Consumers' attitude towards farmers' markets: an explorative analysis in Tuscany

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Abstract

Farmers Markets (FMs) around the world are often considered as one key response to the less sustainable conventional food production systems. Despite the economic crisis, international studies show that the most important factor leading people to buy fresh products in these points of sale is the quality. In fact, consumers usually cite "better food quality", "locally produced foods", "higher social interaction" and "learning directly about the vendors and their food production practices", as the principal motivations in buying in FM environment. In this paper the results of a survey carried out in several FMs and shops in Tuscany are presented. A sample of consumers were interviewed on-site using a structured questionnaire. The attitude of respondent towards FM was assessed using a test scale composed of 16 items referring to five different features of this form of distribution, supposed to be relevant in the consumer choice: quality of products, direct contact with farmers, convenience, environmental sustainability, and support for rural development processes. The high level of reliability of the attitude scale allowed its use in performing a cluster analysis of observed units. The cluster analysis allowed to identify two groups of consumers with different characteristics both in term of socio-economic descriptive variables and in term of attitudes and motivations towards FMs.

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1 Introduction

Farmers Markets (FMs) around the world are often considered as one key response to the less sustainable conventional food production systems (Feagan and Morris, 2009). FMs are probably the oldest and most common type of direct marketing. Because they are able to bring food producers and consumers close together (Feagan *et al.*, 2004; Kirwan, 2004), they can be considered a paradigmatic example of an *alternative food network* (Goodman, 2004). More than ever in the last two decades, they have offered a number of consumers their first experience in approaching re-localized and re-socialized forms of exchange.

International studies seem to show that the most important factor leading people to approach this type of sale is not the price, as might be thought given the expansion of the phenomenon in a time of economic crisis, but rather the quality (Cavicchi and Rocchi, 2010). In fact, consumers usually cite "better food quality", "locally produced foods", "higher social interaction" and "learning directly about the vendors and their food production practices", as the principal motivations in buying in FM environment (Gale, 1997; Govindasamy *et al.*, 1998; Trobe, 2001; Halweil, 2002).

In Italy a mix of historical, political, institutional and cultural factors (including a strong culinary heritage) supported the resilience of traditional forms of retail, such as the urban outlets for vegetables and fruits and, according to regional specializations, the direct marketing of foods directly processed by local farms (such as wine or olive oil in Tuscany). As a consequence, the ongoing movement toward re-localization of food supply chains, beginning in the early 1970s, found in Italy a relevant share of consumers with good attitudes towards these forms of distribution. From this point of view, the diffusion of FMs in Italy in the last years appears in many cases to be the result of a change in motivations rather than a deep change in shopping habits (Cavicchi and Rocchi, 2010).

In recent years, partly due to EU regulation on rural development that fosters new commercial outlets for local and typical products, new regulations have been adopted which are more and more oriented towards the facilitation of direct marketing by farmers. In 2007 a decree of the Ministry of Agriculture regulating FMs gave a strong incentive to the development of the phenomenon of FM in Italy.

The aim of this research is first tentative to model attitudes, motivations and purchasing behaviour of consumers who buy in Farmer Markets in Tuscany. This paper presents the results of an explorative survey with the development of a test of attitude towards FMs in order to characterize different consumers' profiles.

The paper is structured as follows. Firstly, a literature review about the definition and the role Short Food Supply Chains and Farmers Markets

is presented. Then Materials and Methods used to carry out the analysis are described and thus the results of reliability and cluster analysis are shown. In the last paragraph, some conclusions are drawn and some issues to develop and deepen the analysis are discussed.

2 Literature review: short food supply chains ad farmer's markets

2.1 Short Food Supply Chains (SFSCs)

Last years have been characterized by a growing and even more conscious integration between producers and consumers. Concerning the supply side, many farmers opened new streams of alternative productions and undertook new marketing strategies. A new dynamism in food markets has been observed within a new general transition of rural economy towards a new paradigm of development (Van der Ploeg *et al.*, 2000).

In fact, the creation and the evolution of new and alternative supply chains, the so-called Alternative Food Networks (AFN), have contributed to a new model of rural development where farmers can often get a higher value than that obtained dealing with the modern retail distribution system. That movement, born in 1970s, seeks production methods not dominated by the industrial agri-food system: methods that will ensure the survival of different forms of agriculture responsive to consumer demand (Rossi *et al.*, 2008).

The Short Food Supply Chains (SFSCs) represent the farmers' attempt to re-gain value in the supply chain. Some authors (Marsden *et al.*, 2000; Renting *et al.*, 2003) consider that AFN have the capacity to re-socialize and re-localize the productions through a more strict and authentic relationship between consumers, producers and their products. Thus, the difference between AFNs or SFSCs and the traditional retailing system is that the food arrives to the consumers with a different information level.

In fact, the consumer, through the direct knowledge of producers' experience, can better understand the value of attributes and characteristics and how they are related to the territory. New words have been coined by media to describe this phenomenon. For instance, the New Oxford American Dictionary proclaimed *locavore* word of the year in 2007. This word well describes those consumers who are aware of the impact of food selection on the environment and who look for locally produced foods and beverages (Thilmany *et al.*, 2008).

The re-localization process, from the point of view of farmers can be considered as a strategy for re-positioning in the market in order to counteract the globalization of food systems; for consumers instead is the answer to their needs for quality, safety and authenticity; for public policies it can

be viewed as a solution to the growing need for sustainability or as an opportunity in the bundle of strategies of territorial marketing and rural development.

According to Brunori *et al.* (2007) re-localization implies an innovation process built on new resources: the competition with conventional supply chains is more and more difficult if based on production costs, technology and volume of production and thus the territory seems the key resource to compete on quality ground.

AFNs can be considered as part of a new "economy of scopes" or "synergy effects", in contrast with the dominant "economy of scales" of the period started after the II world war (Marsden *et al.*, 2000).

Some authors (Venn *et al.*, 2006) have recently studied and analyzed the European literature about AFNs and have classified the several existing forms that the relation between food consumption and production can present. The first category is "producers as consumers" and relates to the phenomenon of those communities where products are consumed by the same group of people who produce them. It is the case of cooperatives or communities with specific projects of self-consumption targeted at specific groups such as low incomes or ethnic minorities.

The second kind of initiative, called "Producer-consumer Partnership' is related to certain agreements between producers and consumers where risks and profits/rewards are shared in different measure. An example is the so-called Community Supported Agricolture (CSA) where consumers are directly involved in programming cultivation and sustaining the cost of small and medium firms. The reward for consumers can be the weekly supply of fresh products. The consequence is a network of relations around the firm based on reciprocal trust and only partially oriented to the profit.

The third category is that of "direct selling" without intermediaries that give the chance to live a face-to-face relationship between producers and consumers and let the possibility to consumers to get food with clear and trustable origin. Some examples are Farm Gate Sales, Cooperatives of producers, E-commerce and Farmer Markets.

Last initiative is that of "specialist retailers" who give particular importance to place of origin and production process and who act as unique intermediary between producer and consumer. Consumers have less opportunity to directly know producers but sellers can share much information and can be considered trustable by consumers. They often sell high value-added, quality or speciality foods and may be targeted at tourists. Some examples can be Online grocers and Specialist wholesalers.

Others (Renting *et al.*, 2003) propose another classification in three categories. The first one is the *Face-to-face* type where consumer purchases a product direct from the producer/processor and authenticity and trust are mediated through their personal interaction; this type includes the mod-

ern form of on-line trading in the case this can be conduct by the single firm without intermediaries, but also Farm Gate Sales and Farmer Markets. The second is *Spatial Proximity* characterized by the importance of the point of retail held in the specific region where products are produced. These are the cases of cooperatives of consumers and "Solidarity Purchasing Groups" (GAS is the Italian acronym) that require a higher and more complex institutional organizations. Finally the *Spatially Extended* form where relationships are extended in space and time and information about food is "exported" outside of the region to consumers without personal experience of the place of production. Also in this case we can talk about short supply chain because the critical factor is the value of the information when products arrive to the consumers.

2.2 Farmer's markets

According to USDA (Martinez *et al.*, 2010, p. 5) a "farmers' market is a common area where several farmers gather on a recurring basis to sell a variety of fresh fruits, vegetables, and other farm products".

This definition can be considered a common basis, valid for many countries, but no single formula for a FM exists. Markets will differ depending on the context in which they occur and the consumer segment to which they are addressed. However, recently many international cases have been and some common elements have been underlined:

- Goods are transported only short distances.
- Ways exist for consumers to verify the quality and origin of food products.
- Activities involving food traditions are included in the markets.
- For the most part, markets are weekly events.
- The clientele is highly loyal.
- Groups organize cooking lessons and nutritional awareness sessions in the markets or through them.

In Italy a mix of historical, political, institutional and cultural factors (including a strong culinary heritage) supported the resilience of traditional forms of retail, such as the urban outlets for vegetables and fruits and, according to regional specializations, the direct marketing of foods directly processed by local farms (such as wine or olive oil in Tuscany). As a consequence, the ongoing movement toward re-localization of food supply chains, beginning in the early 1970s as part of a return-to-the-land movement (Rossi *et al.*, 2008), found in Italy a relevant share of consumers with good attitudes towards these forms of distribution.

In recent years the modernization of the retail food system has been associated with an increasing awareness of the problems generated by the

distance between food production and consumption. A reform of trade regulation in 1998 (the so-called "Bersani Decree") supported further modernization of the retail sector. This measure allowed the entry of foreign retailers into the Italian market through mergers and acquisitions of existing local chains. This liberalization, however, also allowed the entry of marketing methods in distribution considered "extreme" for Italian shopping culture, such as discounts to attract customers as well as expanding the consumption of food products purchased from progressively more distant suppliers. After initial enthusiasm, there has been some rethinking about the modern distribution network, the organizational structures and approaches that have emerged. Ephemeral, local, and seasonal products have been gaining more and more space, even in the stores of those foreign producers who had managed to penetrate the Italian market.

This gradual change is also due to new styles and habits of sustainable consumption, which are increasingly apparent among all the contradictions that characterize the post-modern consumer behaviour. An analysis conducted by Federalimentare-Ismea on 2003 Ismea-ACNielsen data identified two macro-trends, typical of an urban area characterized by high availability of income and a hectic life trend. Consumers orient their food choices to save time while also simultaneously following food traditions. These two requirements seem to conflict, but industry and food retailers play upon their interaction to differentiate their products in the pursuit of their marketing strategies. These dimensions can potentially facilitate the consumption of local products too, providing that the consumer is properly informed.

The negative impact on final product price for consumers generated by the distance between the sites of food production and consumption has often been discussed. The Italian Competition Authority (Antitrust) carried out an investigation in 2007 on the distribution of food products, concentrating on the structure and functioning of the produce sector. It concluded that the structure of production and distribution of Italian fruits and vegetables needed to be changed to prevent too many players along the supply chain, whose existence would increase the price to final consumers to an abnormal extent. Shortening the chain of distribution was recognized as one crucial element that can increase the efficiency of the sector and the welfare of final consumers by decreasing prices.

In 2007 the Ministry of Agriculture, through a decree has regulated FMs, giving a strong incentive to the development of this phenomenon in Italy. The basic points of the decree are the following:

- municipalities can establish or authorize the agricultural markets that meet the standards specified in the decree;
- direct sales of agricultural products may be established in public areas, in premises open to the public as well as on private property;
- only farmers operating within the region or in areas defined by local

institutions can participate in these forms of distribution-selling products from their own firm or from a company of partner farmers, or from their food processing activities-in compliance with sanitary regulations;

- within these markets cultural, educational, and demonstration projects related to food and traditional crafts can be undertaken, provided they refer to the same rural area, though farmers can sell their production in tandem with farmers from other areas when there are synergies and authorizations to do so.

Coldiretti estimated that about 500 FMs were started in Italy within the "Friendly Countryside" program, a programme under the *aegis* of the principal farmers' association with the aim to guarantee fresh products with clear origin and traceability, lower prices than conventional retailing and obviously at "0 miles".

Initiatives like "Friendly Countryside" promoted by professional organisations of producers, organic associations and local groups of farmers are continuously growing all over Italy.

2.3 Advantages and disadvantages of Short Food Supply Chains

There is a huge debate about the advantages and disadvantages linked to initiatives of Short Food Supply Chains. The advantages can be mainly classified in three typologies: economic, environmental and social.

The first category relates to cheaper prices. Often the advertising about FMs essentially in terms of word-of-mouth, plays around the chance for the consumers to obtain product with lower level of prices with respect the conventional retailing system and at the same time the opportunity to adequately remunerate the work of farmers.

This belief is often true but it is necessary to underline that when comparing products, the consumers should pay attention to the quality level: the saving is clear when the comparison is made between high quality products.

Media have often stressed the role of the SFSCs as an answer to the economic crisis but this vision is nave and doesn't take into account many aspects of the reality. In fact, in order to sell at a lower price than conventional retailers and to be competitive, farmers are not always able to get a higher remuneration for their products. Moreover, due to the small dimension of their firms, they risk to reduce their economies of scale. Nevertheless there is the chance to avoid the big costs of certifications and build reputation effect on the trust endorsed by the consumers.

According to some authors (Martinez *et al.*, 2010) there are some disadvantages linked to the local food market entry and expansions. The main

barriers are capacity constraints for small farms and lack of distribution systems for moving towards mainstream markets; limited research, education, and training/professionalism for marketing local food; uncertainties related to regulations related, for instance, to food safety requirements.

A second category of advantages is linked to environmental benefits. These could be clear and evident because the hypothesis is that reducing "food miles" can reduce costs of transports, storage and distribution typical of conventional retailers. Nevertheless this issue is still debated because it is necessary to calculate the distance kept by all the consumers to get the Farmer Markets; thus indicators only based on distance cannot be a trustable measure of total environmental impact (DEFRA, 2005). For sure, the higher is the education of consumers, the higher will be the benefits for the environment. In fact, one of the environmental advantage of SFSCs is to sell only seasonal products, with less costs of storage and energy employed to preserve foods. A conscious demand of consumers is thus important to put on the shelves only these kind of products.

The third typology of advantages is social. The shorter distance between producers and consumers give them the opportunity to deeply know their traditions and cultures, habits and recipes linked to a territory. In some cases this became a reciprocal help like for instance in Community Supported Agricolture (CSA) or even easier in Solidarity Purchasing Groups (GAS).

As clearly stated by Marsden *et al.* (2000) "a key characteristic of short supply chains is their capacity to re-socialize or re-spatialize food, thereby allowing the consumer to make value-judgements about the relative desirability of foods on the basis of their own knowledge, experience, or perceived imagery".

This experience can lead to the beginning of a locally based and socially controlled process towards new streams of rural development. In order to get the most from this process it is necessary to adequately investigate consumer preferences. Currently, international literature shows that the most important factor leading people to buy fresh products in SFSCs is the quality. In fact, as referred in the introduction, consumers usually cite "better food quality", "locally produced foods", "higher social interaction" and "learning directly about the vendors and their food production practices", as the principal motivations in buying in FM environment. Moreover, consumers who are willing to pay higher prices for locally produced foods place importance on product quality, nutritional value, methods of raising a product and those methods' effects on the environment, and support for local farmers (Martinez *et al.*, 2010).

3   Materials and methods

The final goal of the research is modelling consumers' participation to farmers markets expressing their purchase intentions as depending from a set of latent attitude/motivation variables defined according to literature. The survey aimed at collecting evidence about motivations, attitudes, sociodemographic characteristics and purchasing behaviour of consumers participating to farmers' markets in Tuscany. To achieve these results a questionnaire to be submitted on site to consumers was designed and tested during the early 2009 spring. The final version of the questionnaire was submitted to a sample of 94 consumers between March and June, 2009.

Sampling followed an approach aiming at representing at best consumers participating to FMs. As a consequence during the survey sessions a random selection of actual purchaser was interviewed. The following expedient were adopted to reduce as much as possible systematic biases due to respondent selection:

- survey sessions were carried out both during periodical FMs and at a daily "farmer store" promoted by Regional Government;

- interviews were carried out in different days within the weeks and different times within the day;

- a balance in terms of age were pursued during sessions to avoid an over-representation of elderly people that would have been caused by their grater propensity (being generally less time constrained) to accept the interview.

Respondents are 47 years old on average, with the largest part of the sample included in the age class between 35 and 59 years. The comparison with the distribution by age of Tuscan population shows a weight of this class well above the average. The largest part of respondents is represented by females (65%). Another remarkable characteristic of the sample is the education level higher than the average, with 54.5% of respondent with a secondary school degree and 39.4% of graduated (while in Tuscany graduated are about 10% of total population). Three fourth of respondents are employed, with a distribution among different professional status roughly coincident with the regional average.

The questionnaire is divided into three parts. A first section is devoted to the description of general attitudes, quality detection and purchasing strategies for food. A list of structured questions with forced answers on the choice of stores, marketing channels, product typologies and price level is submitted to respondent together with few questions on frequency and purchasing strategies adopted in participating to FMs.

A second section is dedicated to attitudes and motivations in the participation to FMs. The respondent is asked to declare his degree of agree-

ment/disagreement with a list of 16 propositions using a Likert scale with five levels and extremes marked with "completely agree" and "completely disagree". The items can be sub-divided into 5 thematic groups referring to: *a*) quality characteristics of products marketed through FMs (4 items); *b*) fair buyer-seller relationships within FMs (3 items); *c*) price level and value added distribution between buyer and seller in FMs (3 items); *d*) environmental sustainability of FMs (3 items); *e*) rural development promotion through FMs (3 items). The list of items is presented in Table 1.

The multi-item test is the core of the questionnaire. To avoid a possible bias in answers due to the succession of propositions two versions of the questionnaire, with items ordered in different ways, were alternatively submitted to respondents. While in general the propositions were formulated to obtain agreement from respondents with a positive attitudes towards FMs, two items were formulated in an "inverse" way (i.e. to obtain disagreement from a respondent with a positive attitude towards FMs), in order to ensure a satisfying level of attention of the respondent in answering to the full test.

The final section of the questionnaire is dedicated to collect a list of essential socio-demographic information such as age, professional status, sector of employment and so on. Respondents are also asked to define the economic condition of their family according to a four levels qualitative scale (troubled, modest, quite well-off, well-of).

4   Results

4.1   Reliability analysis

In Table 2 are displayed some summary measures of answers given by the sample to the multi-item test of attitude towards FMs. Items are again divided by theme.

Overall, respondents show a positive attitude towards the different "dimensions" of FMs as expressed by the themes of the test: the average score is lower than 3 (central score of a 5 level Likert scale with 1 corresponding to "totally agree" and 5 to "totally disagree"). The scores assigned to "inverse" items were properly "reversed" before averaging. The theme with lower scores is the "environmental sustainability" of this form of marketing channel.

Disagreement is larger for items included in themes 2 and 3. In two cases (D17 and D18) the answers corresponding to disagreement (scores 4 and 5) are more than 10%. All the three items included in the "fairness" theme show a number of disagreeing respondents higher than the average. Item D18 ("At FMs you can buy food saving money") shows the largest share of disagree (22,3%) together with the lower dispersion of answers around the average: a results suggesting that saving purposes may be not necessarily associated with the participation to FMs.

Table 1: Test of attitude towards farmers' markets (items divided by theme)

Variable name	Description
1) Quality of products	
D12	Foods marketed at FMs are fresher
D13	Foods marketed at FMs have a good taste
D14	Foods marketed at FMs are safer
D15	I go to FMs because marketed foods have a definite origin
2) Fairness in buyer-seller relationships	
D16	I go to FMs because I can ask explanations directly to producers
D17	I go to FMs because I like to know who made the food I eat
D21	The presence of producers is a guarantee of food quality
3) Price level and value added distribution	
D18	At FMs you can buy food saving money
D19	FMs allow farmers to receive a fair remuneration
D20	Prices are displayed in a clear way
4) Environmental sustainability	
D22	A shortcoming of FMs is that you can find only seasonal products
D23	A shortcoming of FMs is that products arrive only by surrounding areas
D24	Purchasing local and seasonal products can reduce environmental pollution
5) Rural development	
D25	Local economy can be promoted by the growth of FMs
D26	Public funds should be used to promote marketing channels like FMs
D27	FMs allow consumers to know the culture of the territory

The reliability of the proposed scale was assessed using the Cronbach's Alpha coefficient (Cronbach, 1951), an indicator of internal consistency based on the comparison between the sum of the items' variances and the

Table 2: Summary of answers to the multi-item scale

Variable name	Average score	St. Dev.	St.Dev./Average	> 3
Quality of products				
D12	1.777	0.658	37.10%	1.10%
D13	1.713	0.561	32.70%	0.00%
D14	2.362	0.801	33.90%	4.30%
D15	1.734	0.792	45.70%	4.30%
Fairness in buyer-seller relationships				
D16	2.309	0.843	36.50%	9.60%
D17	2.277	0.897	39.40%	10.60%
D21	2.404	0.896	37.30%	9.60%
Price level and value-added distribution				
D18	2.734	0.906	33.10%	22.30%
D19	2.032	0.822	40.50%	5.30%
D20	1.904	0.868	45.60%	5.30%
Environmental sustainability				
D22	1.500	0.744	49.60%	3.20%
D23	1.394	0.591	42.40%	1.10%
D24	1.819	0.733	40.30%	1.10%
Rural development				
D25	1.798	0.615	34.20%	1.10%
D26	1.819	0.879	48.30%	5.30%
D27	1.713	0.650	37.90%	1.10%

variance of the sum of items. The coefficient is calculated as follows:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k}\sigma_i^2}{\sigma_{sum}^2}\right), \tag{1}$$

where σ_i^2 is the variance of the item i, σ_{sum}^2 is the variance of the total scale and k is the total number of items. The coefficient is based on the standard approach to reliability analysis assuming that each answer to a single item is the sum of a "true" measure of the latent variable plus a random error term. When all items composing the scale are really associated with the latent variable to be measured by the test (in this case the attitude towards FMs), the variance of the total score tends to represent the variance of the latent variable better than the variance of single items: in fact, in

Table 3: Contribution to reliability of single items/themes

Variable/Theme	Item-Total Correlation	Alpha if deleted
Cronbach's Alpha: 0.790		
D12	0.388	0.779
D13	0.481	0.775
D14	0.269	0.788
D15	0.405	0.778
D16	0.362	0.781
D17	0.415	0.777
D18	0.118	0.802
D19	0.414	0.777
D20	0.040	0.807
D21	0.401	0.778
D22	0.520	0.769
D23	0.555	0.770
D24	0.506	0.771
D25	0.503	0.773
D26	0.545	0.766
D27	0.538	0.770
Cronbach's Alpha: 0.692		
Quality	*0.537*	*0.602*
Fairness	*0.362*	*0.677*
Price-value added	*0.249*	*0.722*
Environment	*0.543*	*0.599*
Rural development	*0.564*	*0.590*

summing the scores of single items the random error components tend to annul each others. This is the reason why the inclusion in the scale of a new item correlated with the latent variable should increase the value of Alpha. Conversely, in absence of any correlation between items and the latent variable, Alpha would tend to 0 (each item expressing only a random error) (Carmines and Zeller, 1979).

A first assessment of reliability was carried out on the full test. The Alpha Coefficient is equal to 0.790 a value well above 0.6, usually indicated as a minimum threshold for acceptability (Malhotra and Birks, 2006). In Table 3 the contribution of each item to the reliability can be analysed. The first column shows the correlation coefficients between each item and the total scale; the second the value the Alpha would assume if the item in the

corresponding row was excluded from the analysis. The last 5 rows give the results of a reliability analysis carried out using each theme as a single item with score equal to the sum of items included in the theme itself.

The items D18 and D20 are the less "consistent" with the scale, showing the lowest correlation with the total scale. Their removal from the test would increase the Alpha above the value of 0.8, despite the decrease in the total number of items. A separate analysis of reliability of partial scales represented by each theme (results not displayed in the table) showed that the "price-value added" one has the lowest internal consistency, with a value of Alpha lower than 0.3, where the Alpha for other themes was at least equal to 0.52 despite the small number of item.

Using themes as single "composed" items yields, as expected, to a lower even if still acceptable value of Alpha (0.692). Again the "price-value added" theme reveals as the less correlated with the total score and the only that should be worth removing to obtain a higher Alpha.

According to these results the subsequent cluster analysis was carried out excluding by the scale the variable D20. This choice is motivated not only by its negligible correlation with the total scale (0.04) but also by qualitative field notes gathered during the survey sessions, recording that the item was often perceived as "non coherent" with other by respondents.

4.2   Cluster analysis

The multi-item test of attitude towards FMs was used to carry out an explorative cluster analysis of respondents. The analysis aimed to assess the ability of the test in discriminating different consumers' profiles in terms of motivations, and possibly to correlate these profiles to different socio-economic characteristics.

The clustering exercise was based on a modified Euclidean distance matrix. The distance between two generic observations i and j was calculated as follows:

$$\delta_{ij} = \sqrt{\sum_{p=1}^{k} \left(x_{ip} - x_{jp}\right)^2 \times \frac{k}{N\left(x_{ip} \neq x_{jp}\right)}}, \qquad (2)$$

where k is the number of items and the operator $N\left(\cdot\right)$ gives the times the condition between brackets is true. The Euclidean distance was adopted for the larger importance it assigns to larger differences in weighting the answers to various items. The correction term is the inverse of percent disagreement between the two respondents, a distance metric frequently used with categorical variables. This correction was introduced in the analysis to take into account the similarity/dissimilarity between the profiles of answers given by respondents. Under the same value of Euclidean distance, two observations with large differences concentrated in a small number of
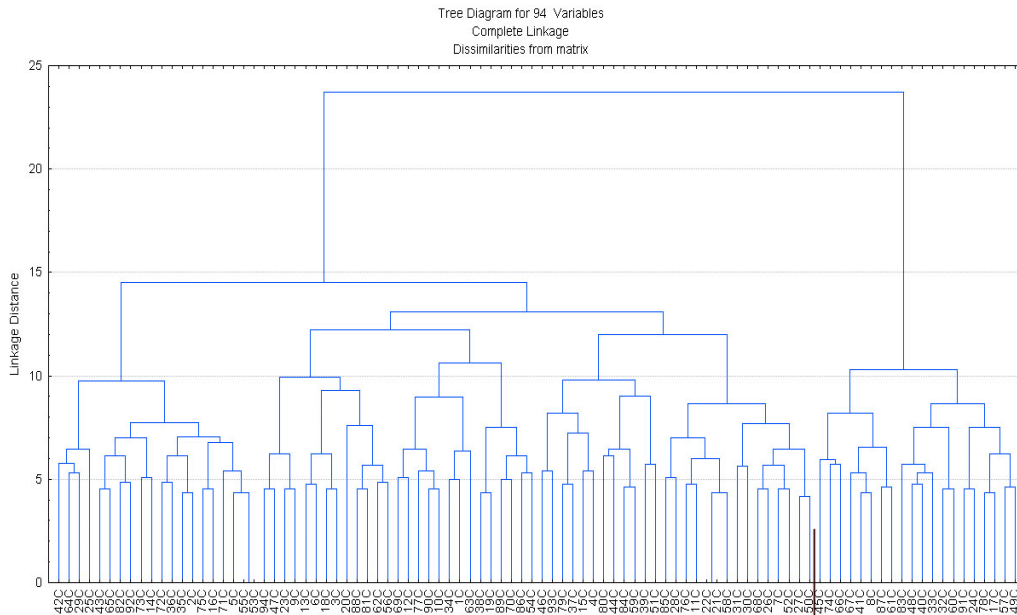
Figure 1: Cluster analysis

items will be more distant than two observations showing small differences spread over a similar "profile" of answers.

Given the relatively small number of observation the hierarchic approach to clustering was preferred. The ability of a set of clustering algorithms (single, complete and average linkage, centroid) to set off clusters with well defined characteristics was assessed using dendrograms of distance between groups at different hierarchic levels. The results obtained with the complete linkage method were retained as satisfying. Complete linkage method of aggregation tends to form groups with a higher degree of internal homogeneity (Bartholomew *et al.*, 2008). As shown by the dendrogram in Figure 1, with this algorithm a satisfying discrimination (in terms of dissimilarity between groups) is obtained with two groups respectively of 20 and 74 consumers.

A first description of differences between the two groups can be given in terms of attitudes towards FMs. In Figure 2 the average scores assigned to items by respondents included in the two groups are compared. No evident differences emerge in scores assigned to items of the first theme. On the contrary, despite a similar profile in answers a different (and opposite) level of agreement can be detected for the other four themes. While Group 1 expresses a higher disagreement with the fairness theme, an opposite situation (higher agreement) holds for the remaining themes (price and value, environment and rural development). The larger difference between the average scores of the two groups is showed by item D18 (saving).

The description of the two groups can be integrated using the descrip-
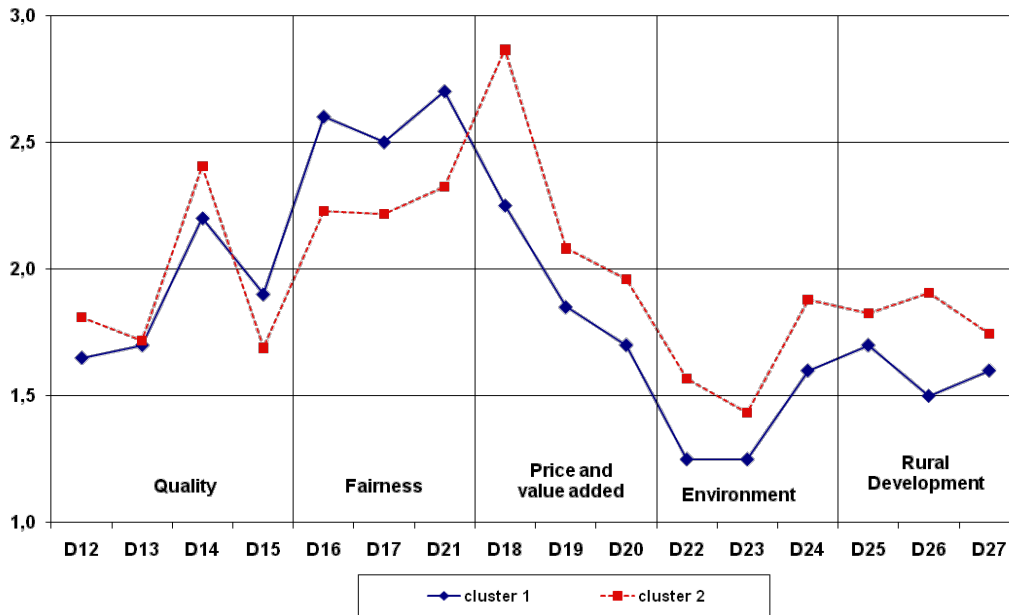
Figure 2: Average attitude scores

tive socio-economic variables included in the questionnaire. First of all one interesting differences emerge about education: in the first group the 55% of respondents declare to be at least graduated while in the second this share is only 35%. Furthermore a different economic condition seems to characterize the two groups, with more than 65% of the first group's respondents declaring at least "quite well-off" against 48% of the second (where more than 50% of respondents define as "modest" their economic condition).

Using the full set of information included in the questionnaire, integrated with "field" qualitative notes, the two groups can be described by the following profiles.

- *Group 1.* The group is in prevalence formed by consumers with age included between 34 and 56 years, high education level and good economic condition. In their food purchases these consumers privileges stores offering comfort in term of parking, time-saving and socialization opportunities (like in shopping centres). They trust in certification systems for quality characteristics like origin, organic production and so on, purchasing foods with these characteristics on a regular basis. Conversely prices are not a central criterion in food choice. Their participation to FMs is mainly motivated by a positive attitude towards environmental and rural development goals and by a willing to participate to a peculiar "social" event. They purchase only a specified range of products at FMs, with a lower average expense in each visit.

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- *Group 2.* The largest part of consumers included in this group show a lower education level and a modest economic condition. They assign a greater importance to prices in the choice of marketing channels for food purchases. They show a low level of trust in formal system of certification for credence characteristics like geographic origin or organic production methods but a greater confidence with "local" productions. As a consequence the most important motivation in participating to FMs is the direct relationship with producers, considered as the main guarantee for quality offered by this marketing form. The price is a relevant criterion in food choice both in general and in participating to FMs. These consumers look at FMs as a good compromise between the quest for quality foods and the need to save. As a consequence they tend to purchase a complete set of products at FMs, with a higher average expense in each visit.

5   Conclusions

Overall, the survey confirmed the methodology as suitable in supplying evidence about attitude, motivations and purchasing behaviour of consumers participating to FMs. The reliability analysis showed that the multi-item test of attitude included in the questionnaire has a satisfying level of internal consistency. Furthermore, despite the homogeneity of respondents due to sampling approach (on site interviews only to actual purchaser at FMs) the cluster analysis based on answers to the test was able to discriminate two groups with different socio-economic condition approaching to FMs with quite well differentiated attitudes.

Despite these results a set of possible extension of the analysis can be indicated. First of all a confirmatory factor analysis may be carried on the attitude scale (Bartholomew *et al.*, 2008). Structural equation modelling is likely to represent an effective approach in testing the existence and the nature of relationships among different themes in shaping consumers' attitude towards FMs. Such an analysis is likely to require a larger number of observations to properly identify the model.

A second possible way to confirm the attitude scale proposed in this exploratory analysis could be the submission of the questionnaire off-site, to consumers not necessarily actually involved in FMs. Such an extension of the survey would allow researcher to confirm the reliability of the test and to refine clustering of consumers on a wider informative basis.

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