria of 1 (also called the Kaiser Criteria).
Three variables, on the 32 present in the model, presented componential loadings approximately equal on three components, therefore we decided to carry out a Varimax rotation[10].
The first Component after the rotation reproduced alone 10% of the explained variance, the second 8%, the third 7,6% and so on to the tenth which alone reproduces 3,2% of the explained variance.
The first Principal Component (or factor) extracted was named "Sustainability of the agro-food system" because it resulted being characterized by the variables amenable to the motivations which brought the individuals to adhere to the GAS, for example: solidarity towards producers (+0.772), environmental sustainability (+ 0.775), trust relationship with farmers (+0.736), food safety (+0,721), responsible consumption (+0.551) and convenient prices (+0.530); this last variable, although less incisive with respect to the others, leads us to suppose, that even though the themes directly connectable to environmental and social solidarity, are very strong, the "rational" component, expressed by the attention given to convenient prices of the products purchased at the GASs, is present, even if, in modest measures.
The second Component extracted is grouped in the variables: interest in the cultural initiatives organized by the GASs, interest in the visits on the farms and interest in food-tasting events. This second Component was denominated "Interest in the activities organized by the GAS.
The third Factor, named "Satisfaction toward services and products" receives elevated impulses from the variables which consent to express the level of satisfaction by the units regarding prices of the organic products[11] (+0.757), satisfaction level regarding quality of products (+0.728), satisfaction level regarding delivery (+0.676) and the level of participation in the GAS activities (+0.472) (figure 10).
The fourth Component is characterized by variables which consent us to define the economic characteristics of the family units, for example the number of family members, the number of incomes in a family, and the total average monthly income; the fourth Component was called "Economic component of family units".
The period of time that the partners adhered to the GAS is expressed in the fifth Component, named "Adhesion period to GAS", and is characterized by high positive

[10] More in detail the Varimax rotation is on orthogonal type of rotation which seeks the position of the axis that maximizes the variance among all the factors, through a transformation of the factorial coefficients of each factor. In particular what has to be maximized is the variance of the factorial coefficients squared among the factors (De Lillo et al, 2007).

[11] Price satisfaction regarding organic products is explained with the final price being much lower when confronted with prices in the traditional channels of distribution. In fact, in the GASs there are no intermediaries between farmer and consumer resulting in lower prices for consumers and higher earnings for producers.

saturations of the variables: adhesion to GAS from its constitution (+0.832), as also by the variable which identified the promoters of the initiative (+0,667) and by the variable relative to the years of adhesion to the GAS, which, instead manifested a negative saturation (-0.473).
Previous experiences in purchase groups[12] (+0.752) and/or in other GASs (+0.762), as the contact forms with the GAS are the variables which saturate the sixth Factor which is defined "Collective purchase experiences".

	Component									
	1	2	3	4	5	6	7	8	9	10
Age	-,013	-,119	-,029	,188	-,102	,063	-,396	**,502**	,069	-,338
Household size	-,047	-,001	,025	**,728**	-,104	-,030	-,114	-,206	-,021	,106
Number of income in family	,030	,122	-,068	**,761**	,049	-,094	,081	-,019	-,042	,099
Income	,009	-,057	,086	**,760**	-,031	-,008	,237	,181	-,009	-,201
Education	,199	,083	,097	,152	,025	,049	**,714**	,075	-,139	-,056
Spending percentage	,142	,187	,180	,021	,011	-,029	-,075	,383	**,528**	,151
Spending frequency	-,132	-,083	,040	,091	-,118	,076	,132	,198	**-,644**	,122
Quality satisfaction	,122	,095	**,728**	,100	,164	,011	,154	,060	,143	,040
Price satisfaction	,069	-,088	**,757**	,013	-,031	,069	,052	,089	-,046	,112
Attention locally sourced products	,167	,095	,128	-,112	-,180	-,169	,152	,253	-,254	**,453**
Delivery organisation satisfaction	,033	,237	**,676**	,016	,086	-,023	-,120	-,271	-,164	-,150
EPG participation	,078	,211	**,472**	-,117	-,224	-,138	-,061	,253	-,023	,123
Attention towards organic food certification	,008	,019	,053	,100	,010	,062	-,048	-,066	,027	**,817**
Solidarity towards farmers	**,772**	,181	,053	,069	-,008	,037	,094	,109	,066	-,055
Ethically responsible consumption	**,551**	,234	,034	-,045	,098	-,018	,254	-,008	,063	,160
Convenient prices	**,530**	-,233	,314	-,006	-,208	,235	-,177	-,011	-,034	-,068
Trust relation with producer	**,736**	,071	,194	-,076	,015	,055	-,089	,065	-,058	-,099
Food safety	**,721**	,079	,013	,073	,031	,082	,053	-,087	,190	,159
Environment sensibility	**,755**	,216	-,119	-,039	,080	-,006	,112	,023	,026	,039
Interest in visiting farms	,178	**,813**	,031	,089	-,025	,071	,117	,073	,135	,027
Food tasteing interest	,212	**,762**	,101	-,070	-,110	,082	,131	-,004	,091	,061
Cultural interest	,184	**,819**	,126	,062	-,098	-,069	,007	,096	-,031	,004
General organization satisfaction	-,042	,066	,328	,025	,371	,216	-,371	,179	**-,427**	,127
EPG discovery mode	,162	,168	-,056	,018	,007	**,577**	,127	,205	,353	,273
Buying group experience	,052	,033	-,006	-,144	-,014	**,752**	-,012	-,231	-,098	-,035
Previous experience with other epg	,070	-,027	,025	-,011	,082	**,762**	,059	,106	-,100	-,050
Years of adherence to epg	-,089	,079	,446	-,145	**-,473**	-,087	,108	,076	,255	,012
Adherence from constitution of epg	,044	-,023	,044	-,098	**,832**	,003	,143	-,022	,098	,012
Initiative promoter	,041	-,286	,053	-,062	**,667**	,010	,063	-,275	,077	-,099
Organizational activities	-,040	-,131	-,069	,116	,144	,010	-,074	**-,631**	,099	-,021
Associate producer	,012	,232	,005	,081	,334	,170	**,499**	-,056	,013	,090

Figure 12. Components matrix. Extraction method: (PCA); *Rotation method: Varimax with Kaiser normalization*

The seventh Component, defined "Cultural level of buyers" receives high saturations from the variable " study level" (+0.714) and from the variable "Producer partners" (+0.499) which in this specific case refers to consumer partners[13].

[12] Purchase groups are organized product purchase forms which are not motivated by aspects of environmental or social solidarity, but prevalently, by aspects of economic and organizational convenience for the purchases.
[13] The interpretation of the variable producer partner is amenable to the distribution of frequency of the forms expressed by the same variables.

"Participation in the organization of the GAS" is the name of the eighth Component which is characterized by the variables: promotion of organizational activities (-0.631) and age partners (+0.502).
The ninth Factor was negatively characterized by the variables: purchase frequency (-0.644) and general satisfaction regarding GAS (-0.427) and positively by the spending percentage (+0.528); for these reasons the ninth Component was called "Importance of purchases".
The tenth and last Component was named "Attention toward organic-local products", and results in being strongly saturated by the variables: attention towards organic certification (+0.817) and attention towards local origin of products (+0.453).

6 Characterization of the consumers: Cluster Analysis

To be able to individualize the principal characteristics of the GAS members the Custer Analysis procedure was adapted with aim of growing individuals in groups with the same characteristics. Among the cluster techniques, for this present research, the aggregation around mobile center technique was used (also called of the K-means)[14].
Through the Cluster Analysis three cluster of individuals were identified whose final cluster center are reported in Figure 11.

	Clusters		
	1	2	3
Agro-food system sustainability	-,657	,348	,176
Interest towards activities organized by GAS	,000	,044	-,150
Product and service satisfaction	-,058	-,015	,171
Economical component of the family units	-,612	,519	-,497
Adhesion period to GAS	,179	,062	-,579
Group purchase experience	,220	-,169	,120
Cultural level of buyers	,311	,215	-1,369
Partecipation in the organization of the GAS	,443	-,241	-,097
Importance of purchases	-,200	,135	-,044
Attention towards local-organic products	,338	-,057	-,505

Figure 13. *Final centers of the clusters*

First Cluster – Consumers not satisfied
The first cluster is made up of 101 individuals, equal to 32% of sample, and results mostly characterized by the first Component (-0.657), by the fifth (-0.612), by the eighth (+0.443) and by the tenth (+0.338); and even if, in minor measure the sixth and ninth Component contribute to the characterization of the first cluster.
In particular, we are dealing with consumers little inclined towards environmental and social sustainability, who have very high income and education levels, aged 40 to 59 who do not take part in the organizational activities of the GAS; generally, in this group

[14] The advantage of the K-means technique lies in the shifting of cases from one group to another optimizing the objective-criteria.

we find consumers who do not have previous experiences with other purchase groups or other GASs. The individuals belonging to this group show a low general satisfaction towards the GAS, correlated with the low purchase frequency and with the modest percentage of buying dedicated to the GAS products.
Although the sustainability matters are not seen as elements to justify belonging to a GAS, these consumers show an elevated attention towards local products and towards certified organic products.
Opportunity seems to guide these individuals towards their adhesion to the GASs.

Second Cluster – Very solidary consumers
More than 52% of the interviewed are concentrated in this groups; they are individuals who pay great attention to the environmental and social solidarity matters. In general, family units with two incomes belong to this group, whose average monthly income is not particularly high, between 1.750 and 2.500 euros, the study level of the responsible for purchases is on average rather high (high school diploma and in some cases university degree). The individuals belonging to this group are particularly busy in the activity organization of the GAS, among which there is, the organization of the farm visits, food-tasting, cultural events and order management. People who have had previous experience with other GASs are present in this group. We also find, in this second cluster, consumers who shop on a weekly basis, and who buy over 50% of their food at the GAS.

Third Cluster – Average solidary consumers
The third cluster is numerically the least represented, it groups 15,5% of the interviewed sample.
Within this group the social and environmental solidarity aspect are felt in a medium way, even if the members show low attention towards organic certification and are highly satisfied by the prices of the products bought through the GAS.
These are consumers who are not interested in the organizational activities, with an average monthly income lower than other cases, and a medium-low educational level.
Partner producers and consumers who have been members of the GAS for a long period of time (over two years) and a part of those who have no previous experience with other GASs are found in this cluster.

7 Consumer characterization: econometric model

We added another analyses to the ones previously described which was obtained through the implementation of an econometric model which has the aim of identifying eventual functional relations between an indicator which synthesizes the principal characteristics of the members of the Sicilian GASs, and some of the variables obtained with the help of our questionnaire.
The use of an econometric model adds information on the respondents, investigating, through the calculations of coefficients, on the forces of the entire sample relative to the motivations bringing to the participation in the GASs, and to the satisfaction regarding some organizational and motivational characteristics of the participants. Hence, our results allow us, not only to elaborate a sort of identikit of the

citizen/consumer, but also to foresee, with due caution, the future perspectives of the GASs. The hypothesis subject to empirical test was to correlate the factor scores obtained by ACP, in relation to only the first factor[15], with some explanatory variables in our view, crucial in the identification, characterization and satisfaction levels of the GASs

The estimation method used was ordinary least squares robust[16]. The explicative variables selected for the model are listed in figure 14.

Although the significance of the variables is self-evident, it seems appropriate to describe briefly the reasons of our choice compared to the total variables shown.

The variables from 1 to 4 (group A) indicate the socio-demographic and structural characteristics respectively of the respondent and of the GAS unit. The variables from 5 to 17 (group B) identify the attitude of the unit towards the initiative and its own grade of satisfaction towards the GAS, including general organization (logistics and promotion of cultural events) and products purchased through the established commercial agreements. Finally, the variables 18 and 19 (group C) identify two figures of great importance for the good outcome of the initiative that is the partner promoters, who stimulate demand and the producer partners who promote the offer.

[15] The decision to consider only the 1st factor derives from the capacity to include within factor 1 a great part of the variability of the sample. Remaining with the description of the factors of paragraph 5 of this paper, we need only to remind that Factor 1 was defined “Agro-food systems sustainability” since it is characterized by the variables amenable to the motivations that brought the individuals to adhere to the GAS.

[16] Since the evaluation method is well know we preferred to not describe it in detail in this paper. For further details see Cameron *et al.,*2005 and Greene, 2008. The software used for evaluation is STATA version 11.

	Variables
Group A	1 Age
	2 Gender
	3 Family income
	4 Education
Group B	5 Price convenience
	6 Degree of trustu to local producers
	7 GASs budget share on total food consumption
	8 Environmental sensitivity
	9 Ethical and responsible consumption
	10 Solidarity to farmers
	11 Degree of attention to local products
	12 Degree of attention to organic products certification
	13 Interests on cultural events promotion
	14 Degree of satisfatction concerning products distribution logistic
	15 Degree of satisfatction concerning quality of products
	16 Modality of first contact with a GAS
	17 Number of years partecipating in a GAS
Group C	18 Initiative's partner promoter
	19 Producer partner associate

Figure 14. Explicative variables individuated for the empiric hypothesis

Variables	$\hat{\beta}_i$	σ_i	t	P>|t|	[95% Conf.	Interval]
15. Degree of satisfatction concerning quality of products	0,156	0,0849	1,83	0,068	-0,0114	0,3228
11. Degree of attention to local products	0,158	0,0622	2,54	0,012	0,0353	0,2803
17. Number of years partecipating in a GAS	-0,382	0,1199	-3,18	0,002	-0,6174	-0,1457
7. GASs budget share on total food consumption	0,309	0,1287	2,40	0,017	0,0555	0,5621
13. Interests on cultural events promotion	0,110	0,0473	2,32	0,021	0,0166	0,2026
Costant	-1,602	0,3912	-4,10	0,000	-2,3718	-0,8323

Dependent variable:Factorial score of the 1st factor resulted by the PCA

Method: OLS robust

Number of obs. = 315
F(5, 309) = 7.50
Prob > F = 0.0000
R-square = 0.0923
Root MSE = 1.0747

Figure 15. Results of the econometric model

The coefficients with a positive sign relating to the variables “Attention towards local origin of the products”(11), “GAS purchase percentage over all (7)” and “Interest for the cultural initiatives of the GAS (13)” suggest a lecture which is closer to elements outside the market or anyway far from the vision of a consumer intent on maximizing his own utility, subject to purchase bonds, which suggest an accumulation of goods in

a sometimes, not critical way. It is on the intrinsic meaning of these variables that political consumerism is based which looks towards the “local” as a governing instrument, rather than contrasting the “global”. However, the presence of the variable “Product quality satisfaction (15)” identifies a consumer aware of these transversal characteristics in the economic approaches linked to consumption. Another important variable, according to us, is the “years of adherence to GAS (7)”.
The negative sign seems to indicate a certain “weariness” of the GAS members which has, as a consequence, a turnover of participants and even if there is a positive balance with new entries and partners leaving the GAS, this aspect has to be considered by the GAS participants and by the public operator.
Among the variables which resulted in being statistically insignificant, number 5, 9 and 12 (Figure 14) stand out particularly. In fact the “Evaluation on price convenience (5)” does not seem to be an important decisional and/or behavioral element as was the perception of the quality of the products. The variables “Responsible and ethical consumption (9)” and “Attention towards organic certification of the products (12)” are overcome by the agreements that each GAS makes with the farmers.
In fact, the farmers commit to low environmental impact agricultural practices, without residues of active principles harmful to health on the products sold, and to following an ethical behavior code in using manpower.
If we add to these characteristics the proximity of the production to the consumption (the so-called Km0 products), the participants of the GASs obtain, with absolutely informal contracts guarantees that go well beyond any quality certification system. Moreover these contracts allow to satisfy every request, corresponding to the summit of the prism of sustainability described in the first paragraph, which have emerged during the recent debate on sustainability.

8 Conclusions

The study on consumer organizations, in particular on the specialized ones like the GASs, is today a new form of research in the economic- institutional panorama.
The stress put on this form of consumer participation, in this study, comes, above all, from the will to define the elements which distinguish the individuals taking part in this form of consumption, so as to estimate the expansion and consolidation of this initiative in the Sicilian region territory.
In Sicily, individuals belonging to GASs have a medium-high level of education, aged 40 – 59 and are part of a family made up of 3 or 4 members.
While it has been seen in the literature that the organic food has a medium high income, the political consumer seen in Sicilian GASs has a total family income which, in over 60% of the cases, does not exceed 2.500 euros a month.
The results of this research have shown that the GAS is a particularly complex phenomenon, outlining different ways of perception of sustainability in the agro-food system and belonging to the group.
The three consumer profiles that were traced, even if aware of the product price component, show, in most cases, a marked sensibility towards environmental, social and economic sustainability. The participative approach is revealed with different intensities.

In fact, about half of the respondents show scarce attention towards the organizational activities in the GASs, against another number of individuals who, instead, are particularly active in the organization of cultural events such as food-tastings and visits to the farms that furnish the group.
The system of participation of the GASs is under many aspects very unique in the panorama of the forms of observable political consumerism. Its uniqueness lies principally on the spontaneous way that these groups come about and in their self-management.
One would affirm that consumers not only express more and more modern requests pertaining to the sustainability of the agro-food system, but also, when they do not find answers on the market, they themselves generate organized forms which satisfy their needs which are getting more and more complex and less and less linked to mere accumulation of goods.
In fact, with informal contract, they obtain guarantees which exceed today's quality certification systems in force.
From the results obtained, and in relation to the sample analyzed, it can be affirmed that the dynamism of the phenomenon will have to face the part of participants who operate on a rational egoistic basis, where commercial aspects prevail over ethic and solidarity.
The impact that the diffusion of GASs has on the agricultural world cannot be overseen.
Besides supporting the farms from an economical point of view, the direct relationships based on mutual solidarity and acquaintance and guided by shared ethics, which are established between the groups and the small food farms, stimulate the farmers to improve methods of management and organization of the farms and to assume major responsibilities.
The constant confrontations with these associative forms, to which in some cases the farmers and their families adhere, supplies the farmer with important elements for the comprehension of the needs expressed by GAS members, which can facilitate the stability of the relationships in the view of mutual satisfaction.
The diffusion of the phenomenon, especially if today's development trends will be confirmed in the coming years, could stimulate, as a collateral effect, major attention by other economical operators, and not only of the agro-food system.
We hope that many of *Homo Sociologicus* requests expressed by GAS consumers will be heard, if not all at least in part, by the traditional and mass channels of distribution.
To this end it is necessary that the GASs continue to press on the local realities in a consistent manner and that a regional GAS network is created which could represent an important element towards self-determination of an always growing number of consumer-citizens.

References

Bianchini, E., (2007). *Rivelazione delle Preferenze, Determinanti Sociali dell'Utilità e Rilevanza dei Dati Soggettivi*. Studi e Note di Economia. Anno XII, n.2-2007, articolo sul web.

Cameron, A. Colin e Pravin K. Trivedi, (2005). M*icroeconometrics: Methods and Applications*, 1st edition, Cambridge

Carrera, L., (2009). *I gruppi di Acquisto Solidale. Una prospettiva solida nella società liquida,* in Forno F., Tosi S., (a cura di) *Partecipazione e Conflitto. Partecipazione politica e denaro.* FrancoAngeli, Milano.

Cicia , G., Cembalo, L., Del Giudice, T., (2010). *Consumer Preferences and Customer Satisfaction Analysis: A New Method Proposal*. *Journal of Food Products Marketing*, Volume **17** Issue 1: 79.

De Lillo A., Argentin, G., Lucchini, M., Sarti, S., Terraneo, M., (2007). *Analisi Multivariata per le Scienze sociali*. Pearson Paravia Bruno Mondadori, Piacenza.

European Social Survey, archivio dati disponibili sul sito www.europeansocialsurvey.org, dicembre 2010.

Forno F., Tosi S., (2009). *Partecipazione e Conflitto. Partecipazione politica e denaro.* FrancoAngeli, Milano.

Greene, William H., (2008). *Econometric Analysis*. 6th Edition, Prentice Hall. L.296/2006: Finanziaria 2007. www.parlamento.it/

Norris P., (1999). *Critical Citizens*. Oxford University Press, Oxford

Schifani, G., Albanese, A., (2010). *Diffusione e caratteristiche dei Gruppi di Acquisto Solidale: primi elementi di un'indagine esplorativa in Sicilia*, relazione presentata al seminario INEA *Lo sviluppo rurale in Sicilia: Esperienze a confronto tra emergenze e nuove opportunità: La filiera Corta*. Palermo, 16 aprile 2010.

Schotter, A., (2002. *Microeconomia*. G. Giappichelli Editore, Torino.

4 Censimento Generale dell'Agricoltura, (1990), ISTAT, Roma.

5 Censimento Generale dell'Agricoltura, (2000), dati disponibili sul sito web dell'ISTAT

13 Censimento Generale della Popolazione, (1991), ISTAT, Roma.

14 Censimento Generale della Popolazione, (2001), dati disponibili sul sito web dell'ISTAT.