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BEYOND FOOD COMMUNITY NETWORKS

ORGANIZATIONAL ELEMENTS, PARTICIPATION AND ALTERNATIVE MODELS OF CONSUMPTION

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Beyond Food Community Networks

organizational elements, participation and alternative models of consumption

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I dedicate this thesis
to my family

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Abstract

Alternative Food Chains (AFCs) are a new model of food production and distribution developed worldwide. The aim of AFCs is to become a suitable alternative to mainstream models and, at the same time, it aims at representing an opportunity to recreate a place where community participants can share and develop values and attitudes. It also provides a place for experimenting new organizational models with a high involvement of the different stakeholders. A specific organizational model heavily relying on high involvement of different stakeholders has been recently defined as Food Community Networks (FCNs). FCNs include Community Supported Agriculture (CSA), Solidarity Purchase Group (SPG), Farmers' Market (FM) and Associations pour le Maintien d'une Agriculture Paysanne (AMAP). All those organizations are similar but present differences in the way they are organized. The distinctive trait of FCNs is the creation of a community dimension where consumers and producers share scarce and valuable resources such as information, time and capital. The general objective of this study is to implement a complete research of FCN. The research has the scope to generate knowledge both in terms of organizational structure and from consumers' point of view. If organizational elements of FCNs could be better understood, then they can be used to better design interventions to sustain local farms and communities, niche products and eventually support innovative entrepreneurial attitudes. The results illustrate the organizational structure of FCNs in terms of New Institutional Economics and Organizational Science. Moreover, we deeply investigated the participation of consumers and it has been possible to draw the identikit of a FCN participant in terms of his/her personal values, attitudes and the importance of transaction cost.

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1. Introduction

Alternative Food Chains (AFCs) are a new model of food production and distribution that aims at preserving local producers and at the same time engaging with local communities (Lyson, 2000). Moreover, AFCs promote new form of entrepreneurship in which consumers and producers strongly interact while sharing decisions and resources. AFCs move away from mainstream models of food production and distribution that are exclusively oriented to high-productivity, economies of scale and economic performance. On contrary they emphasize the need for safeguarding and protecting social and environmental elements related to agricultural activities (De Lind, 2002). The aim of AFCs is to become a suitable alternative to mainstream models and, at the same time, it aims at representing an opportunity to recreate a place where community participants can share and develop values and attitudes (De Lind, 2002). Moreover, AFCs are particularly keen in valorising, defending and promoting local farms in order to sustain their economic performances and make these businesses more resilient. In fact, local farms are often strongly integrated into the surrounding area and assume a positive role in strengthening and sustaining the social and economic conditions of the entire community (Goldschmidt, 1978; Tolbert et al., 1998; Ikerd, 2001; Shuman, 1998). In this way AFCs contribute to the resilience of local communities and stimulate engagement between consumers and local entrepreneurs. It also provides a place for experimenting new organizational models with a high involvement of the different stakeholders. A specific organizational model heavily relying on high involvement of different stakeholders has been recently defined as Food Community Networks (FCNs) (Pascucci, 2010). FCNs include Community Supported Agriculture (CSA), Solidarity Purchase Group (SPG), Farmers' Market (FM) and Associations pour le Maintien d'une Agriculture Paysanne (AMAP) (Dentoni et al., 2012). All those organizations are similar but present differences in the way they are organized. To

illustrate, while CSA, SPG and AMAP rely on a certain degree of consumers' involvement in the different stages of the production and distribution process, in the case of FM this is more limited.

The distinctive trait of FCNs is the creation of a community dimension where consumers and producers share scarce and valuable resources such as information, time and capital. In particular, food producers provide land, physical capital, knowledge, while consumers provide time, their knowledge and financial resources by participating directly in the organization (Pascucci, 2010). In return consumers receive leisure, high quality produces, while decreasing transaction costs (i.e. information, negotiation, and monitoring costs). In fact, consumers' participation and involvement makes them informed and aware of different productive stages. This is also increasing trust for product quality attributes and producers' behaviour (Jones *et al.*, 2004). Moreover, in CSA and SPG consumers develop also entrepreneurial attitudes because 1) they seek opportunities for value creation both for society and for their households; and 2) they innovate by combining new resources together with farmers (Dentoni *et al.*, 2013).

Besides using community elements for producing and distributing food, FCNs are alternative to mainstream models also in terms of support to local products (Baker, 2004). The loss of local products is one of the major threats caused by mainstream models: on one hand local varieties and niche products do not fulfil quantity requirements from mainstream distribution organizations (i.e. large retailers); on the other hand local varieties and niche products offer too heterogeneous quality attributes to comply with private standard requirements. On contrary, FCNs promote niche products and heterogeneous quality attributes as a sign of authenticity and sustainability of local food productions. Nonetheless, FCNs sustain a new approach to food consumption that is often defined as post-modernism. From a post-modern perspective consumption is not only defined as transacting and exchanging products but as an important part of identity and everyday life. This is in line with what consumers and producers experience in

FCNs where, for example, they frame food quality not only in terms of attributes such as taste and safety, but also in terms of more subjective attributes such as authenticity, fairness, social awareness. This is not only affecting consumption patterns of FCN participants, but also their attitudes towards food production, thus promoting new entrepreneurial attitudes related to participants identities and values.

The use of values and social norms to analyse purchasing decisions has increased in consumer psychology literature in recent decades. Variables typically used for market segmentation (demographics) and theoretical approaches used in consumer studies (neoclassical model) seem no longer suitable. Demand system and other consumer studies based on neoclassical model are not able to capture the recent changes in consumer behaviour. The instability of consumption preferences essentially shows a lack of orientation that is reflected in the consumers' free choice in every area of daily life. It has already been mentioned that these elements make it difficult to explain consumption habits according to a neoclassical approach, therefore suggesting the need to redefine an analytical structure capable of interpreting the dynamism of preferences and also considering that people's welfare is related to both expense possibilities as well as quality of life, in which environmental, social and freedom aspects are involved (Nussbaum and Sen, 1993; Cembalo *et al.*, 2013). To this extent scholars and scientists are trying to overcome this issue by invoking more stable characteristic elements of consumers such as values and attitudes.

Inglehart (1971) and Rokeach (1973) first theorized the central role of values in cognitive networks of attitude and beliefs. Rokeach also built a Value Survey (RVS) that was implemented in several researches aiming at different objectives (Vinson and Munson, 1976; Becker and Conner, 1981). While other authors defined values in slightly different fashion (Hetcher, 1993), empirical methods to collect values showed a substantial arbitrary in the value asset collection. It was at the beginning of the nineties that Shalom H. Schwartz (1992) made a

breakthrough. He defined ten values, namely: Benevolence, Universalism, Self-direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity, and Tradition. While values explain most of the individual abstract motivations, the relationship between actual behaviour and values can be very indirect. Value attainment finally achieved depends on the good itself but also on mediator variables (Steenkamp and van Trijp, 1989). Between values and behaviour there seems to be an intermediate level which refers, as a synthesis of mediator variables, to attitudes or lifestyles related to food consumption and experience (Maio *et al.*, 2003; Vinson *et al.*, 1977; Brunsø and Grunert, 1995).

The post-modernist approach to FCNs can help explaining why the recent economic crisis seems to have assumed a role in the recent growth of FCNs worldwide. For example the economic crisis has contributed to determine changes in the consumption patterns of many consumers, both in terms of type of purchased products and the purchasing outlets (Cerosimo, 2011). The economic crisis affecting USA and Europe in the past decade has been accompanied by the progressive growth of alternative food networks like FCN (Goodman 2004; Sonnino and Mardsen 2006; Goodman and Goodman 2007; Drake 2012). Thus, to study FCNs becomes more and more relevant not only to analyse the complexity of their organization but also to understand whether FCNs can be used to mitigate the detrimental effects of the economic crisis, for example as an opportunity for promoting innovative entrepreneurial attitudes.

The general objective of this study is to implement a complete research of FCN. The research has the scope to generate knowledge both in terms of organizational structure and from consumers' point of view. If organizational elements of FCNs could be better understood, then they can be used to better design interventions to sustain local farms and communities, niche products and eventually support innovative entrepreneurial attitudes.

Previous studies have characterized FCN organizational elements from different theoretical perspectives. For example, from a transaction cost economics

approach we can look at FCN organization using different dimensions of the governance mechanisms and namely the degree of resource pooling, type of contracting mechanisms between consumers and producers (Pascucci, 2010). Usually contracting mechanisms can be divided in type of coordination, and type of internal or external competition (Williamson 1991; Ménard 2004; Ménard and Valceschini 2005; Karantininis 2007). The governance mechanisms used in the FCNs are based on intense resource pooling, while coordination is based on limited authority and relational contracts (Pascucci 2010). However, because a unified definition of FCNs is not yet available, looking at different and heterogeneous organizational elements could be a useful way to analyse them more deeply. More specifically it is relevant to analyse more thoroughly the governance mechanisms such as the degree of resources sharing, and type of contracting between consumers and producers.

To better understand how FCNs work it might be relevant to look at elements related to economic incentives (market-like), formal rules and bureaucratic elements, social interactions and community-building dynamics (communitarian), and the decision-right mechanism (democratic), which can affect participation (Pascucci *et al.*, 2012). For example previous studies have showed that the consumer participation descend from ethical and moral motivations (Lusk and Briggeman, 2009), but understanding the motivations of the consumers to FCN is complex and not clear. From new institutional economics point of view consumers' participation may derive from a strategy of minimization of transaction costs (Pascucci, 2010). If organizational elements and participation drivers can be better linked then strategy to better support FCN can more effectively be designed. Specifically the study intends to address the following objectives:

- Examine how is the general organization of FCN in terms of the main general organizational aspects. This is the first step to move in exploring the phenomenon (Chapter 2)

- Investigate which are the organizational elements of FCN from two different theory approaches. The first one is the transaction cost Theory (Chapter 2) and the second one following the theory of organizational science (Chapter 3).
- Examine deeply the role of consumers in FCN. In particular we want to analyse how much they are involved in the decision-making mechanism process (Chapter 3)
- Conduct an empirical case study within a real FCN example, Solidarity Purchase Group, to relate individual values (Schwartz values) to analyse motivation of participation to a FCN as a peculiar strategy of interaction to the food market; we also tested for how and to what extent consumers transaction costs affect the choice of joining a FCN (Chapter 4).
- Using the same database to investigate the FCN consumer in terms of his/her personal values and attitudes asset with the scope of understanding, which are the differences in terms of these variables between participants and non-participants (Chapter 5).

The remainder of the thesis is organized as follow. Chapter 2 addresses the first specific objective outlined above where it has been implemented a classification of the main categories of FCNs arise worldwide. In particular, it has been considered elements like the scale of action (local or global); the aims of the organizations (the safeguard of biodiversity; the promotion of sustainable productions, the protection of local producers and traditions; stakeholders involved (farmers, local community and consumers); key resources used (land, food, values and leisure time).

In the Chapter 3 we have characterized FCNs from a transaction cost economics approach and the theory of "organizational science". More specifically we have looked at the elements like pooling resources and governance mechanism first, and then we considered elements from organizational science (Grandori e Furnari,

2008) such as market-like elements, bureaucratic elements, communitarian elements and democratic elements to classify 95 cases study of CSA. In this way it was possible to have a first synthetic description of the differences, in terms of organizational factors and in terms of consumers involvement in CSA structure.

In the Chapter 4 we collected 303 interviews by means of an ad hoc questionnaire to explicitly model the hierarchical causal relationships among Values, FRLs, and behaviour (participation). Moreover we also tested for how and to what extent consumer's transaction costs affect the choice of joining a FCN. 103 questionnaires were submitted to participants, and 200 to consumers that had not joined any FCN organization spread in Italy, Solidarity Purchased Group (SPG) (counterfactual sample of consumers).

Chapter 5 uses the same date set as in Chapter 4. The scope was to determine the relationships between participation and other variables like values, attitudes linked with food purchasing and to understand the differences in terms of Values and Food Related Lifestyle between SPG-participants and non-participants.

2. Food Community Networks

Abstract: This paper discusses the concept of Food Community Network (FCN) in credence transactions. A FCN could be defined as a governance structure where consumers and producers strongly integrate their functions (goals) by organizing a "club". It is based on pooling specific resources and using membership to assign decision and property rights: consumers provide time, information, knowledge and financial resources by participating directly in the organization of production process. They receive leisure, credence foods and decrease the costs of monitoring; producers reduce their decision rights but also part of production and transaction costs, uncertainty of specific investments and income instability. Based on this concept, the study proposes an inductive "grounded theory" method to explore how FCNs evolve from traditional relationships between producers and consumers and, in turn, under which conditions FCNs can be a competitive governance structure to carry out credence food transactions. Comparing and contrasting examples of embryonic forms of FCNs from North America and Europe provide the instrumental cases for this investigation.

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2.1 Introduction

Quality in the international agribusiness arena is becoming an increasingly relevant issue. When talking about food quality scholars use to think about either safety concerns or "niches", such as traditional and local productions, organic and environmental-friendly foods, fair-trade products, functional foods. However it can be argued that nowadays almost all food productions are increasingly affected by quality issues as soon as they get closer to final consumers along the supply chain. For instance even typical agricultural commodities such as soya beans, corns or wheat are affected by quality issues as soon as they are processed by food companies and entered in a labelling system. Even more important to notice is that traders and final consumers concerns about quality are increasingly focused on credence characteristics. Therefore credence food transactions shouldn't be consider as a marginal component of global food transactions but more and more as a core component of the agribusiness.

As firstly stated by Darby and Karni (1973) a credence good refers to a product whose characteristics or quality attributes (or at least one of them) cannot be verified even after consumption (Vetter and Karantininis, 2002). For example when dealing with organic productions many attributes are difficult (technological constrained) or too costly (economical constrained) to be monitored because many actors are involved in different stages of the supply chain. Moreover credence food transactions are also related to the use of "immaterial" or "intangible" items such as ethical issues. Therefore credence food transactions are affected by severe problems of information asymmetry which reduce the gain from trade of all trading parties. Indeed, dealing with credence attributes implies to be increasingly subject to a number of challenging issues. Examples are the use of more complex monitoring and certification system, an increase of high specific investments, an increase of uncertainty for example due to moral hazard behaviours. This requires that stakeholders have to be more and more aware of the alignment between governance structures (GS) and quality devices used in the

food supply chain (Raynaud et al. 2005). In these circumstances spot markets are unlikely to be used as governance structure while hybrids, vertical integration and public monitoring are the most suitable solutions (Vetter and Karantininis, 2002; Ménard, 2004).

In recent years, a new type of governance structure is emerging in the context of credence food transactions. Pascucci (2010) defined this governance structure as food community network (FCN). Following this definition a FCN can be described as an institutional arrangement where consumers and producers strongly integrate their functions (goals) by organizing a "club" (Pascucci, 2010). It is also based on pooling specific resources and using membership to assign decision and property rights: consumers provide time, information, knowledge and financial resources by participating directly in the organization of production process (Pascucci, 2010). They receive leisure, credence foods and decrease the costs of monitoring; producers reduce their decision rights but also part of production and transaction costs, uncertainty of specific investments and income instability (Pascucci, 2010).

In this paper we further analyse FCN characteristics and (potential) competitive advantages in credence food transactions. In section 2 the research methodology is described. More specifically this study proposes an inductive "grounded theory" method to explore how FCNs evolve from traditional relationships between producers and consumers and, in turn, under which conditions FCNs create value. Based on this approach in section 3 comparing and contrasting examples of embryonic forms of FCNs from North America and Europe provide the instrumental cases for the empirical investigation. In section 4 the baseline theoretical framework for analysing the FCN is provided. In section 5 we present further empirical evidence to explore FCN competitive advantages while in the final section provides a brief discussion and concluding remarks.

2.2 Grounded theory approach

The idea of considering FCN as a new GS in the context of credence food transactions is based on the observation of an extensive set of empirical examples. A first attempt to analyse and classify FCNs has been recently done by Pascucci (2010). However a clear and crystallized definition of the phenomenon is far to be achieved. In order to further analyse FCNs, in this paper a "grounded theory" approach has been adopted. "Grounded theory", in fact, can be considered as a methodology that prefers an inductive approach focused toward theory development as opposed to deductive theory testing (Glaser and Strauss, 1967; Strauss and Corbin, 1994). Therefore "grounded theory" is more and more recognized as an effective method for studying complex issues where still limited quantitative information are available (Westgren and Zering, 1998). This method implies that information gathering and theoretical conceptualization of a given phenomenon evolve through a continuous interplay between analysis and data collection (Strauss and Corbin, 1994). The iterative process usually starts from the observation of the phenomenon and preliminary data collection. In this case the initial data collection is still based on basic and unstructured theoretical argumentations. However as the process continues, the data collection and analysis becomes more narrowed and selective, and, at the same time, more and more focused on specific issues. The mechanism is based on the capacity of the research (or research team) to critically and responsibly select items during the data collections that progressively constitutes the theoretical framework for analysing the phenomenon. In repeated rounds of investigation each item is evaluated against new empirical evidence in a confirmatory/contrasting perspective. Therefore during the process, the researcher(s) must think conceptually and constantly analyse the relationships between their data. The critical point underlined by grounded theorists is the difficulty to transform information into solid interpretation therefore forcing the researcher(s) towards an intense and delicate interpretative work (Strauss and Corbin, 1994). As soon as

the core elements of the "emerged" theory has been defined, large-scale based data collection can be performed in order to provide a more solid and wider theory-testing process.

In this paper we started by investigating different empirical case studies worldwide, mainly using internet-based sources and literature review. In this way we could select a first set of examples of FCNs in both North America and Europe. Afterwards we went back to the main theoretical argumentations used by Pascucci (2010) to further analyse the concept of FCN in the light of new empirical evidence. By comparing and contrasting empirical evidence with these theoretical argumentations we have selected a number of concepts and used them as key-words for further empirical investigations. Several rounds of data and information collection and conceptualization have been performed. In this way a more detailed analysis of the organizational features and comparative advantages of FCNs have been identified.

2.3 Embryonic food community networks in credence food transactions

We initially selected a number of key words to be used in a web-based investigation to gather embryonic examples of FCNs. Pascucci (2010) signalled two main typologies of FCNs and four organizational models (table1). The difference between the two main groups could be summarized by the type of technology and scale used for networking. A first group of local and non-ICT based communities can be distinguished from a more global and ICT based one. The difference is not trivial: while local communities originated in a specific socio-geographical context are more oriented in building social ties based on direct and personal interactions, global and ICT based communities use internet and technological devices to build and develop ties virtually. This doesn't mean that local-based communities are not using technological devices (i.e. websites, blogs and social networks) in their organizational model nor that global-based communities are not organizing initiatives or projects (i.e. summer schools, local-

based initiatives, etc.) implying personal interactions. However these issues are (still) not part of their core activities and identities respectively.

In the first group of FCNs, different organizational models are represented by Community Supported Agriculture (CSA), Farmers' Markets (FM) and Consumer Buying Group (CBG). Different examples of such FCNs have been reported all over the world but mainly in North America (mainly CSA and FM) and Western Europe (mainly FM and CBG) (Hendrickson and Heffernan, 2002; Friedman 2006; Fonte and Grando, 2006; Pascucci, 2010).

CSA are mainly a North American type of organization even if similar experiences could be found in Asia (e.g. the Japanese teike) (Adam, 2006). Up to now CSA are probably the most famous and studied farmer-consumer type of network1. Within the CSA definition it is possible to find a variety of specific local-based community networks which have in common the direct involvement and participation of consumers in food productions.

CBGs represent a different organizational model mainly emerging in Europe (Renting et al., 2003; Carbone et al. 2006; 2007; Aguglia et al., 2008). As for CSA, in this model the community is mainly constituted by consumers and organized to coordinate more the marketing phase rather than the food production phase. However also direct linkages between marketing and production decisions can be observed. The difference between CBGs and CSAs is mainly related to the decision making mechanism which is in the first case mainly driven by famers and farming processes, while in the latter is related to consumption and consumer-related patterns.

Finally FM constitute another distinct group of FCNs where farmer-consumer interactions are still direct but "limited" only to the marketing phase while no production-decisions are shared (Pascucci, 2010).

The second group of FCNs is more organized around the idea of managing local-

[1]An interesting frontrunner paper on this issue was written by Paul Fieldhouse in 1996. More recently an overview of studies on CSAs was provided by Bougherara and colleagues (2009).

based credence productions on a global-scale. This is for example the case of the Fair Trade, Slow Food and FAIREA2 (Fonte, 2006; Pascucci, 2010). All these initiatives have started from local community based movements, and then developed much more on global/international scale, for example by implementing ICT-based labelling and certification. The main idea behind ICT-based communities is to build up "virtual" networks around issues such as fair-trade, eco-gastronomy, food culture, life styles. By informing and promoting local food traditions and people's dwindling interest they intend to increase consumers' awareness in food choices (i.e. location, environmental and social effects, taste, etc.) and try to connect producers and consumers worldwide. In many cases the consumer-producer interaction is still "mediated" by a third party but direct consumer-producer interactions are also stimulated at local level. Many of these initiatives act as a (communication/marketing) platform where consumers and producers can start to recognize each other and where they can start learning how to transact both locally and globally.

2.4 The baseline theoretical framework for analysing Food Community Networks

In this paper we argue that FCN is an emerging GS which in some cases is substituting while in other cases is complementing already existing and functioning GS. Indeed, along a credence food supply chain we typically have several legally independent organizations, like food companies, farms, public agencies and consumers (or households) which interact to coordinate food quantity with a specific focus on credence attributes (Raynaud et al. 2005). At any stage of the supply chain transactions can be carried out by using different type of GS, such as bilateral contracts, networks, alliances and/or vertical integration between the parties (Ménard and Valceschini, 2005; Pascucci, 2010). The

[2] http://www.gut-so.at/

question is to understand which features make FCN different and distinct from the already existing GS.

Table 1 - Examples of Food Community Networks

Technology	Scale of action	Aims	Stakeholders involved	Key-resources	Type of community
Non ICT based community	Local (and mainly urban)	Connecting consumers to food productions	Urban consumers and land managers	Land, food, values, leisure time	Community Supported Agriculture (CSA)
	Local	Promoting critical consumptions and sustainable productions	Consumers and local farmers	Food and values	Consumer Buying Groups (CBG)
	Local	Provide marketing alternatives to farmers	Local farmers and consumers		Farmers` Markets (FM)
ICT-based community	Global	Promoting a reduction of inequality in the international trade of food commodities	Farmers from LDCs and consumers in DCs	Food and values	FairTrade
	"Glocal"	Promoting sustainable development, defending traditions and local productions	Local and global communities		Slowfood
	Local		Local communities		FAIREA

Source: adapted from Pascucci (2010)

According to preliminary empirical evidence, FCN have been described as based on a group of interested consumers and a (group of) producer(s) that decide to vertically coordinate and partially integrate on the base of a long-term relationship to produce and transact credence foods (Pascucci, 2010). To characterize FCN we can look at different dimensions of the governance mechanism and namely the

degree of resource pooling, type of coordination mechanism and type of internal and external competition (Ménard, 2004; Karantininis, 2007; Pascucci, 2010). The governance mechanism used in the FCN is based on intense resource pooling, while contracting is based on limited authority and relational contracts. Moreover limited competition among the members is present while external competition with other GS is very high.

FCN can be seen as a form of vertical integration between consumers and producers leading to the constitution of a hybrid such as a formalized network. The integration process is based on using membership to assign decision and property rights and driven by the need of sharing and pooling resources which are specific for the members. When membership is strongly formalized then the network assumes the form of a club, which in some cases can lead to the legal form of a producer-consumer cooperative. Resource pooling and sharing is slightly different between consumer and producer members: (1) consumers provide time, information, knowledge and financial resources by participating directly in the organization of production process; (2) farmers provide land and capital assets but also specific skills and knowledge. They also transfer decision rights to consumers.

On one hand consumers receive as pay-offs leisure and credence foods while decreasing transaction costs (i.e. the costs of monitoring). The key element here is that consumers maximise their pay-offs not only by transacting credence foods but also by participating in the organization of the production process, simply because it provides them leisure. The time spent by consumers in the production process is assumed to be leisure time. The time allocated in the production process is either related to manual working and to its organization (managerial tasks). The time allocated by consumers is also used to monitor the process, and therefore, to reduce the risk of producers moral hazard. Since consumers can coordinate participation (i.e. by turning the visits) and their time spending in participation is not a cost but a utility-enhancing activity, we can assume that the

overall monitoring costs of the process can be considerably reduced by this mechanism.

On the other hand farmers reduce part of production and transaction costs (i.e. labour costs, certification costs, etc.), uncertainty of specific investments and income instability (Pascucci, 2010). Producers reduce their production or transaction costs by allowing consumers to direct participate to the organization of production process. They also limited uncertainty and can reduce lock-in problems of investing in specific assets related to the credence food production.

2.5 Further empirical investigations: FCN competitive advantages

Given FCN main features the question is to understand under which circumstances FCNs can be more competitive than other GS for transacting credence foods. According to NIE we might observe the use of a specific GS, which is the most cost economizing within the spectrum of all the different typologies of GS (Williamson 1991; Ménard, 2004; Ménard and Valceschini, 2005; Karantininis, 2007). Within this approach, the choice of a GS is mainly driven by transaction attributes such as specificity, frequency and uncertainty (Williamson, 1991). In this perspective the main disadvantage of FCN is that participation of consumers within the organization of the food production process also implies additional transaction costs mainly due to strategic management issues. For example the organizational costs increase because even if the use of authority and formal contracting is limited within the network, they still require a bureaucratic and legal structure. Moreover transfer of decision rights can affect uncertainty on specific investments and decrease long-term profitability of FCN. This is similar to the investment problems faced by cooperatives and collective organizations.

However if the reduction of monitoring costs and the increase of consumers' wellbeing (due to the leisure time allocation) compensate the increased organizational costs then a community network can be an alternative

"competitive" GS for credence food transactions. More specifically competitive advantages for FCNs can derive from specific issues such as a better risk sharing, decision-making, quality checking and resource pooling. We have further investigated all these issues using case studies from both North America and Western Europe (see Appendix).

Risk sharing refers to the capacity of reducing transaction costs due to uncertainty of the credence food production. For consumers, uncertainty is mainly related to the quality of productions and to a certain extend to quantity in terms of seasonal availability. Farmers face uncertainty mainly due to potential volatility of the demand, which is also related to credence quality issues. Usually third party certification and formal contracting are the two main tools used to avoid uncertainty in credence food productions (Raynaud et al., 2005). According to our empirical investigation the main tool to lower uncertainty in FCNs is the use of a formalized membership, especially for CSA and CBGs. Only FMs are less prone in formalizing membership for both farmers and consumers. According to our investigation one way to use a formalized membership is to collect a fixed fee at the beginning of the production season (or once a year). This fee corresponds to the entire expenditure consumers can potentially have in that given season. Afterwards, when the production will be ready, they won't pay any extra-price regardless the overall market conditions of the specific product(s). In this way members' fees are used as capital to finance the FCN activities. Residual profits or losses are completely transferred to the farmers belonging to the FCN. In some cases members' fees incorporate also part of the capital needed for specific activities (i.e. marketing activities) and "extra investments" (i.e. building a warehouse or storage facilities). Fixed and anticipated fees also imply establishing the duration of the membership (for example few weeks, a year, more than one year), the quantity and the type of products (composition) to be delivered to the members. In almost all cases consumers cannot choose just one product but a basket of seasonal products. Also quantity is fixed with only two or three

alternatives (i.e. 5, 10 or 15 kilos per delivery). Delivery time is fixed as well, and usually it is arranged once per week or twice per month. Interestingly it can be noticed that safeguard clauses, for example in case products are not delivered or quality is lowered due to adverse weather conditions, are not explicitly settled within the membership contract.

When analysing the decision making process we looked at the following items: consumer decision rights on production quality, quantity, composition, use of inputs (including land) and price. Our empirical evidence seem to highlight that decision making is substantially limited to some general issues and it occurs during special assembles and meetings. Consumers make a decision when choosing the type of membership to adopt (if more alternatives are present) and therefore limited decision making is possible afterwards, in terms of quantity, quality, composition of the basket of products and price. Almost none of the FCNs we have examined really allowed consumers to decide on land use, while decisions on production techniques are usually discussed and shared.

Quality check is the third issue we have investigated in the analysis of the case studies. Two alternative systems of quality detection have been analysed: on one hand the presence of formalized certification and on the other hand the presence of certification systems based on a more active participation of the members. As expected formal certification is limited (mainly in North America) while active participation of members is extensively used. More specifically members are allowed to participate to all the phases of production and almost in all the FCNs we have examined. Moreover consumers have access to the fields and farms conditional to a schedule which is established by members. Finally many FCNs use blogs and websites to discuss production quality issues and debate eventual quality breakdowns.

Finally we have considered more in detail how resources are pooled and shared within FCNs. We have looked at issues such as knowledge, time, capital and labour. When looking at knowledge sharing we distinguished between three

different mechanisms and namely producer-consumer, consumer-consumer and consumer-producer interactions. We have found that in almost all the FCNs knowledge sharing refers mainly to producer-consumer interactions. This means that FCNs stimulate transfer of knowledge from farmers toward final consumers. However the other two types of mechanisms are also relevant, especially if we look at CBGs.

Regarding time and labour we have analysed whether or not consumers are directly involved in specific activities of the FCNs, such as harvesting, marketing, advertising etc. In many cases we found that at least part of the members are active in such type of activities mainly on a voluntary base. While labour and time provided by members is very common in the FCNs, extremely limited is sharing resources such as members' physical capital such as vans, tracks, buildings, computers and so on. In all cases we have examined when resource sharing is presented it is always based on voluntarily principles.

2.6 Discussion and conclusions

In this paper we briefly discuss an emerging type of governance structure in credence food transactions. We define it as food community network. In this governance structure consumers and producers integrate their functions by using combination of cooperation and resource pooling. Example of emerging community networks can be observed especially in the domain of consumers-farmers interactions.

We have studied several case studies which have highlighted specific features of FCNs. We have found that FCNs use formalized membership to definite not only the type of "delivering" service consumers would receive but also to share risks and transfer relevant decision rights. However we found that consumers decision rights on the production phase is often limited especially if we look at the allocation of land to different uses.

An important outcome of our analysis is that FCNs extensively rely on trust as

substitute to formalize safeguards both in terms of general risks and specific quality inspections. The use of trust can be consider as the main component at the base of FCNs worldwide and one of the most important asset which can make FCN potentially more competitive than other GS in credence food transactions. However because such an extensive use of trust mainly occurs in the very beginning of the relationship between consumers and farmers it also works as an entry barrier for consumers that need to develop trust in a longer timespan.

We think this could be the main reason why FCNs are still so used by strongly motivated and ideologically oriented consumers who probably already share common values. In our empirical investigation we found that almost all CSA and CBGs are strongly politically oriented for example belonging or being linked to an ecologist movement. In this respect we also think that more flexible entry-mechanisms, perhaps based on more formalized contracting in the initial phases, can help in broadening FCNs towards less "ideology-driven" consumers and producers. In this way trust-building mechanisms can be used in following phases of the consumer-producer relationship, inducing a less formalised contracting in later phases. Moreover we believe that in this way FCNs can move from niche and local-based products to a more global scale. In this sense there are already evidence that the development of both new Information Communication Technologies (ICT) and social networking can be the base for the evolution of FCNs. For example virtual communities can be a new frontier in this domain. Moreover virtual community networks can serve global transactions, can be used also by food companies for innovative and introduce more participative certification systems. In a virtual community consumers can experience the participation in the production process without physically moving but using ICT opportunities and facilities (Pascucci, 2010).

We also believe that the development of (internet-based) social networking and the increasing interconnections of consumers at a global level represent a formidable opportunity for food companies interested in innovative credence food

transactions. Of course this will require further analyses and conceptualization of the phenomenon with a more systematic approach. Also the use of more quantitative methods based on larger and more representative samples is needed. This will represents the direction we will follow for our future research in this domain.

3. Governance mechanisms in Food Community Networks

Abstract: This paper discusses the concept of the food community network (FCN) and how consumers and farmers organize credence food transactions. The FCN is based on pooling specific resources and using membership-based contracts to assign decision and property rights. It implies an organization based on a combination of several democratic and communitarian elements, with few market-like and bureaucratic elements. By applying arguments from new institutional economics and organizational science, case studies on community-supported agriculture reported elsewhere were used to describe how FCN governance works. The results indicate a great variety of FCN organizational forms.

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3.1 Introduction

The agro-food industry, farmers and consumers are in the process of setting up new organizations to exchange food worldwide (Pascucci, 2010). This is especially evident when food has the features of a credence good. Hence the way it is produced matters more than other intrinsic attributes. In previous studies such organizations have been defined as alternative supply chains, civic food networks or food community networks (FCNs) (Renting et al. 2003; Auglia et al. 2008; Bougherara et al. 2009; Pascucci 2010). In these organizations, transactions of credence foods are carried out through direct interaction of consumers and farmers, who share resources and stakes. In a more recent contribution a more formalized approach was proposed to define this organization, mainly through a new institutional economics oriented approach, and using Grounded Theory as a methodological tool (Pascucci et al. 2011). However, a crystalline definition of FCNs is still some way off. In this paper we propose a further step in the direction of identifying the elements constituting FCNs.

Several approaches to describe and analyse organizational design can be used when dealing with network organizations. Hatchuel (2001), for example, proposed to combine organization and design theories to describe collective actions, specifically to understand the interplay between learning, innovating and imposing routines. Nooteboom (2004) also highlights the interplay between governance and competence to describe network organizations and forms of cooperation among economic actors. Though the literature on network organizations is far-reaching and extensive we mainly build our analysis on organizational design arguments, comparing the new institutional economics (NIE) approach (Williamson 1991; Ménard 2004) with a more recent approach in organizational science proposed by Grandori and Furnari (2008)[3]. While design theories and competence studies are very helpful in describing "creative" and

[3] Grandori and Furnari (2008) provide an extended discussion on this topic which we recommend to those interested.

innovative network formation, NIE has been extensively used to describe network organizations in the food sector (Menard, 2004). However, while the "standard" NIE approach to organizations emphasises alternative governance structures (e.g. markets, hybrids or hierarchies) looking at networks as alternative to both markets and hierarchies, the Grandori and Furnari approach (GFA) proposes a way to analyse alternative organizations by considering more basic elements which can be combined, and allow for complementarities (Grandori and Furnari, 2008). Therefore, unlike the NIE approach, the GFA is not limited to explaining differences within the same "cluster/category" of governance structures. This is particularly handy when it comes to analysing emerging governance structures, such as FCNs. More specifically, in this paper we use the GFA to investigate different FCN case studies, mainly using internet-based sources and literature reviews. Even though the FCN case studies analysed are based on North American CSAs, we believe that our research findings can be generalized to any FCN organization operating in various parts of the world.

3.2 Materials and methods

The FCN is an emerging type of organization which often challenges more traditional, "mainstream" types of organizations dealing with food production and distribution (e.g. supermarkets and "hard discounts") (Hendrickson and Heffernan 2002). More specifically, the FCN seems to be a competitive organization when it comes to exchanging foods with a higher degree of credence attributes. For such foods "the way" they are produced and distributed is more important than "what" constitutes them (i.e. chemo-physical elements). Traditional organizations of credence foods are affected by the presence of several legally independent actors, like food companies, farms, public agencies and consumers (or households), which coordinate quantity and quality issues by means of standards, logos, brands and labels (Raynaud *et al.,* 2005). All these actors have to deal with issues of

asymmetric information and moral hazard problems, therefore often experiencing high transaction costs. Typical solutions are the use of arrangements such as bilateral contracts, strategic networks and alliances, and vertical integration (Ménard and Valceschini 2005; Pascucci 2010). Such solutions often rely on public monitoring (Vetter and Karantininis 2002). However, FCNs are organized in a different way. But how?

According to preliminary empirical evidence, FCNs have been described as based on a group of highly motivated consumers and a (group of) producer(s) that decide to vertically coordinate, and partially integrate, on the basis of a long-term relationship to produce and transact credence foods (Pascucci 2010). In this section we further investigate the organization of FCNs by looking at two theoretical approaches: new institutional economics and organizational science.

3.2.1 A new institutional economics perspective

A new institutional economics approach can be used to characterize FCNs, examining different attributes of governance mechanisms, namely the degree of resource pooling, and types of contracting mechanisms, the latter being divided into coordination, and internal-external competition (Williamson 1991; Ménard 2004; Ménard and Valceschini 2005; Karantininis 2007). The governance mechanisms used in the FCN are based on intense resource pooling, while coordination is based on limited authority and relational contracts (Pascucci 2010). Moreover, there is limited competition among members while external competition with other organizations (such as supermarkets) is very high. Following this approach we can view the FCN as a form of vertical integration between consumers and farmers, leading to the constitution of a hybrid such as a formalized network. The integration process is based on using membership to assign decision and property rights, and driven by the need to share and pool resources which are specific to the members. When membership is strongly formalized, the network assumes the form of a club which, in some cases, can

lead to the legal form of a producer-consumer cooperative (Cembalo et al. 2013). Resource pooling and sharing is slightly different between consumer and producer members: (1) consumers provide time, information, knowledge and financial resources by participating directly in the organization of the production process; (2) farmers provide land and capital assets but also specific skills and knowledge (Pascucci 2010). They also transfer decision rights to consumers. On the one hand, consumers receive as pay-offs leisure and credence foods while reducing transaction costs (i.e. the costs of monitoring). The time spent by consumers in the production process is assumed to be leisure time (Pascucci et al. 2011). The time allocated to the production process is either related to manual working and to its organization (managerial tasks). The time allocated by consumers is also used to monitor the process, and hence to reduce the risk of producers' moral hazard. Since consumers can coordinate participation and their time spent on participation is not a cost but a utility-enhancing activity, we can assume that the overall monitoring costs of the process can be considerably reduced by this mechanism. On the other hand, farmers reduce part of their production and transaction costs (i.e. labour costs, certification costs, etc.), investment uncertainty and income instability (Pascucci 2010). Producers reduce their production or transaction costs by allowing consumers to directly participate in the organization of the production process. They also limit uncertainty and can reduce lock-in problems of investing in specific assets related to credence food production.

3.2.2 An organizational science approach

NIE is limited in addressing the "micro-elements" of organizations (Grandori and Furnari 2008). The main limitation of NIE is the challenge in addressing specific and basic elements of organizational design, while being more focused on the (quantitative) analysis of discrete structural alternatives (Williamson, 1991). Milgrom and Roberts (1995) introduced an approach where several complementarities among different organizational practices could be considered.

However, the list of different practices remains extensive and not sufficiently systematic in nature. For example, it is not clear which practices (governance elements) are complementary and under what circumstances (Grandori and Furnari, 2008). This constitutes a major shortcoming when seeking to analyse "new types" of organizations, for which empirical evidence is still limited, as is the case of FCNs. Grandori and Furnari (2008) proposed to overcome this problem by using a "chemistry of organization" type of approach. Building on three theoretical frameworks in the tradition of organizational science, namely complementary and configurational approaches, transaction cost economics and contingency theory approaches, they identify a "combinative" approach to analyse multiple effective organizational combinations under different contingencies (Grandori and Furnari 2008).

Their approach is based on identifying basic elements, or "building blocks", which constitute an organization. More precisely, they distinguish between four categories of elements, namely: (i) market-like elements, which include price-like and control-by-exit devices; (ii) bureaucratic elements, including formal rules and plans, and articulation of the division of labour; (iii) communitarian elements, including knowledge and value sharing, and common culture; (iv) democratic elements, including the allocation of ownership, decision and representation rights. Market-like elements mainly concern the capacity of coordinating action with minimal communication through high-powered incentives: bureaucratic elements are linked to formal elements of governance mechanisms such as formal rules, procedures and evaluation systems. Community elements are related to organizational practices, infusing cohesion and aligning interests, for example through value and knowledge sharing. Finally democratic elements refer to the diffusion of ownership, decision and representation rights which enable the organization to integrate different interests among and between their members (Grandori and Furnari 2008).

In this approach it is assumed that a combination of different elements is not only possible but constitutes the potential advantage of an organization. This is particularly useful in the case of FCNs where a clear definition is still lacking and contrasting elements persist. For example, in market-like practices organization members base their decisions on the economic incentives they receive. In FCNs consumers often pay farmers a "market" price for the (box of) products delivered. Specific forms of "pay-for-performance" are also used, for example when the farmer receives a "premium" for "extra-quality" products, such as for niche or fresh products. However, discounts can also be arranged, even for high-quality products, as in the case when greater quantities of products are bought, or "share-based" payment is organized at the beginning of each season. In this case a lower price per product is not linked to lower quality, and it does not work as a disincentive for the farmer. On the contrary, it might positively affect trustworthiness between farmers and consumers, reinforcing the willingness to buy and produce high-quality products. Therefore it can be said that also the exchange activities of FCNs are coordinated through a type of price mechanism.

Although FCNs are far from being hierarchical organizations, some form of authority, for example in strategic decisions, is often adopted. For example, authority is used to decide on investments, to control quality issues, to arrange delivery service and solve disputes between farmers and members. As indicated by Grandori and Furnari (2008), the main advantage in using bureaucratic power is basically to have a higher capacity to control opportunism, especially where transaction costs are high or when specific investments were made by FCN members. However, authority and bureaucratic elements represent a challenge for FCNs because hierarchical mechanisms are often in contrast with cooperative behaviour and trust. FCNs are often characterized by participatory decision-making, open access/open exit membership. This can lead to the problem of free-riding of some members (as in many cooperative-type organizations). To address

the issue of free-riding, authority (and formalized rules) can be used to mitigate the tension between group-based interests and those of individual members.

Communitarian elements constitute a fundamental component of FCNs. They are formed by shared norms, which are mainly based on informal rules within each community. They are built to facilitate, motivate and coordinate types of collective actions led by community members because they can prevent opportunism by limiting the expectation that other members will behave opportunistically. In this way they can create trust and trustworthiness, which can also reduce transaction costs (Nooteboom 2007). In the FCN context, trust is an important feature, for example, to reduce the cost of safeguarding against opportunism. This is mainly due to information and knowledge exchange, which leads to control over members' reputations.

In general, communitarian elements can be effective at building trust if shared norms can be created within the community. This process is also leading to greater member involvement and commitment, thus reducing the need for economic-based "punishment" for opportunistic behaviour, while supporting non-economic rewards for group loyalty. It is important to stress that in communitarian practices participants are often trustworthy not due to control mechanisms (punishment) or economic incentives (rewards), but because they choose on the basis of intrinsic motivation. In general, as with other collective organizations, the capacity of FCNs to build trust, and hence reduce transaction costs, is conditional upon the size and homogeneity of the group of participants\members. Especially in their early stages FCNs tend to select highly motivated members, while excluding (indirectly) less aligned and motivated participants.

Distinct from issues of trust and trustworthiness, democratic elements refer to the component of FCNs based on sharing decision rights and fairness of decision making. More participatory decision making and shared ownership of strategic resources are seen as enforcing commitment in the group interests, also leading to

transaction costs reduction. Many FCNs adopt democratic procedures, for example, to check the quality of processes and products, and to enhance investments. The possibility to control but also to deliberate on strategic issues is a fundamental aspect of the potential competitive advantage of FCNs (Nooteboom 2007).

3.2.3 Classification of FCNs: evidence from CSA in North America

Using data available on-line, through web-sites and blogs, we analysed and classified a sample of 95 community-supported agriculture organizations operating in North America (US and Canada) by implementing K-means cluster analysis. The information was gathered in the second half of 2011. Using this information we derived variables related to both the new institutional economics approach, such as pooling and contracting, and the organizational science approach, such as market-like, bureaucratic, communitarian and democratic elements. Of the various types of FCN, CSA is the most widespread in the English-speaking world, especially in urban and peri-urban areas of US and Canada. CSA schemes are often established from an innovative dynamic strategy of farmers, who seek to establish relations with consumers in the same area. FCNs are based on local food supply and maintain a high sense of community. CSA schemes are often led by educated, highly skilled farmers, who work in a mosaic of small-scale farms. CSA prospers where many small farms can satisfy consumer needs with a wide range of food products, for a sizable urban population living in proximity of the farms in question (Adam 2006). The concept of CSA originated in the 1960s, when Japanese women, concerned with the increase in imported food and the loss of farmers and farmland, asked local farmers to grow vegetables and fruit directly for their families. Starting from that, a number of families committed themselves to supporting their region's agriculture. In this way, the *teikei* concept was born which, literally translated, means "food with the farmer's

face on it" (Van En 1995). This model, first implemented in the United States in the mid 1980s, became known as CSA. As defined by Gradwell et al. (1999), CSA is a partnership between farmers and community members working together to create a local food system. CSA farmers may produce vegetables, fruit, meat, dairy products, fibres, etc., directly for local community members. CSA differs from direct marketing because its members commit to a full-season price in the spring, sharing the risks of production (Cicia et al. 2011). With this up-front support, farmers can concentrate on growing quality food and caring for the land. In return, members know where their food comes from and how it is grown; they share a connection to the land and farmers who produce for them, establishing a direct economic and social link between farmers and community members (Wells and Gradwell 2001). Table 1 describes the variables used to identify pooling and contracting elements.

We use these variables to build indexes of intensity for the six elements of governance we considered: pooling, contracting, market-like, bureaucratic, communitarian and democratic. We decided not to assign a weight to different variables, nor to different elements. Therefore each variable equally contributes to determine the intensity of the relevant element. If the specific variable was found we assigned a score of 1, otherwise we gave a score of zero. Table 2 describes the organizational elements we used according to the organizational science approach. In table 3 we report the descriptive statistics of the six governance elements we measured in the sample.

The results of K-means cluster analysis indicate the presence of five types of CSA. Table 4 shows the average indexes of governance intensity for each type. Group 1 is characterized by a high level of formalization and contracting. We use the term "bureaucrats" for this group to indicate that governance mechanisms are mainly based on formalized rules. Decision making is "centralized" and still remains within the area of the farmers' power. The "hard participants" are those belonging to group 2. In this group all indexes have high values and indicate

extensive participation of members in all activities and governance issues of the CSA.

Table 1 – Pooling and contracting elements

Elements	Variable	Meaning
Pooling	Knowledge	Presence of practices to share knowledge between members and producers
	Labour time	Members provide time to work in the community
	Financial capital	Members provide financial capital, for example through subscribing membership shares
	Physical capital	Members share their assets, such as machineries or facilities for supporting the activities of the community
	Decision right on product portfolio quantity	Members can decide how much products to receive from the CSA
	Decision right on product portfolio composition	Members can decide the type of products to receive from the CSA
	Decision right on specific product quantity	Members can decide the quantity of each product to receive from the CSA
	Decision right on specific product quality	Members can decide whether receive organic or non- organic products
	Input	Members provide inputs for the production process (other than labour and capital)
Contracting	Production process checking	Members directly participate and check farming processes
	Direct visit	Members can visit the farm (either in a flexible or a scheduled way)
	Quality checking	Members have the opportunity to comment, complain and discuss about the quality of the products (i.e. through a blog, website, etc.)
	Certification system	Private and/or public formalized certification system is in place
	Contracting membership	Membership contract is formalized
	Default conditions	Contract is specified default conditions (i.e. default in deliveries, breakdown in quality levels, etc.)

Group 3 is more based on democratic mechanisms than group 2 and more based on sharing resources. Group 4 consists of soft participants, indicating that they are not so much involved in the CSA. Finally group 5 is mainly based on communitarian elements with a strong combination of both pooling and contracting issues.

Table 2 – Organizational science elements

Element	Variables
Market-like	Presence of incentive for subscribing annual shares
	Presence of private quality certification system
Bureaucratic	Participation in the community is formalized
	Subscription of annual shares is formalized
	Formal public and\or private quality certification system
	Formalized membership
	Formalized default conditions
	Scheduled visit in the farm
	Participation in the production process is formalized
Communitarian	Members are stimulate dot share knowledge
	Participation in the community is informal
	Participation in the production process is informal
	Free-access to the farm
	Informal certification system
	Quality is checked through blogs, discussions and\or debates
Democratic	Participation in the community is open
	Quantity of products per box is jointly decided
	Portfolio composition of products is jointly decided
	Quantity of each product is jointly decided
	Quality of each product is jointly decided (i.e. organic non organic)
	Type of inputs to be used is jointly decided
	Production decisions are shared
	Visiting the farm is possible
	Information are shared

Table 3 – Descriptive statistics for the six organizational elements results

Elements	Min.	Max.	Mean	Std. Deviation
Market-like	0	2	1,22	0,47
Bureaucratic	0	5	3,24	1,00
Communitarian	0	6	3,27	1,82
Democratic	0	7	1,81	1,44
Pooling	1	9	4,06	1,62
Contracting	0	11	5,62	2,49

Table 4 – Types of CSA

Element	Typologies				
	Bureaucrats	Hard participants	Democratic sharers	Soft participants	Relational sharers
Market-like	1,3	1,4	1,4	0,9	1,1
Bureaucratic	3,7	3,9	2,9	2,1	3,1
Communitarian	1,9	5,4	2,7	0,9	4,2
Democratic	0,5	2,8	4,6	0,9	1,9
Pooling	2,1	5,0	6,9	2,9	4,9
Contracting	5,3	8,9	4,7	2,1	5,6
N. of cases	22,0	22,0	7,0	16,0	28,0

3.3 Conclusions

In this paper we discussed and analysed CSA within the framework of food community networks. In this type of organization, consumers and farmers closely integrate their functions by using combinations of different organizational elements such as market-like elements, bureaucratic, communitarian, democratic, contracting and pooling. More specifically we have studied several CSAs operating in North America. We identified five main distinct types but also confirmed some common features. For example, CSA often makes use of very formalized membership, to define not only the type of “delivery” service

consumers wish to receive but also to share risks and transfer relevant decision rights. However, we found that consumers' decision rights on the production phase are sometimes limited, especially as regards the allocation of land to different uses.

The presence of different types of organizations indicates that within the framework of FCNs internal organizational dynamics have to be further investigated and linked to FCN different performance. In the current debate on alternative or short supply chains such links between different organizational structures and performance are under-investigated. Despite the broad consensus that FCNs can contribute, for example, to local sustainable development, it is still unclear which types of FCNs may be most suited to that purpose. Another issue requiring in-depth understanding is participation and whether a specific organizational structure leads the FCN to attract a target group of members. Understanding the relation between the type of FCN and type of participation mechanism may be important to better implement development-oriented strategies. For example, FCNs may be suitable to preserve local products, or to increase healthy food diets in a target group. Understanding whether a more or less formalized membership facilitates participation can be considered a key factor.

The analysis provided in this paper should be seen in the light of a descriptive contribution. Stricter research hypotheses on factors contributing to adoption of different governance mechanisms could not be tested, given the type and nature of information available. Analysis of FCN performance or member participation also has to be implemented. These are points to be developed in a future research agenda.

4. “Rationally local”: Consumer participation in alternative food chains

Abstract: Why are consumers increasingly participating in alternative food chains to co-produce and distribute foods with farmers? In this paper values and food-related lifestyles, as well as transaction costs and socio-demographics, are used to analyze consumer participation in alternative food chains in Italy. Using a simultaneous system of equations a model with instrumental variables is implemented to measure the relationships between values and food-related lifestyles, and between the latter and participation in an alternative food chain. Our results show that Italian participants in alternative food chains have the profile of rational shoppers who typically look at price and taste criteria. Although transaction costs do not affect participation directly, they do so through food-related lifestyles.

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4.1 Introduction

The number of consumers who are joining farmers to implement so-called alternative food chains (AFCs) is increasing worldwide (DEFRA, 2003; Renting *et al.*, 2003; IGD, 2010). Consumers, as individuals or households, often engage farmers in co-producing and distributing foods. They set up community farming practices, clubs, cooperatives, or associations, sharing information, knowledge and experience. Though, in economic terms, this type of organization is still at a niche stage, it represents an interesting conceptual case study because it apparently challenges the mainstream approach to consumer choice. Consumers participating in an AFC seemingly make their purchase decisions non- or sub-optimally such that mainstream economics calls it "irrational behavior". To illustrate, a consumer participating in an AFC shows, *ceteris paribus*, a higher willingness to pay for local food products than non-AFC participants (Toler *et al.*, 2009). While several authors have enlarged the mainstream conceptual framework, introducing behavioral assumptions such as trust, fairness, and inequality aversion (Lusk and Briggeman, 2009), others have explored ways to introduce concepts rooted in consumer sociology and psychology (Kahle and Chiagouris, 2009; Kristiansen and Hotte, 1996). In the latter domain AFC participation is explained by the fact that consumers seek a better quality of life through a combination of both economic and environmental, social and political aspects (Nussbaum and Sen, 1993; Cembalo *et al.*, 2013). In this perspective motivations for participation in AFCs are linked to individual values (Beatty *et al.*, 1985; Maio and Olson, 1994; Cembalo *et al.*, 2013), and food-related lifestyles (Brunsø *et al.*, 2004), even though it is not yet clear in what way. Moreover, to the best of our knowledge, no indication or any empirical evidence is available in the literature on how values and food-related lifestyles influence participation. Is an individual with a higher degree of "benevolence" and "universalism" more likely to participate in an AFC? How far does the fact of being "emotionally involved" with the food affect the decision to join an AFC?

To address these broad, hitherto untackled questions we implemented an empirical study on an Italian type of AFC called Solidarity Purchase Groups (GASs)[4]. A GAS is an organization of food producers and consumers strongly embedded in local economic and social networks, where common pool resources management and food quality are the key elements. The GAS phenomenon started developing in Italy at the end of the 1990s. A GAS is informally regulated like a club. Consumers who decide to participate share their knowledge and time in the organization. One of the common activities among GASs is the purchase of food products from local farmers. GAS members select and contact local farmers who become members if, and only if, they agree to lower the environmental impact of their production activities, respect worker rights, and are willing to collaborate in building reciprocal, though informal, trust (Schifani and Migliore, 2011). To this extent GAS participants deem quality as not only an intrinsic attribute of a good, but as the ability to create relations, emotions and significant experience (Cembalo *et al.*, 2012).

In the present study we analyze the motivations for participating in one of the GASs operating in Sicily (southern Italy) where some 32 other GASs are operating, representing some 1,200 households (Cembalo *et al.*, 2013). We interviewed a target group of GAS participants (GASp) and a control group of non-GAS participants (NGASp). The overall sample included 303 individuals. In our approach we analyze the impact of values and food-related lifestyles on participation, controlling for transaction costs (TCs) and socio-demographic variables. Values were collected by means of the portrait value questionnaire proposed by Schwartz (1992). While portrait values serve to delineate personal traits, direct relationships between them and actual behavior have been demonstrated to be weak (Kristiansen and Hotte, 1996). Since our aim is to model the actual AFC participation behavior in hand, it was necessary to look at the so-

[4] From here on referred to as GAS from its Italian name: Gruppi di Acquisto Solidale

called moderator variables between values and behavior. Therefore, food-related lifestyles, as proposed by Brunsø and Grunert (1995), were implemented as a tool to synthesize a wide set of moderator variables (such as personality traits, situational factors, and value quality). Food-related lifestyle also serves as a balance between personal abstract values (Schwartz portrait values) and situation-specific food behaviors (Brunsø *et al.*, 2004). The econometric approach implemented took care of such specificity, implementing a model comprising a simultaneous system of equations with instrumental variables where instruments are the portrait values. Therefore, 23 FRLs were aggregated in six factors selected by means of a principal component analysis. Each was implemented in the model as a dependent variable of a structural equation. The seventh equation served to directly model AFC (GAS) participation. Since there is no information in the TCs literature on cause-effect relationships with FRLs, in the system of equations transaction costs were included as control variables. Finally, the usual socio-demographic variables were included.

Our results indicate that AFC participation is influenced by a combination of factors. The probability of joining a GAS increases with those individuals described as "rational shoppers" whose food styles are well described by criteria such as taste and price. It also increases with individuals who lend priority to family, planning, and are keen on making a list before shopping. By contrast, the probability of joining a GAS decreases with those individuals, termed "modern consumers", who have fast-moving consumption habits. It also decreases with those individuals who enjoy doing grocery shopping and find personal satisfaction and involvement in meal preparation. Price/quality ratio and open-mindedness are not statistically significant. Although portrait values and transaction costs do not affect GAS participation directly, they do so through food-related lifestyles.

4.2 Values in consumer choices

Values have been central to many social disciplines since the 1060s (Allport *et al.*, 1960), and many measuring scales have been suggested (Kahle and Chiagouris, 2009). One of the first authors who defined values was Inglehart (1971) who began from theories of psychological and sociological perspectives. Another author worth mentioning is Rokeach who theorized the key role of values in cognitive networks of attitudes and beliefs. He defined values as *"...enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence*" Rokeach (1973 p. 5). The conceptual innovation introduced by Rokeach concerns the nature of values termed "enduring beliefs", since they are learned in absolute terms by individuals. Several value surveys have been designed and implemented in research projects aimed at accomplishing different objectives (Vinson and Munson, 1976; Becker and Connor, 1981). However, most have been questioned because they have proved substantially arbitrary in the value asset collected that made the empirical procedures somewhat unattractive (Kerlinger, 1973; Beatty *et al.*, 1985). A few years later in the early 1990s, Shalom H. Schwartz (1992) made a breakthrough. He identified ten values, namely: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, universalism and benevolence. In Schwartz's theory, values are seen as abstract ideals that guide personal life principles. As a consequence, Schwartz's definition of values is congruent with the concept of stability and durability. The ten values derive from three fundamental needs: i) those of individuals as a biological organism; ii) requisites of social interaction; iii) and the survival and welfare needs of the group. Schwartz suggested two alternative approaches to measure individual values: the Schwartz Value Survey (SVS), and the Portrait Values Questionnaire (PVQ) (Schwartz *et al.*, 2001). Choosing one methodology over the other is a matter of research objective and the sample being

studied. However, the PVQ approach is known for being easier to implement and more reliable in the results obtained (Schwartz *et al.*, 2001).

While values explain most abstract motivations of individuals, the relationship between actual behavior and values can be very indirect. Value attainment finally achieved depends on the good itself but also on mediator variables (Steenkamp and van Trijp, 1989): Between values and behavior there seems to be an intermediate level which concerns, as a synthesis of mediator variables, attitudes or lifestyles related to food consumption and experience (Vinson *et al*., 1977; Brunsø and Grunert, 1995; Maio *et al.*, 2003). Kahle *et al.*'s research findings (1986) on consumer choice of natural food show the existence of a relationship between values and food-related lifestyles, and between the latter and actual behavior. Direct relationships between values and behavior have been demonstrated to be weak (Kristiansen and Hotte, 1996), making it important to look at "moderator variables" between values and behavior.

In the case study of this paper food-related lifestyles (FRLs), first proposed by Brunsø and Grunert (1995), were collected. FRLs may be defined as a tool able to synthesize a wide set of moderator variables, such as personality traits, situational factors, and value quality. The purpose of FRLs is to relate the perception of concrete attributes to abstract personal values. From this point of view, FRLs play the role of a "zipper" along the hierarchy, connecting highly abstract values to actual behavior (Homer and Kahle, 1988; Ajzen, 1991). Put differently, FRLs balance personal abstract values and situation-specific food behaviors (Brunsø *et al.*, 2004). Under this perspective, FRLs are internalized food-specific values defined as "*…the system of cognitive categories, scripts and their associations which relate a set of products to a set of values*" (Brunsø and Grunert, 1995). FRLs serve to explain actual food behavior whilst reducing the theoretical and empirical complexity of food choice modeling (Brunsø *et al.*, 1996, 2004).

The meaning of FRLs can be integrated by adding another measure of consumer purchasing behavior, namely the concept of transaction costs. TCs are the main

unit of analysis of new institutional economics, especially in the domain of transaction cost economics (TCE). Though TCE is rooted in the analysis of contract design (Adler *et al.*, 1988) and vertical integration (John and Weitz, 1988), it has been recently applied to explain consumers' choices, such as use of e-commerce and participation in virtual markets (Picot *et al.*, 1997; Teo and Yu, 2005). In the specific case of food purchases, TCs detect consumers' resource allocation, for example in terms of time, for gathering information, negotiating and monitoring the features of desired attributes of food products. In such a way TCs overcome the intangible nature of FRLs by highlighting the effective effort made by consumers in a particular purchasing decision. To illustrate, one of the FRLs is "Importance of product information" which synthesizes the score associated to three statements: i) *For me product information is of great importance. I need to know what the product contains*; ii) *I compare product information labels to decide which brand to buy*; iii) *I compare labels to select the most nutritious food*. It becomes apparent that, even though this FRL informs us whether product information is important to an individual, nothing has been said about the magnitude of the decision making effort. In this case, TCs related to "information cost" overcome this gap, measuring how important information is for someone. Nevertheless, there is no information to be drawn from the literature on cause-effect relationships between FRLs and TCs. This is why TCs were implemented in the econometric model as control variables and no cause-effect speculation was drawn from the results while direct or indirect relationships were observed. Then we also tested for TCs, namely information, negotiation and monitoring, which are thought to directly influence participation.

4.3 Questionnaire description and data management

Data were collected in Palermo, one of the largest urban centers in southern Italy (the capital of both the region of Sicily and province of Palermo). In all, 303 interviews were collected by means of an *ad hoc* questionnaire: 103 submitted to

GAS participants, and 200 to consumers that had not joined any alternative food chain organization (control group of consumers). The latter interviewees were recruited in two malls in the city of Palermo. The decision to interview AFC (GAS) and non-AFC participants in the same city was taken in order to obtain two subsamples of consumers unaffected by differences in social, economic, and cultural environments. The questionnaire was self-completed by respondents in about 20-25 minutes. GAS participants were asked to complete the questionnaire while they were waiting at the meeting place to pick up a weekly food order. Non-GAS participants voluntarily stopped by a desk where questionnaires were available. Near the desk a poster was displayed, inviting people to take part in a (generic) university research project regarding consumer behavior. At the end of the interview, people were rewarded for their participation with a lottery ticket with a jackpot ranging from 5 to 500,000 euro. We used the reward of a lottery ticket to reduce possible sample selection biases: i) avoiding selection of non-GAS participants with values biased towards universalism and altruism, since dedicating (non-economically rewarded) time to a research survey is potentially similar to volunteering; ii) avoiding selection of interviewees with lower opportunity and transaction costs which could be the effect of using a fixed reward approach (Harrison *et al.*, 2009). Data collection was carried out from January 15th to February 10th 2012. The questionnaire was divided into four sections. The first concerned the socio-demographic and economic characteristics of the interviewee and his/her household (table 1). The second section served to collect values replicating the Portrait Value Questionnaire (PVQ) proposed by Schwartz (1992, 1994). The PVQ consisted of 21 questions (differentiated by gender) presented as a description of an individual, for example: "*Thinking up new ideas and being creative is important to him/her. He/she likes to do things in his/her own original way*". The interviewee was asked to respond on a scale ranging from 1 to 6, where 1 means "very similar to me", and 6 "very different from me".

Table 1 - Characteristics of survey participants

Variables	GAS	%	Non-GAS	%
	no.		*no.*	
Sex				
Women	57	55.34	120	60.00
Men	46	44.66	80	40.00
Household size				
1 member	88	85.44	167	83.50
2 members	11	10.68	28	14.00
3 members	3	2.91	5	2.50
4 members	1	0.97		0.00
Education				
Elementary school	0	0.00	12	6.00
Middle school	4	3.88	59	29.50
High school	40	38.83	102	51.00
BA or BSc	42	40.78	21	10.50
Masters or PhD	17	16.50	6	3.00
Net monthly household income (in euro)				
Below 1,499	16	15.53	105	52.50
1,500 - 2,499	28	27.18	62	31.00
2,500 - 3,499	36	34.95	22	11.00
3,500 - 4,999	18	17.48	7	3.50
5,000 or more	5	4.85	4	2.00
Occupation				
Unemployed	1	0.97	25	12.50
Homemaker	3	2.91	34	17.00
Student	2	1.94	10	5.00
Retired	9	8.74	12	6.00
Office employee	51	49.51	71	35.50
Manual worker	0	0.00	19	9.50
Teacher	15	14.56	5	2.50
Retailer	0	0.00	5	2.50
Self-employed	16	15.53	18	9.00
Entrepreneur	6	5.83	1	0.50
Age (years)				
18-29	3	2.91	71	35.50
30-39	17	16.50	50	25.00
40-49	41	39.81	40	20.00
50-59	31	30.10	23	11.50
> 60	11	10.68	16	8.00

From the 21 responses, Schwartz portraits are constructed by calculating the mean scores collected by pairs of questions (except for one value which is a result of responses to three questions). The resulting ten values are those listed in section 2. Schwartz organizes the ten values in a circular spatial way divided into two pairs of opposite main dimensions: Openness to change (stimulation, self-direction, and universalism) versus Conservation (security, conformity and tradition); Self-transcendence (benevolence and universalism) versus Self-enhancement (hedonism, achievement and power). Proximity of values is considered similar in meaning, such that similarity is inversely proportional to the distance that values occupy in the circle (see table 2 for summary statistics of the ten Schwartz values).

Table 2 - Summary statistics of the ten Schwartz values (obs. 303)

Values	Mean	Std. Dev.	Min	Max
Benevolence	1.911	1.069	1	6
Universalism	1.982	0.978	1	6
Selfdirection	2.158	1.040	1	6
Stimulation	3.038	1.145	1	6
Hedonism	2.876	1.143	1	6
Achievement	2.960	1.334	1	6
Power	3.523	1.130	1	6
Security_val	2.310	1.156	1	6
Conformity	2.759	1.136	1	6
Tradition	2.436	1.131	1	6

The third questionnaire section collected food-related lifestyles (FRLs) first proposed by Brunsø and Grunert (1995). The FRLs comprised 69 statements like the following: "*To me product information is of great importance. I need to know what the product contains*". The interviewee was asked to state his/her level of agreement with each statement, using a Likert scale ranging from 1 (totally disagree) to 7 (fully agree). Following Brunsø and Grunert's (1995) empirical

framework, the 69 scores are composed of 23 variables, with each combining three set questions. The scores were collected for each question and the mean was calculated per group of three questions. The resulting variables are: health, price-quality ratio, novelty, organic, taste, freshness, self-fulfillment, security, social relationships, involvement in cooking, new way of consumption, convenience, family, planning, women tasks, product information, attention to advertisements, enjoyment, specialty shops, price criterion, shopping list, and social event (please refer to Brunsø and Grunert, 1995, for a detailed explanation of the variables. See table 3 for summary statistics of the 23 variables).

Table 3 - Summary statistics of the 23 food-related lifestyles (obs. 303)

Food-related lifestyles	Mean	Std. Dev.	Min	Max
Health	5.538	1.440	1	7
Price quality ratio	5.354	1.426	1	7
Novelty	4.431	1.383	1	7
Organic	4.385	1.602	1	7
Taste	4.736	1.066	1	7
Freshness	5.831	1.451	1	7
Self-fulfillment	4.961	1.461	1	7
Security	4.485	1.406	1	7
Social relationship	5.310	1.424	1	7
Involvement in cooking	4.628	1.414	1	7
New way	4.769	1.445	1	7
Convenience	2.815	1.524	1	7
Family	4.334	1.575	1	7
Planning	3.868	1.321	1	7
Women task	3.328	1.475	1	7
Product information	5.033	1.509	1	7
Attention to adv	3.395	1.469	1	7
Enjoyment	4.986	1.545	1	7
Specialty shops	4.557	1.263	1	7
Price criterion	4.956	1.571	1	7
Shopping list	4.653	1.705	1	7
Snack vs meal	3.439	1.358	1	7
Social event	4.209	1.445	1	7

In order to reduce the number of variables to be implemented in the econometric model (presented in the next section), a Principal Component Analysis was performed on the 23 variables (table 4). Six latent variables were selected after a varimax rotation.

Table 4 - Principal Component Analysis results on FRL, after varimax rotation

FRL	Desired higher order product attributes	Modern consum.	Open minded.	Emotional involvement	Rational shopping	Shoppin' script
Health	**0.8048**	-0.1293	0.2003	0.1595	0.0759	0.0947
Price qual. ratio	**0.5817**	0.0208	-0.024	0.2587	0.4661	0.159
Novelty	0.1089	-0.0415	**0.8081**	0.1563	0.004	-0.0273
Organic	**0.7138**	-0.1238	0.1346	-0.0706	-0.1889	-0.1573
Taste	0.0924	-0.0287	0.0249	-0.0183	**0.7561**	-0.0291
Freshness	**0.7624**	-0.1341	0.0598	0.1493	0.2708	0.068
Self-fulfillment	0.3347	0.1453	0.1913	**0.6552**	0.1835	0.0262
Security	**0.5025**	0.3204	-0.4299	0.0236	0.2942	0.1216
Social rel.	**0.5671**	0.1938	0.3406	0.0609	0.4404	-0.1319
Inv. in cooking	0.0539	-0.4215	0.2017	**0.6276**	-0.0235	0.0208
New way	0.2155	0.0684	**0.596**	0.4952	-0.0068	0.0457
Convenience	-0.2638	**0.735**	0.1279	-0.0064	0.1177	0.0143
Family	**0.3648**	0.2971	0.2513	-0.1576	0.0572	**0.3348**
Planning	0.071	0.108	-0.2013	0.1716	-0.1725	**0.6345**
Women task	-0.1079	0.36	**-0.5349**	0.3195	-0.0609	-0.1608
Prod. information	**0.6506**	0.0994	-0.1318	0.271	0.0637	0.2182
Attention to adv	-0.0254	**0.7254**	-0.1913	0.1196	0.1153	0.1044
Enjoyment	0.3398	0.1757	-0.0147	**0.5689**	0.0362	0.1031
Specialty shops	**0.5582**	0.1338	0.0111	0.2411	-0.2297	0.1573
Price criterion	0.2697	0.208	-0.1393	0.3888	**0.5052**	0.2048
Shopping list	0.0899	-0.0735	0.0943	-0.0003	0.1056	**0.7608**
Snack vs meal	0.1317	**0.6915**	-0.0675	-0.0388	-0.2313	-0.0681
Social event	0.0754	**0.4773**	**0.4625**	0.0588	0.3982	-0.1189

The first component was called "higher-order product attributes". The main factor loadings are (reported in bold in the table): health, price-quality ratio, organic, freshness, security, social relationship, family, importance of product information, and specialty shops. They represent an FRL of consumers mainly seeking high-quality products, like organic ones, giving priority to family, paying attention to product information but not neglecting food price-quality ratio. This component

describes a consumer keen on looking for specialty shops where he/she finds high order products.

The second component, called "modern consumer", is represented by four main factor loadings: convenience (ready to use, pre-cooked, and frozen foods), attitude toward advertising, snack *vs* meal (snack and fast food *vs* meal preparation), and social event. It seems to describe an FRL related to a modern consumer who spends little time cooking.

The third component is "open-mindedness". The main factor loadings are: novelty, new way of experiencing food, women's tasks, and meals as social events[5]. It describes an FRL of consumers who do not consider meal preparation as a woman's task, and those searching for new foods and new ways of preparing meals.

The fourth component is termed "emotional involvement". The main factor loadings are related to the emotional side of food and its preparation. It describes an FRL of a consumer who enjoys doing grocery shopping and finds personal satisfaction and involvement in meal preparation.

The fifth component is called "rational shopping". The main factor loadings are taste and price criteria. It describes an FRL of a consumer who pays attention mainly to intrinsic attributes and who is guided, when grocery shopping, by price criteria with little emotional involvement.

The sixth and last component is termed "shopping script". The main factor loadings are family, planning, and shopping lists. It describes an FRL of a consumer who gives priority to his/her family[6] and plans in advance what items they wish to purchase.

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[5] Social event factor is also listed among factor loadings of the second component. Loading values are, respectively, 0.4773 in the second component and 0.4625 in the third. When factor loadings of a variable are so significantly close a conservative approach is to consider it in both components.

[6] Family factor is also listed among factor loadings of the first component. Loading values are, respectively, 0.3648 in the first component and 0.3348 in the sixth. When factor loadings of a variable are so significantly close a conservative approach is to consider it in both components.

The fourth, and closing, section of the questionnaire concerned transaction costs (TCs). TCs were divided into three categories, namely: information, negotiation, and monitoring costs. The first and third categories were built on six questions while the second on five (table 5). Respondents were asked to answer on the degree of importance of some aspects concerning the three TC categories. Also in this section, a Likert scale was presented ranging from 1 (not at all important) to 7 (very important)[7]. A variable was derived as the mean of the scores collected.

Table 5 - Summary statistics of the transaction costs (obs. 303)

Transaction costs		Mean	Std. Dev	Min	Max
IC	Price uncertainty	4.165	1.772	1	7
IC	Price uncertainty	5.816	1.419	2	7
IC	Product information	6.204	0.984	3	7
IC	Product information	6.223	1.047	3	7
IC	Comparison costs	4.252	1.719	1	7
IC	Comparison costs	4.573	1.791	1	7
NC	Speed of sourcing	6.243	1.071	2	7
NC	Speed of sourcing	5.010	1.839	1	7
NC	Risk of sourcing	4.893	1.668	1	7
NC	Bargaining costs	4.214	1.563	1	7
NC	Bargaining costs	3.592	1.751	1	7
MC	Purchase loss	6.282	1.353	1	7
MC	Purchase loss	5.709	1.758	1	7
MC	Purchase loss	6.078	1.440	1	7
MC	Quality uncertainty	6.282	1.192	1	7
MC	Quality uncertainty	3.961	1.495	1	7
MC	Quality uncertainty	3.942	1.638	1	7

*IC: Information Costs; NC: Negotiation Costs; MC: Monitoring Costs

4.4 Empirical model

The hypothesis underlying this study is that participation in an AFC (in our research identified by a GAS) is affected by consumer values and food-related

[7] Details on how TCs were collected are available upon request.

lifestyles, controlling for transaction costs and socio-demographic variables. In this framework, individual values are not intended to affect FCN participation directly, but they do so through their influence on the FRL (Maio *et al.*, 2003; Rokeach, 1973; Schwartz, 1992; Brunsø and Grunert, 1995). To test this hypothesis, simultaneous estimation of a linear system of seven equations was performed (Cameron and Trivedi, 2005, Hall, 2005; Greene, 2008). The model allows a set of hypotheses involving a chain of causal relationships to be tested simultaneously, with the support of appropriate instrumental variables. In a case like this, the OLS estimator is biased and inconsistent while a system of equations, with instrumental variables, can help model a hierarchical/causal system, correcting for sample selection and reverse causality (Heckman and Vytlacil, 2005).

An Instrumental Variable (IV) estimator was also implemented. The implementation of IVs is motivated by two reasons. The first is to use instruments that can model the theory of chain causality presented in the second section (Vinson *et al*., 1977; Kahle *et al.,* 1986; Ajzen, 1991; Brunsø and Grunert, 1995; Maio *et al.*, 2003). Secondly, IVs are used when the fundamental assumption of consistency of least squares estimators is violated. IV estimators provide, instead, a consistent estimator under the assumption that valid and sound instruments exist. IV procedure avoids the problem of joint determination of the independent and dependent variables through the inclusion of a third variable (the instrument), which affects only the independent and not the dependent variable. In our case PVs were used as instruments and are considered correlated with the regressors.

The system comprises six equations, each for one of the principal components of the FRLs described above (equation 1), and a seventh that models GAS participation (equation 2). Each equation refers to 303 observations.

$$\mathrm{y} = \alpha + \Omega\omega + \Gamma\gamma + \mathrm{Z}\delta + \mathrm{u} \qquad (1)$$

$$\psi = \upsilon + \mathrm{y}'\beta + \Theta'\lambda + \Xi'\rho + \varepsilon \qquad (2)$$

where y is a 6 x 1 vector representing the six factorial scores of the food-related lifestyle principal component as presented in table 4: f_frl1: higher-order product attributes; f_frl2: modern consumer; f_frl3: open-mindedness; f_frl4: emotional involvement; f_frl5: rational shopping; f_frl6: shopping script. The first six dependent variables (y_1 through y_6) play an important role since they are all endogenous variables of the system. α is the 6 x 1 vector of parameters of the constant term. Ω is a 6 x 6 matrix of socio-demographic variables: *age* of respondent; *sex* as respondent gender; *job-type* as a categorical variable that goes from 1 to 10 as job type increases in "quality"; *education* that goes from 1, elementary school certificate, to 5, Masters or PhD degree; monthly family net *income*; *nat_food* as a percentage of natural food on total food expenditure. ω is a conformable (6 x 1) vector of parameters related to socio-demographic variables. Γ represents the 6 x 3 matrix of transaction costs variables: *TC_inf* as information costs; *TC_negot* as negotiation costs; *TC_mon* as monitoring costs. γ is a conformable (3 x 1) vector of parameters related to TC variables. Z is a 6 x 10 matrix of the ten values discussed in the previous section (table 2): Benevolence, Universalism, Self-direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity, Tradition. PV variables are different in each of the first six equations. Not all the values affect each of the FRLs at the same time since the values are themselves somehow alternative to each other. The choice of considering differentiated values in the FRL equations is justified by the theoretical considerations expressed in section 2. It makes it more likely to have some values influencing a certain FRL and not others. In more technical terms, the full set of instrumental variables was not used in each equation, but differentiated ones. δ is a conformable (10 x 1) vector of parameters related to PV variables. The list of PVs implemented in each of the six equations is reported in table 6. Finally, u is a 6 x 1 vector of the structural disturbances.

As for equation 2, ψ is a binary variable that takes the value 1 if the interviewee participates in the GAS, 0 otherwise. In this study, the latter represents the core equation showing functional relations concerning motivation in joining a GAS. Θ is a vector (6 x 1) of the socio-demographic variables described above and λ its conformable vector of parameters. Ξ is a vector (3 x 1) of the TCs and ρ its conformable vector of parameters. Finally, ε is the structural disturbance of equation 2.

When a model specifies structural equations for all endogenous variables, as was achieved in this study, there are few possible IV estimation procedures. In this case we compared three-stage least square (3SLS) with robust standard errors, and the iterative Generalized Method of Moments (i-GMM) with bootstrap standard error computation. IV are the ten portrait values, resulting in an overidentified system of equations. These are suitable instruments because they are theoretically based and are confirmed by various test statistics (instrument relevance and over identification restriction tests) [8].

4.5 Model results

From the estimation results (table 6) it emerges that, of the two procedures implemented, the 3SLS performed better in terms of coefficient significance and overall model consistency[9].

Participation in GAS (AFC) was explicitly modeled in equation 2. Starting from the endogenous variables of the system, our results show that 4 of 6 food-related lifestyles directly explain the motivation for joining a GAS. They are f_frl2 (Modern Consumer: -0.235), f_frl4 (Emotional Involvement: -0.37), f_frl5 (Rational Shopping: 0.564), and f_frl6 (Shopping Script: 0.415).

[8] Details on post-estimation testing are available upon request.

[9] Details on estimation procedure are available upon request. Models were programmed and ran in STATA ver 11.

Table 6 - Estimation results

Variables	Coefficients				Variables	Coefficients			
	3SLS		i-GMM			3SLS		i-GMM	
y_1: f_frl1 - Desired higher order prod. attributes					y_2: f_frl2 - Modern consumer				
Benevolence	0.097	*	0.111	*	Selfdirection	0.121	*	0.091	
Universalism	-0.123	*	-0.135	**	Universalism	0.256	***	0.285	***
Selfdirection	-0.083	*	-0.069		Hedonism	-0.208	***	-0.207	***
Conformity	-0.083	*	-0.083	*	TC_inf	0.087	*	0.089	**
Security_val	0.097	**	0.078		TC_negot	0.166	**	0.166	**
Tradition	-0.018		-0.040		TC_mon	0.006		0.004	
TC_inf	0.204	***	0.201	***	age	-0.009	**	-0.009	**
TC_negot	0.104	*	0.102		sex	-0.202	*	-0.200	
TC_mon	0.244	***	0.243	***	job_type	0.005		0.005	
age	0.002		0.002		education	-0.123	*	-0.121	**
sex	-0.079		-0.075		income	0.000		0.000	
job_type	-0.028		-0.027		nat_food	-0.005	**	-0.005	**
education	-0.028		-0.029		constant	-0.434		-0.462	
income	0.000		0.000	*					
nat_food	0.010	***	0.011	***					
constant	-2.702	***	-2.620	***					

Variables	Coefficients				Variables	Coefficients			
	3SLS		i-GMM			3SLS		i-GMM	
y_3: f_frl3 - Open-mindedness					y_4: f_frl4 - Emotional involvement				
Hedonism	-0.155	***	-0.138	***	Hedonism	0.079		0.085	
Power	0.182	***	0.152	***	Achievement	-0.150	***	-0.158	**
TC_inf	-0.007		-0.006		Stimulation	0.019		0.014	
TC_negot	0.066		0.060		TC_inf	0.092	*	0.093	*
TC_mon	0.016		0.023		TC_negot	-0.035		-0.037	
age	-0.004		-0.004		TC_mon	0.189	***	0.190	***
sex	-0.025		-0.030		age	0.003		0.003	
job_type	0.084	***	0.086	***	sex	-0.078		-0.079	
education	0.171	***	0.175	***	job_type	0.014		0.014	
income	0.000		0.000		education	-0.141	**	-0.141	**
nat_food	0.006	***	0.007	***	income	0.000	***	0.000	***
constant	-1.492	***	-1.453	***	nat_food	0.001		0.001	
					constant	-0.438		-0.432	

Variables	Coefficients				Variables	Coefficients			
	3SLS		i-GMM			3SLS		i-GMM	
y_5: f_frl5 - Rational shopping					y_6: f_frl6 - Shopping script				
Hedonism	-0.067	*	-0.071		Selfdirection	0.109	**	0.105	**
TC_inf	0.198	***	0.198	***	TC_inf	0.089		0.089	
TC_negot	-0.100		-0.100	*	TC_negot	0.230	***	0.230	***
TC_mon	0.243	***	0.243	***	TC_mon	-0.182	**	-0.183	***
age	-0.009	**	-0.009	**	age	0.009	*	0.009	**
sex	0.159		0.159		sex	0.010		0.011	
job_type	-0.009		-0.009		job_type	0.001		0.001	
education	0.156	**	0.156	***	education	0.020		0.020	
income	0.000		0.000		income	0.000		0.000	
nat_food	-0.011	***	-0.011	***	nat_food	-0.002		-0.002	
constant	-1.514	***	-1.507	***	constant	-1.065	***	-1.054	***

Variables	Coefficients			
	3SLS		i-GMM	
y_7: Motivation for participation in a GAS				
f_frl1: Desired higher order product attributes	-0.214		-0.232	
f_frl2: Modern consumer	-0.235	***	-0.173	*
f_frl3: Open-mindedness	0.156		0.034	
f_frl4: Emotional involvement	-0.376	***	-0.332	*
f_frl5: Rational shopping	0.564	**	0.427	*
f_frl6: Shopping script	0.415	**	0.181	
TC_inf	-0.040		0.004	
TC_negot	0.044		0.079	
TC_mon	0.029		0.022	
age	0.010	**	0.011	***
sex	-0.205	*	-0.172	**
job_type	0.002		0.011	
education	-0.094		-0.027	
income	0.000		0.000	
nat_food	0.015	***	0.014	***
constant	-0.127		-0.757	

*legend: * p<.1; ** p<.05; *** p<.01*

Taking into account coefficient signs, individuals' motivations may be profiled. A Modern Consumer, as previously defined, is one keen on convenience food. Its negative sign seems to suggest that participants have a more developed attitude through a reflexive type of food-related lifestyle inversely influenced by values enhanced by self-direction and universalism (coefficients in equation y_2 respectively 0.121 and 0.256) with a positive influence of personal hedonism (-0.208 in equation y_2[10]). However, the negative sign of Emotional Involvement suggests that the decision to participate is not an emotional task, and it is directly correlated with Self-enhancement values such as Achievement (-0.150 in equation y_4). The rationality of the motivations in joining a GAS is also confirmed by the positive signs of the coefficients of Rational Shopping and Shopping Script (f_frl5 and f_frl6). This result is aligned with GAS organization (Cembalo *et al.*, 2013): Participants must choose from a list of goods available on a weekly basis. They are called to do that four days in advance before the pick-up day. The value influencing the Rational Shopping attitude is Hedonism (directly correlated: -0.067 in equation y_5), while the Self-direction value influences Shopping Script (0.109 in equation y_6). The negative sign of the Hedonism coefficient in equation y_5 seems to confirm that the Self-enhancement dimension comes into consideration but positively influences food-related lifestyles. On the other hand, the statistical significance of Self-direction in equation y_6 confirms the presence of a value dimension related to Openness to Change.

Information, negotiation and monitoring transaction costs do not affect participation directly, but they indirectly affect participation through FRLs. When transaction costs variables are statistically significant, coefficient signs are positive (the only exception is for monitoring costs in equation y_6). Transaction costs seem to have a crucial role in most of the food-related lifestyles, namely:

10 It is worth reminding that portrait value scores are collected by means of a Likert scale ranging from 1 to 6 where 1 means "Very much like me" and 6 "Not like me at all".

information costs in equations y_1, y_2, y_4, and y_5; negotiation costs in equations y_1, y_2, and y_6; and monitoring costs in equations y_1, y_4, y_5, and y_6 (the latter with a negative sign).

The last three exogenous variables affecting participation are socio-demographic. The positive coefficient of Age (0.010) shows that more mature consumers are more likely to take part in a GAS. The negative coefficient related to gender (Sex: -0.205) shows that females are more likely to be motivated to join an AFC (GAS). Finally, the higher the percentage of natural food expense on total food expenditure the higher the probability of being motivated to join a GAS. Higher-order products and Open mindedness attributes do not affect participation even though they both play a role in the system of equations through the error terms.

4.6 Discussion and concluding remarks

The aim of this study was to investigate how, and to what extent, values and food-related lifestyles relate to consumer participation in a particular form of alternative food chain. In order to test the hypothesis of a link between such variables and participation in an AFC, we conducted an investigation of an Italian solidarity purchase group (GAS). A GAS shows all the characteristics of an AFC and represents a good example of consumer participation with strong ethical and environmental motivations (Schifani and Migliore, 2011). In all, 303 individuals were interviewed in Palermo (Sicily): 103 GAS participants, and 200 non-GAS participants, as a control group. Values, food-related lifestyles, transaction costs and socio-demographic variables were collected (from Jan to Feb 2012) and implemented in a model of a simultaneous system of equations solved by means of 3SLS and iGMM.

A possible profile of a "traditional" consumer seems to be with respect to the way he/she lives the "food experience" (suggested by the negative sign of Modern consumer FRL). Being traditionalist entails a certain degree of distance from concepts such as convenience and destructureed meals (snack *vs* meal). This is

evident with the positive attitude toward “the natural” that can be read as aversion to technology and “the modern”. A GAS member seems to be practical, looking at the price criterion and better taste of the products. She/he plans food shopping in advance and therefore does not mind the GAS making GAS members choose their weekly products at least four days in advance. Transaction costs do not affect participation directly but they do so through food-related lifestyles. Information, negotiation and monitoring costs, when statistically significant, always show a positive sign, except for monitoring costs in the “shopping script” equation. This result seems to confirm that TCs are relevant, and in the same way, to all kinds of food-related lifestyles. However, more must be done in this particular field to better understand in what way, and to what extent, TCs influence consumer behavior. Our results show, moreover, that various factors affect participation. The decision to participate in a GAS is not dictated by ideological, emotional or political factors: FRLs imply statistically significant utilitarian and rational behaviors (Rational Shopping and Shopping List both show a positive sign; Emotional involvement has a negative coefficient). More broadly, the results of this research highlight the existence of a causal system of consumer motivations. Consistently with psychology theory, values, food-related lifestyles, and behavior (participation) express dimensions that move toward a decreasing degree of abstraction.

The study is limited to consumer participation in a type of AFC that has developed in southern Italy where consumers have specific socio-demographic and economic characteristics. After all, the characteristics of AFC participants may vary across geographical locations and types. As the literature on the “prototypical characteristics” of consumers participating in AFC worldwide is still at an embryonic stage. Hence comparison and generalization with other consumer AFC participation experiences worldwide is premature. As worldwide evidence of AFC accrues and its participants’ characteristics are better defined, this paper may be viewed as a reference point for future exploration of the topic.

5. Are “good guys” more likely to participate in food community networks?

Abstract: New form of food production and distribution, defined Food Community Network, are concrete example of civic agriculture. The objective of civic agriculture is to defend social and environmental elements related to agricultural activities. Moreover, the distinctive traits of FCN are the high involvement of the different stakeholders. Consumers and participants, in fact, are involved in the different activities of the community and take part somehow to the production process. Participation representing an opportunity to recreate a place where community members can share and develop values and attitudes. This study wants to investigate deeply the figure of consumers participating to FCNs to understand if, and to what extent, there are differences in terms of universal (Schwartz) and proximal values (Food Related Lifestyles). Data was collected from one SPG and a group of consumers in conventional food outlets in Sicily (Southern Italy) and analysed with the Propensity Score Matching. This kind of studies occur, or are necessary, when randomized assignment of treated (SPG-participants) and non-treated (non-SPG participants) groups are infeasible, or when researchers need to assess differences between groups under particular setting of social behavioural environment.

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5.1 Introduction

Civic agriculture (CA) is a new model of food production and distribution that aims at preserving local producers and at the same time engaging with local communities (Lyson, 2000). Participating actively in the community together with the farmers individuals transform themselves form passive consumers to "active food citizen" (Kloppenburg et al. 1996). CA moves away from mainstream models of food production and distribution that are exclusively oriented to high-productivity, economies of scale and economic performance. On the contrary they emphasize the need for safeguarding and protecting social and environmental elements related to agricultural activities (De Lind, 2002). Moreover, CA is particularly keen in valorising, defending and promoting local farms in order to sustain their economic performances and make these businesses more resilient. In fact, local farms are often strongly integrated into the surrounding area and assume a positive role in strengthening and sustaining the social and economic conditions of the entire community (Goldschmidt, 1978; Tolbert et al., 1998; Ikerd, 2001; Shuman, 1998). Money earned by selling local products improving economic condition of the community because they circulate in the local community more than they do for products sold in the supermarket (Lyson, 2005). Besides using community elements for producing and distributing food, CA is alternative to mainstream models also in terms of support to local products (Baker, 2004), promoting niche products and heterogeneous quality attributes as a sign of authenticity and sustainability of local food productions.

The loss of local products is one of the major threats caused by mainstream models: on one hand local varieties and niche products do not fulfil quantity requirements from mainstream distribution organizations (i.e. large retailers); on the other hand local varieties and niche products offer too heterogeneous quality attributes to comply with private standard requirements. Example of civic agriculture has been recently defined as Food Community Networks (FCNs) (Pascucci, 2010). FCNs include Community Supported Agriculture (CSA),

Solidarity Purchase Group (SPG), Farmers' Market (FM) and Associations pour le *Maintien d'une Agriculture Paysanne* (AMAP). The distinctive trait of FCNs is the creation of a community dimension where consumers and producers share resources such as information, time and capital. In particular, food producers provide land, physical capital, knowledge, while consumers provide time, their knowledge and financial resources by participating directly in the organization (Pascucci et al., 2013). In return consumers receive leisure, high quality produces, while decreasing transaction costs (i.e. information, negotiation, and monitoring costs). In fact, consumers' participation and involvement makes them informed and aware of different productive stages.

The description of different model of FCNs is under investigation in the literature and many concepts start to become clear. What is still unclear is, however, if individuals (consumers), who join one of these new forms of distribution and consumption of food, own different value assets. Previous studies have showed that consumers' participation descends from ethical and moral motivations (Lusk and Briggeman, 2009). The social contest and the theoretical background of FCNs phenomenon is complex but is necessary to better understand consumer's' behaviours linked to the choice of became member of a FCN.

Civic agriculture and FCNs sustain a new approach to food consumption that is often defined as post-modernism. The concepts of Modernity and Late or Post Modernity have been two of the most frequently discussed issues in the humanities and social sciences. The reading of some of the more influential work (Harvey 1989; Giddens 1991; Baumann 1997; Lash 1999; Jameson 2002) gives the general picture that modernity can be described as a rationality that derives from the industrialist epoch. From a post-modern perspective, consumption is not only defined as transacting and exchanging products but as an important part of identity and everyday life. Consumption can no longer be reduced simply to the act of shopping (Warde, 1997), and attention has shifted from classical aspects such as product's prices. The dematerialization of products and the rise of their

symbolic and communicative value have transformed products into means of communication and have shifted competition onto the plane of messages. Hence the success of a product is now closely linked to what it communicates.

This is in line with what consumers and producers experience in FCNs where, for example, they frame food quality not only in terms of attributes such as taste and safety, but also in terms of more subjective attributes such as authenticity, fairness, social awareness. As argued by Dagevos (2005): "*Contemporary consumption has much to do with identity (express your true self, showing who you are), moral judgements (social awareness, value seeking), and well-being (self-empowerment, self-respect) […] new consumers' choices are largely determined by the aura, personality, image or message of products, producers or places of consumption*" Hence, the behaviour of the inhabitants of post- modern consumer society can no longer be understood by 'straight' and measurable segmentation criteria only. In order to meet the complexities of post-modern consumer behaviour, it is suggested that we need to improve our understanding of socio-cultural and socio-psychological influences on consumer choices. It seems that, a broader analysis that explores also the settings within which consumers are engaged in the practice of shopping for food, may offer further understandings of the relationship between food shopping and the inner part of consumers such us values and attitudes, called food related life-styles (Cembalo et al., 2013). At the bottom of this theory there is the interrelationships among values, attitudes, and behaviour (Inglehart, 1997; Rokeach, 1973; Schwartz, 1992; Brunsø and Grunert, 1995; Maio and Olson, 1994, 1995; Gold and Robbins, 1979). Values-attitude-behaviour (V-A-B) model (Homer and Kahle, 1988) express the concept of a flow from abstract values to mid-level attitudes, to behaviour (Booi-Chen Tan, 2011). Substantially it means that values influence attitudes and in turn they influence specific behaviour.

This paper wants to move forward the knowledge of the role of consumer's behaviour when it happens to analyse and compare personal values between

participants and non-participants to a FCN (Solidarity Purchase Group in our empirical study). Personal values will be tested using the Portrait Value Questionnaire (PVQ) proposed by Schwartz (1992, 1994), while food related lifestyles were collected as a mediator variable between attitude and actual choice of participation (Brunsø and Grunert, 1995).

The Solidarity Purchase Group phenomenon started developing in Italy at the end of the nineties. A SPG is a food community network in which the rules are regulated like in a club. SPG participant shares knowledge and their time in the organization. They are in contact with local producers, which supply the community and organize in advance products they want to buy. SPG participants consider quality as not only an intrinsic attribute of a good, but as the possibility to create emotions and significant experiences (Cembalo et al., 2012).

Our empirical strategy was to interview a group of GAS participants (GASp) and a counterfactual group of non-GAS participants (NGASp). The sample included 303 individuals. In our approach we analyse the differences in terms of values and food-related lifestyle between participants and non-GAS participants. Those variables were implemented in a Propensity Score Model. The innovation of this paper is that in previous research the relation it has been tested in various consumption and non consumption studies, for example in mall shopping and retail career choice (Shim et al., 1998; 1999) and e-shopping behaviour (Jawawardhena, 2004), but it has been never applied to test the participation of consumers in a new form of food chain.

As stated previously in this paragraph, an original research question is posed. The empirical study, however, uses the same dataset widely discussed in section 4. Definition of Schwartz values and Food Related Lifestyles are also shared with section 4. In the following sections 5.2 and 5.3 we only re-propose a very short abstract of the concepts reported previously.

5.2 Values and Food Related Life Style

Since the sixteen the value occupied a central position in social study (Hecther, 1993) and several authors faced the problem of the values' definition and use (Maslow's, 1970; Rokeach, 1973; Becker, 1976; Hetcher, 1993; Kahle, 1983; Veroff et al., 1981). One of the first authors who theorised values was Rockeach (1973). He sustained that values could be referred both to personal perception and to their social relevance. He defines values as *"...enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence"* Rokeach (1973 p. 5). However, at the beginning of the nineties Shalom H. Schwartz (1992) made an important turning point and defined ten values namely: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, universalism and benevolence. According to his point of view values are abstract guide in the human life and they are able to fulfil three essential needs: i) those of individuals as a biological organism; ii) requisites of social interaction; iii) and the survival and welfare needs of the group (Schwartz, 1992). He proposed two different approaches to evaluate human values the Schwartz Value Survey (SVS), and the Portrait Values Questionnaire (PVQ) (Schwartz et al., 2001). PVQ is the method we use in this paper because it seems to be easier to implement more reliable in the results obtained (Schwartz et al., 2001). Schwartz represented the 10 values in a circular spatial way organized in two pairs of different and opposite dimensions: Openness to change which includes Stimulation, Self-Direction, and Universalism versus Conservation (security, conformity and tradition); Self-transcendence which includes Benevolence and Universalism versus Self-enhancement with Hedonism, Achievement and Power. Values that are next in the circular structure are similar in terms of meaning.

However, the relation between values and behaviour seems to be indirect. The individual values cannot influence behaviour directly but through mediator variables. The intermediate level is played by attitudes or lifestyle related to food

consumption (Maio et al., 2003; Vinson et al., 1977; Brunsø and Grunert, 1995). The theory of Reasoned Action (Fishbein and Ajzen, 1975) discusses deeply the attitude-behaviour relationship and it sustains that a general attitude is weaker than specific attitudes in predicting specific behaviour. It means that the more specific and appropriate the attitude is the stronger is its correlation with behaviour (Fishbein and Ajzen, 1975). The Food Releated Life style proposed by Brunsø and Grunert (1995) defined as *"...the system of cognitive categories, scripts and their associations which relate a set of products to a set of values",* absolves perfectly this task because their object is the specific behaviour in food shopping. The inter-relationships between values and attitudes have been tested in different researches regarding cigarette consumption (Grube et al., 1984), political attitudes and behaviours (Baum, 1968; Levine, 1960), and mass media usage (Becker and Connor, 1981).

5.3 Questionnaire and data

The questionnaire was submitted in the city of Palermo, the state capital of Sicily, in the Southern Italy, from the 15th of January to the 10th of February. The sample was collected by 303 interviews: 103 to SPG participant and 200 to conventional consumers. SPG participants were asked to fill the questionnaire at the meeting place of the SPG while non-SPG participant were reached out of two big supermarkets (counterfactual sample of consumers). The choice to collect data in the same city clears the sample of the differences in terms of cultural, economic and social environments. At the end of the interview people were recompensed with a lottery ticket with a possible win ranged from 5 to 500,000 euro. Three different sections composed the questionnaire. The first one inspected the socio-demographic and economic characteristics of the interviewee. The second part examined values assets of consumers through Portrait Value Questionnaire. It is composed by 21 questions expressed as a description of an individual, for example *"It is important to him to be rich. He wants to have a lot of money and*

expansive things". The interviewed is asked to answer how much this statement is similar to his/her self in a scale ranging from 1 to 6, where 1 means "very similar to me" and 6 "very different to me". The third part of the questionnaire was destined to Food Related Life Style (FRL) proposed by Bruns and Grunert (1995). This questionnaire section was composed by 69 statements like the following: *"I only buy and eat food which are familiar to me"*. The interviewee was asked to express how much he/she was agree of disagree to this statement in a scale from 1 (totally disagree) to 7 (fully agree). The 69 scores are composed of 23 variables: health, price-quality ratio, novelty, organic, taste, freshness, self-fulfilment, security, social relationships, involvement in cooking, new way of consumption, convenience, family, planning, women tasks, product information, attention to advertisements, enjoyment, specialty shops, price criterion, shopping list, and social event. The number of variables was reduced with a Principal Component Analysis performed on the 23 variables. The results showed six latent variables after varimax rotation. First component was called "higher-order product attributes" because the factor loadings are health, price-quality ratio, organic, freshness, security, social relationship, family, importance of product information, and specialty shops. It describes a consumer who cares about the quality of food products looking for speciality shops where he/she finds high order products. Second component, called "Modern Consumer" is composed by factors like convenience (ready to use, pre-cooked, and frozen foods), attitude toward advertising, snack versus meal (snack and fast food vs. meal preparation), and social event and describes a consumer that does not like spending a lots of time on cooking and prefers to eat fast food and snacks. Third component was called "open-mindness" and the factors included were novelty, new way of experiencing food, women tasks, and meal as a social event. It describes a consumer that does like trying new food and new ways of food preparation and considers woman the only ones that have to spend time on cooking. Fourth component was "Emotional Involvement". It describes a consumer emotionally involved in food shopping and

preparation. Fifth component, called Rational shopping, has two factors loading: taste and price criterion. It represents a consumer who takes care about price criteria and not much about emotional aspects. The last component was named "shopping script". The principal factors loading are family, planning, and shopping list. The consumer described by this component is organizes in advance products he/she wants to buy and gives priority to family.

5.4 Propensity score model

The modelling approach implemented tried to estimate average differences, in values and FRLs, between participants and non-participants to a FCN (SPG). Data was collected in the framework of observational or quasi-experimental studies. Both the latter terms come from behavioural economics and non-statistically oriented literature, and are used interchangeably since they refer to the same purpose[11] (Shadish *et al.*, 2002). More explicitly, one of the main features of observational or quasi-experimental studies concerns treatment effects. An observational study shares, with a pure experimental one, the same purpose but, unlike an experiment, no method of experimental design is implemented to maintain a control group (Guo and Fraser, 2010). In this context, treated and control groups (counterfactual) may show large differences in terms of covariates yielding to biased estimates of treatment effects. This kind of studies occur, or are necessary, when randomized assignment of treated and non-treated groups are infeasible, unethical, or when researchers need to assess differences between groups under particular setting of social behavioural environment. The latter motivation is one of the main critiques of social experiments made by econometricians. Heckman and Smith (1995), for instance, argue that randomization is infeasible, or non desirable, when institutions and social environment are part of the decisional process and, therefore, are relevant when

[11] Another possible definition is "natural field experiment" which defines those experiments where the subjects do not know they are partecipating in an experiment (Harrison and List, 2004).

the purpose of the study is to design policy intervention following a behavioural economics analysis.

In particular, in social behavioural evaluations it becomes relevant to directly model the process of assigning study participants to treatment condition by using factors that influence participants' decisions regarding program participation (Heckman, 1979; Heckman and Smith, 1985). In other words, it is not desirable to search for randomization to create groups because is questionable the assumption that treated and non-treated participants share the same social-economics characteristics under non-treatment.

In observational studies, where the task is to evaluate treatment effects in a non-randomization/non-experimental approach, in order to reduce the multidimensional covariates to only one score, it is worth invoking the so called propensity score. Since the seminal work of Rosembaum and Rubin (1983) on propensity score analysis, this method is becoming more and more popular in observational studies. Propensity score approach has been implemented in many disciplines such as psychology (Jones *et al.*, 2004), medicine (Earle *et al.*, 2001; Gum *et al*., 2001), education (Morgan, 2001), social work (Barth *et al.*, 2007; Guo *et al.*, 2006; Weigensberg *et al.*, 2009), and social welfare studies (Heckman *et al.*, 1997; LaLonde, 1986; Michalopoulos *et al.*, 2004). When participation in a program, or treatment, or in a peculiar social setting, is not randomly assigned but it is stochastically depending on a number of variables observables in quasi-experimental studies, propensity score can be implemented as a measure of conditional probability of treatment participation conditional to the observed variables (covariates). Let x be the observable variables, and $p(x)$ the conditional probability of treatment participation (or propensity score):

$$p(x) = \Pr[D = 1|X = x] \qquad (1)$$

Given D_i and x_i, the propensity score measure can be calculated using any parametric or semiparametric methods by implementing, as we did in our study, a logit regression (Cameron and Trivedi, 2005). One of the most relevant

assumption in evaluation a program participation (or a participation to a FCN as it is in our case) is the balancing condition:

$$D \perp x|p(x) \quad (2)$$

A more intuitive way to express the balancing condition is looking at individuals' side. Let define y_1 and y_0 respectively the outcome for the treated and control group, $p(x)$ the propensity score and N_T the number of individuals "treated" in the sample (FCN participants in our case study). Then, individuals with the same propensity score show a substantial equivalence in terms of the x vector as if they were randomly selected to treatment. A useful implication found by Rosembaum and Rubin (1983) about the conditional independence given $p(x)$ is:

$$y_0, y_1 \perp D|x \Rightarrow y_0, y_1 \perp D|p(x). \quad (3)$$

the direct implication of equation (3) is that the assumption of conditional independence given x implies conditional independence given $p(x)$, or independence of y_0, y_1, and D given $p(x)$[12]. The intuition behind this is that, since $p(x)$ is a function, though peculiar, of x, the conditional independence given $p(x)$ is implied for the same given x. However, conditioning on x means eliminating correlation between D and x, as well as between D and x when conditioning on the propensity score $p(x)$. In this way we can get a regression where the unknown propensity score is substituted by a sample estimate of $p(x)$:

$$\begin{aligned} y &= x'\beta + \alpha p(x) + up(x) + u \\ &= x'\beta + \alpha\hat{p}(x) + (u + \alpha(p(x) - \hat{p}(x)). \end{aligned} \quad (4)$$

Once a propensity score estimation is computed, next step is matching treated to a control (counterfactual) group of participants based on the estimated propensity score[13]. The intuition behind matching is to generate a new data sample built by only those cases that share similar likelihood of participating to a FCN. Such likelihood is the propensity score. The most common matching algorithm is the

[12] For a formal demonstration please see Rosembaum and Rubin (1983)

[13] Alternatively it is possible to skip matching analysing data after propensity score in a different way depending on the research question and goal (Guo and Fraser, 2010). In our case matching was what we were looking for.

"greedy matching". There are many methods to reach a greedy matching: mahalanobis metric matching with or without including propensity score, nearest neighbour matching, caliper matching; nearest neighbour matching with caliper, just to name the most popular ones (D'Agostino, 1998; Smith and Todd, 2005; Guo and Fraser, 2010). The methods implemented in our paper follows those implemented in Dehejia and Wahba (1999; 2002) that will be described later. The core idea, however, starts from the two widely used measure of treatment effects that can be calculated as treatment evaluation: Average Treatment Effect (ATE), and Average Treatment Effect on the Treated (ATET). In the specific case of our study the appropriate measure is the ATET. In fact, ATE measures treatment effect over all individuals. It is of some relevance when the treatment is believed to be universal over the whole population considering the gain from treatment, though hypothetical, applicable to any member of the population randomly selected. Since we are considering a group of people that have already decided to participate to a FCN (SPG), the ATET is a more sounded measure which is relevant when the aim is to evaluate the differences, or average gain, from treatment (participation to a FCN) for the treated (participants) (Heckman and Vytlacil, 2007). A general specification of ATET is defined as:

$$\text{ATET} = \Delta^M = \frac{1}{N^T}\sum_{i\in\{D=1\}}\left[y_{1,i} - \sum_j w(i,j)y_{0,j}\right] \qquad (5)$$

where $A_j(x) = \{j|x_j \in c(x_i)\}$ denotes the set of the comparison group of the treated case i with characteristics x_i, and where $c(x_i)$ is the characteristics neighbourhood of x_i. N_T is the total number of cases, and $w(i,j)$ denotes the weight given to the jth case when compared with the ith treated case, so that $\sum_j w(i,j) = 1$, but in the equation it ranges from $0<w(i,j)\leq 1$. $\{D = 1\}$ is the set of treated individuals, while j is an element of the set of matched comparison units. Matching estimators differs by choosing different $w(i,j)$. The calculation is not direct because only a part of the equation has an observed component. In other words, given that only y_1 or y_0 is observable for each observation, unless

assignment into the treatment group was random, generally the difference in average, say τ, will not be equal to $\tau = \bar{y}_1 - \bar{y}_0$. This is one of the main difficulties when matching has to be computed. In practice, matching could be done comparing treated and non-treated individuals with the same value of *x*. If several regressors are involved, however, matching would be not possible since regressors (*x*) take a number of different values. A solution is, then, to find a vector of covariates that allows to match on the propensity score, defined earlier as the conditional probability of treatment $p(x) = \Pr[D = 1|X = x]$. In our study, following Dehejia and Wahba (1999; 2002), we estimated a logit model on the probability of participating in a FCN (SPG):

$$\Pr[GAS_i = 1|x_i] = \Lambda(x_i'\beta), \quad i = 1, \dots, 303 \qquad (6)$$

where $\Lambda(z = x_i'\beta) = e^z/(1 + e^z)$, while the regressors are some individuals' socio characteristics (age, number of household workers, education, gender, monthly net income per household, share of food expenditure on total household monthly income).

From the general specification of the ATET (eq. 5), we implemented some Dehejia and Wahba (1999; 2002) suggested methods: stratification matching; kernel matching; radius matching estimator[14]. Since these matching methods involve trade offs between the number of matches and the quality of matching, and none is clearly superior to the others, we choose to report the radius matching method. In order to verify which variables showed a significant difference between treated and control groups, a t-test was performed and so reported in the tables. For the wider diversification of results we decided to describe only results from radius matching.

In radius matching the set $A_i\big(p(x)\big) = \{p_j | \|p_i - p_j\| < r\}$ is based on propensity scores. This means that all control cases with estimated propensity scores falling

[14] Please see Dehejia and Wahba (2002), Cameron and Trivedi (2005), and Chintrakarn (2008) for technical notes.

within radius *r* are matched to the *i-th* treated case. ATET with radius matching can be expressed in terms of $p(x)$, assuming that the overlapping condition $0 < p(x) < 1$ holds (Dehejia, 1997):

$$ATET = E\left[\frac{(D-p(x))y}{Pr[D=1](1-p(x))}\right] \quad (7)$$

Last two columns of the tables we are goin to present in next section are benchmark and % of benchmark. The benchmark is calculated by regressing each of the transaction costs scores on a constant and on the dichotomous variable SPG. The estimated parameter of the constant is the benchmark value (Dehejia and Wahba, 2002). Once obtained, it is possible to calculate the percentage of the ATET compared with the benchmark. It gives an index of robustness of ATET estimates across specifications that can be evaluated in terms of the ratio of ATET and the benchmark estimate, given in the last column of the table.

5.5 Results

A practical issue to face in choosing a matching algorithm based on propensity scores is to ensure the balancing condition (eq. 2). Dehejia and Wahba (2002, p. 161) suggest an algorithm, the so called parsimonious logit model, that allows to estimate $p(x)$ trough a stratification of observations within stratums where treated and non-treated units are close. Table 1 shows results of the logit estimation where only variables statistically significant at least at 10% where kept in the model to ensure the best model goodness of fit[15]. Control variables implemented in the logit models are some socio-demographics, namely: age, household monthly net income, number of workers in a household, education (categorical), percentage of monthly income allocated to food purchasing, and household member with a age below 15.

[15] All the elaborations were done by using STATA 12.

Within each stratum the similarity of means are tested for each covariate. The propensity score calculation is so restricted to the common stratus, or region, by testing for the balancing property. It is done by using only those observations that show a propensity scores laying in the intersection of the supports of the propensity score of the treated and the non-treated units. As a result, only a portion of the original sample is taken into account. Table 2 shows the distribution of propensity score within the stratus computed.

Table 1 – Estimation of the propensity score

Logistic regression	Number of obs	210
	LR chi2(6)	63.21
	Prob > chi2	0.00
Log likelihood = -113.91707	Pseudo R2	0.2172

Dep. Var: SPG participation (1 if participates)

Variables	Coef.	Std. Err.	z	P>|z|
Age	0.039	0.010	3.89	0.000
Household income	0.001	0.000	2.20	0.027
Number of HH workers	-0.160	0.086	-1.85	0.064
Education	0.583	0.127	4.60	0.000
Income allocated to food	-0.023	0.009	-2.50	0.012
HH component with age under 15	0.170	0.120	1.42	0.155
Constant	-3.428	0.670	-5.12	0.000

*Level of significance: * 10%; ** 5%; *** 1%*
The region of common support is [.04533766, .99980076]

From the general specification of the ATET (eq. 5), we implemented a Dehejia and Wahba (1999; 2002) suggested methods: radius matching estimator[16]. As stated earlier, in order to verify which variable showed a significant difference between treated and control groups, a t-test was performed and so reported in the tables.

[16] Please see Dehejia and Wahba (2002), Cameron and Trivedi (2005), and Chintrakarn (2008) for technical notes.

Our empirical approach was to estimate the ATET both for the Schwartz values and for the FRLs. As for portrait values (PVs), if results show differences between participants and non-participants, then we can assume that people who participate to a FCN (SPG in our specific case study) are different in terms of personal/individual value asset. This assumption comes from the presumption that Schwartz values, or enduring beliefs, are not modified by any actual behaviour (Schwartz, 1994). Then no endogeneity issue is expected by results concerning differences in PVs. On the contrary, FRLs are, by definition, "proximal" values that can be influenced by actual behaviour. For this reason, differences in the ATET estimation can reveal the effect of participating in a FCN on the FRL.

Table 2 - Inferior bound, number of treated and number of controls for each block*

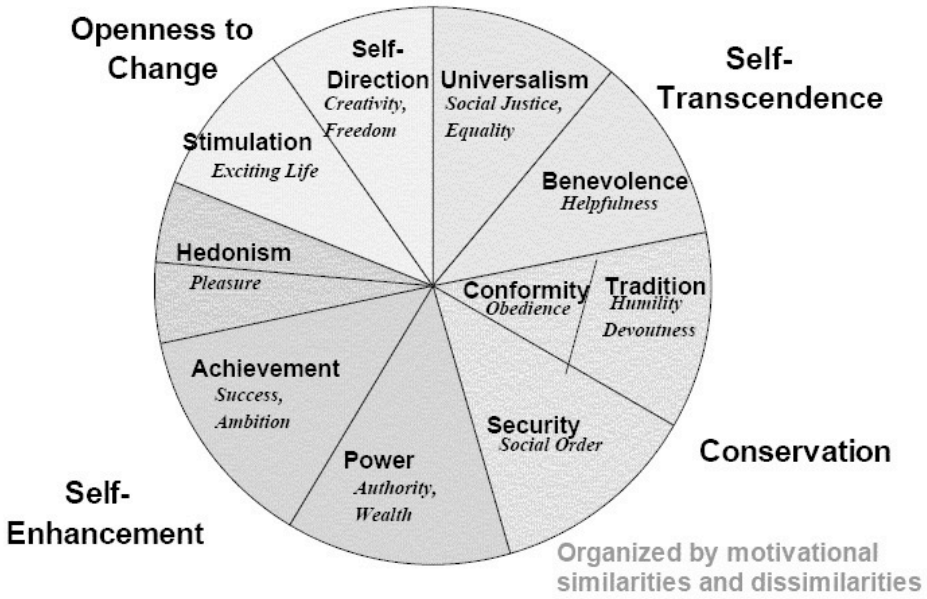
Inferiorof block of pscore	SPG participants		Total
	control	treated	
0.128	30	6	36
0.2	40	17	57
0.4	20	21	41
0.6	14	27	41
0.8	2	32	34
Total	106	103	209

** The observations number go from 303 to 209*

To illustrate the results it is necessary to underline the meaning of the PVs as proposed by its author Schwartz (1994). Portrait values are meant as distributed in a circular frame that represents the relation of similarity or opposition among the ten values. Values belong to two orthogonal and opposite dimensions (Fig. 1): *self-transcendence* with universalism and benevolence values opposed to *self enhancement* with achievement and power values; and *openness to change* with self-direction, stimulation and hedonism values opposed to *conservation* that is expressed by conformity, tradition and security values. The closer any two values

in the circular structure the more similar are their sense or meaning. Our hypothesis is that SPG participants show higher degree of self-trascendency with a statistical significant higher estimated ATET. This case implicitly assumes a lower estimated ATET for self-enhancement values.

Figure 1 – Theoretical model of relations among ten motivational types of values



Source: Schwartz, 1994

Table 3 describes estimates of the ATET (Values) with radius matching. Benevolence and Universalism are statistically significance with negative sign that means a major presence of them in SPG participants[17]. This is in line with what we expected. The choice to participate in a SPG is also dictated by deep ideological and emotional nature. Benevolence and universalism both emphasize the interest in preserving, protecting and sustaining welfare of other people, other

[17] It is worth reminding that portrait value scores are collected by means of a Likert scale ranging from 1 to 6 where 1 means "Very much like me" and 6 "Not like me at all".

than him/herself. Moreover, achievement and power show a positive sign indicating that they are less pronounced for SPG participants.

Table 3 – Estimate of ATET (Values) with radius matching (radius: 0.6)

Values	ATET		Part #	N-Part #	Benchmark	% of Bench
Benevolence	-0.258	*	103	106	1.77	-14.57
Universalism	-0.334	**	103	106	1.82	-18.34
Selfdirection	-0.234		103	106	2.13	-10.98
Stimulation	0.166		103	106	3.09	5.37
Hedonism	0.171		103	106	2.91	5.87
Achievment	0.944	***	103	106	3.05	30.90
Power	0.732	***	103	106	3.58	20.47
Security	0.352	*	103	106	2.29	15.40
Conformity	0.335	**	103	106	2.69	12.45
Tradition	0.502	***	103	106	2.41	20.86

*Level of significance: * 10%; ** 5%; *** 1%; Analytical standard errors;*
Part: participants to SPG; N-Part: non participants to SPG

This result is coherent also with Portraits Values representation (Fig. 1), which indicates self-enhancement dimension with achievement and power opposite to self-transcendence dimension (universalism and benevolence). The positive sign of achievement and power underline that SPG participant objective is not to control and dominate over other people and resources. Self direction, stimulation, and hedonism ATET values are not statistically significant meaning that no differences are accountable between SPG participants and non-participants. The conservation dimension, namely security, conformity and tradition, resulted to be statistically significant and higher in non-participants. This result depicts individuals, that decide to participate in a form of FCN, anti-conformist, not keen in following traditional ways of consumption and that are not seeking the security of traditional channels of distribution when it comes to food. The last two columns, reporting the benchmark value and the percentage of the ATET estimation on the benchmark, show the magnitude (in absolute and percentage

terms) of the difference between the two groups. Beside the numeric differences among the Values, the ATET, statistically significant, are quite relevant ranging from 10.98 (in absolute term) of Selfdirection to 30.90 of Achievement.

The same procedure of ATET estimation was followed for food related lifestyles. As stated previously, FRLs are considered as values proximal to actual behaviour that, in this case, is participation in a SPG. Results are reported in table 4.

Table 4 – Estimate of ATET (FRLs) with radius matching (radius: 0.6)

FRLs	ATET		Part. #	N-Part. #	Benchmark	% of Bench
Health	0.989	***	103	106	5.75	17.19
Price quality ratio	0.144		103	106	5.43	2.65
Novelty	1.016	***	103	106	4.99	20.35
Organic	1.236	***	103	106	4.59	26.94
Taste	0.238		103	106	5.56	4.28
Freshness	0.701	***	103	106	6.03	11.63
Self-fulfillment	-0.090		103	106	5.03	-1.79
Security	-0.089		103	106	4.40	-2.02
Social relationship	0.378	*	103	106	5.48	6.90
Involvement in cooking	-0.324		103	106	4.71	-6.88
New way	0.477	**	103	106	4.90	9.73
Convenience	-0.816	***	103	106	2.68	-30.42
Family	0.224		103	106	4.37	5.13
Planning	0.007		103	106	3.90	0.18
Women task	-1.022	***	103	106	3.28	-31.17
Product information	0.392	*	103	106	4.76	8.23
Attention to adv	-0.547	**	103	106	3.19	-17.16
Enjoyment	-0.192		103	106	5.00	-3.84
Specialty shops	0.190		103	106	4.64	4.09
Price criterion	-0.929	***	103	106	4.86	-19.10
Shopping list	0.282		103	106	4.79	5.89
Snack vs meal	-0.193		103	106	3.25	-5.93
Social event	-0.070		103	106	4.27	-1.64

*Level of significance: * 10%; ** 5%; *** 1%; Analytical standard errors;*

Among the statistically significant ATET estimated values some are positive (higher score in SPG participants: health, novelty, organic, freshness, social relationship, new way of consumption, product information) and some others are negative (meaning a higher average score of non-participants: convenience, and attention to advertisements). Results allow to identify an "average" SPG participant that, when compared with the non-participant counterpart, show a higher attention to lifestyles related to food such as healthy food, organic, with a novelty characteristic, seeking for freshness, but where the social relationships are relevant as well as looking for new way of consumption and with a particular care about product information. Non-participants resulted to have a profile of food related lifestyle relate to components related to a pragmatic style of consumption where convenience and advertisements are important part of the food related processes.

As for the benchmarks, among the ATET statistically significant, they are relevant ranging from 6.90 of Social Relationship to 31.17 (in absolute terms) of Women Task.

5.6 Concluding remarks

New forms of distribution and consumption of food, called FCN, belong to particular agriculture models, namely civic agriculture (CA). In CA organization consumers are better described as "active food citizens" (Kloppenburg et al. 1996) because of their active involvement in the organization and distribution of food products and with the common objective of preserving and protecting local farms, landscape and nature in general. The aim of this paper is to show an identikit of the participants to a real case of SPG. In particular, the scope is to compare participants and non-participants in terms of universal values and Food Related Lifestyles, under the hypothesis that values influence the choice to participate. The dataset includes 303 individuals interviewed in Palermo (Sicily). It is composed by 103 SPG participants, and 200 non-participants. The questionnaire

of Values, Food Related Lifestyle, and socio-demographic variables were collected from Jan to Feb 2012 and implemented in a model of a propensity score matching. This statistical approach allows overcoming a potential problem of non-randomness of the sample and makes possible comparing accurately the two sub-samples (participants and non-participants).

Results about values assets show that the choice to participate in a SPG is especially dictated by deep ideological and emotional nature. The high presence of benevolence and universalism values mean that they influenced the participation to SPG. They both emphasize the interest in preserving, protecting and sustaining welfare of other people, in line with the fundamental scope of the civic agriculture. Concretely, the motivation of participating is to be involved with the SPG organization and get high quality food product sustaining local and small farms. SPG members like to feel themselves as important component of community and want to share time and labour with other members for the well-being of the SPG community.

Moreover, the FRL results allow identifying a more detailed profile of participant. SPG members seem to be very careful about healthiness of the food products with an inclination to organic product. He/she takes care about some classic aspect of food such as freshness, quality, but considers the purchase of food as an occasion to be involved in social relationships. This is in line with the organization structure of the SPG because SPG members like to spend time with other members not only to organize the different tasks for the community but also to share information and opinions. Another important aspect is that SPG participants take into consideration product information. This seems an important aspect usually considered both from conventional and non-conventional consumers. Labels and certifications represent a source of information of the products irrespective of the channels throw which people buy food products. In the specific case of SPG, on the other hand, members have the possibility to be directly in touch with producers.

SPG participants organize in advance what they want to by from local producers, and in this way they get all the necessary information to know totally product features and the way of production.

6. Summary of main findings

This study empirically investigates the domain of Alternative Food Chains in the form of Food Community Network (FCN). The aim of this research is to understand how these new forms of network are designed in terms of organizational structure, and to analyse consumers' motivations for participating. Results are meant to be used to better design interventions to sustain local farms and communities, niche products and eventually support innovative entrepreneurial attitudes. The study implemented various conceptual frameworks and statistical/econometric analysis.

In chapter 2 the first approach to describe main organizational features of FCN was presented. The study is based on the observation of an extensive set of empirical examples worldwide, mainly using internet-based sources and literature review. Competitive advantages for FCNs can derive from specific issues such as a better risk sharing, decision-making, quality checking, and resource pooling. Risk sharing refers to the ability of reducing transaction cost due to the uncertainty of credence food production. According to our investigation the main tools used to lower uncertainty is the use of a formalized membership for both farmers and consumers based on a fixed fee at the beginning of the production season. When analysing decision making, our empirical evidences seem to highlight that the decision-making is substantially limited to some general issues and it occurs during meeting and assembles. About quality check we have investigated two alternative system of quality: the presence of formalized certification and the presence of certification based on consumers participation. As expected, formal certification is limited while extensive participation is used. Finally, it was considered in detail how resources are pooled and shared within FCNs in terms of knowledge, time, capital and labour. In all cases we examined the case when resources sharing are present it is always based on voluntary

principles. The use of trust can be considered as the main component at the base of FCNs in one of the most important asset, which can make FCN potentially even more competitive than mainstream models. However, because such an extensive use of trust mainly occurs in the very beginning of relationship between consumers and farmers it can also work as an entry barrier for participant that need to develop trust in a longer time span. We think these results can explain why FCNs are still used mainly by strongly motivated and involved consumers who share common values and attitudes.

Chapter 3 investigates typologies of a peculiar FCN organization particularly common in North America and UK: Community Supported Agriculture (CSA). The study tried to identify common features through the analysis of 95 case studies. We used information derived from variables related to both the new institutional economics approach, such as pooling and contracting, and the organizational science approach, such as market-like, bureaucratic, communitarian and democratic elements. Based on these elements through a K-means cluster analysis we found five main typologies: the first typology is what we have defines as "bureaucrats" to indicate that the governance mechanisms are mainly based on formalized rules. The decision-making is centralized and still remains in the area of power of the farmers. The hard participants are the ones belonging to group 2. In this group all indexes have high values and indicate a strong and extended participations of members in all activities and governance issues of the CSA. Group 3 called "democrats" is more based on democratic mechanisms than group 2 and more based on sharing resources. Group 4 is constituted by soft participants, to indicate that they are not that much involved in the CSA. Finally group 5, called "relational" is mainly based on communitarian elements with a strong combination of both pooling and contracting issues.

Chapter 4 is the first one where we started to focalize our attention on consumer's side. It presents a detailed investigation on the participation in a one of the SPG operating in Sicily, in Southern Italy. Our empirical strategy was to interview a

target group of SPG participants (SPGp) and a counterfactual group of non-SPG participants (NSPGp). The overall sample included 303 individuals. The objective of this study is to analyse the impact of transaction costs, values, and food related lifestyles on participation and consumer's features. The hierarchical causal relationships among Values, FRLs, and Behaviour (participation) are explicitly modelled. Those variables were implemented in a simultaneous system of equations model. Our results indicate various factors affecting the participation profiling SPG participants. SPG (intended as an example of FCN) participation seems to be enhanced by a mixture of motivations. The probability of joining a SPG increases with those individuals that look at the convenience (price/quality ratio) and at the quality of the products. A SPG member seems to be practical, looking at the price criterion and better taste of the products. She/he programs in advance the grocery and, therefore does not mind that the GAS organization imposes GAS members to choose their weekly products at least four days in advance. Nevertheless, open mindedness and interest in searching for new ways of consumption seem to be the main consumer profiles that increase the probability of joining an FCN.

The analysis with transaction costs generated interesting results. In fact, according to the empirical investigation they do not affect participation directly but they do throughout food related lifestyles. Information, negotiation and monitoring costs, when statistically significant, show always a positive sign, except for monitoring costs in the "shopping script" equation. This result seems to affirm that TCs are relevant, and in the same way, for all kind of food related lifestyles. Based on these results, policy implications could be drawn to promote public support of SPG and food community networks both in Italian and European contexts.

Chapter 5 wants to analyse the differences in terms of values and Food Related Lifestyle between SPG-participants and non SPG-participants. The econometric model is the Propensity Score Matching. The modelling approach implemented tried to estimate values and FRL of SPG participant. This kind of studies occur, or

are necessary, like in our case, when randomized assignment of treated and non-treated groups (participant and non-participant) are infeasible, unethical, or when researchers need to assess differences between groups under particular setting of social behavioural environment. Our result presents the figure of SPG consumer. He/she pays attention to some important food aspects such as freshness, freshness, quality, but considers the creation of social relationships an important consequence of food purchase. Moreover the inner asset of his/her personality is characterized of high level of benevolence and protection regard ambient and welfare of local producers and products.

Final remark

Community Supported Agriculture, Solidarity Purchase Group, Farmers market, called FCNs (Pascucci et al., 2010), are all examples of civic agriculture. Civic agriculture has the mission of assisting small local farms and the community development. Moreover, it promotes a more sustainable agriculture and food state (Lyson, T., 2004). Civic agriculture has promoted regionally based economic activity and it has the primary scope of improving farmer income and revitalizing rural communities (DeLind, 2002). In this way it is possible to preserve the local varieties that are not suitable for the mainstream models of food production and distribution. The sustainability of ecosystem may depend on their biological diversity (Tilman, D., Wedin, D., Knops, J., 1996).

The aim of this research is to disclose different aspects of FCN in terms of organizational structure and motivation of consumer's participation. It could be interesting to understand more deeply in which terms the development of these new form of network between farmers and consumers and the community influence essentially the sustainability of the lands and the area where FCN developed. If this point could be better understood, then they can be used to better design policies to improve this aspect.

Moreover, one innovative aspect that came out during this research is the possibility to see the participation in FCN like a new form of entrepreneurial behaviour during periods of economic crisis to procure fresh, healthy and sustainable food at a reasonable price.

As argued by DeLind, (2002) "*as long as these alternative food network are based on consumers-producers model, participants or members will continue to consider themselves as entrepreneurs first and as community builders second*". This highlight could be the starting point for future research.

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Appendix – the questionnaire

UNIVERSITY OF PALERMO, ITALY - UNIVERSITY OF NAPLES FEDERICO II, ITALY - WAGENINGEN UNIVERSITY, THE NETHERLANDS

Dear Sir/Madam,
The University of Palermo, in collaboration with the University of Naples and Wageningen University (the Netherlands), is carrying out research into food buying habits. For this purpose we would ask you to devote about 20 minutes of your time to fill in the four-part questionnaire below.
There are no right or wrong answers, so please answer the questions as sincerely as possible: what counts for us is your actual habits.
The questionnaire is strictly anonymous. You do not need to put your name on this form.
We would also be grateful if you could answer the questions in the order in which they've been presented.

SECTION 1 – It is useful for our research to have some general information on the interviewee. We would therefore like to ask you some questions whose answers are essential for our statistical model. Also in this case we would ask you to reply with the utmost sincerity.

Age _____ years

Sex Male ☐ Female ☐

How many people in your household work?

- ☐ Only one person
- ☐ 2 people
- ☐ 3 people
- ☐ More than 3 people

Including yourself, how many people are there in your household?

Under 5 years old	
Between 5 and 15	
Between 16 and 60	
Over 60 years old	

What is your employment condition?

- ☐ Office employee
- ☐ Entrepreneur

- □ Manual worker
- □ Teacher
- □ Self-employed
- □ Retailer
- □ Homemaker
- □ Retired
- □ Unemployed
- □ Student
- □ Other _____

What qualification do you have?

- □ Primary school certificate
- □ Middle school certificate
- □ High school diploma
- □ Degree
- □ Postgraduate (Masters – PhD)

What is the net monthly income of your household? €_____

What percentage of household income is spent on food products? _____%

Which of the following consumer organizations do you know? (you can tick more than one box)

- □ Solidarity purchase groups (GASs)
- □ Family garden (*Orto familiare*)
- □ Community Supported Agriculture
- □ Pick it yourself

Have you ever taken part in a GAS?

☐ YES ☐ NO

If you answered NO to the last question, say why? (you can tick more than one box)

- □ I don't know what it is
- □ I would like to take part but there are none in my town/city
- □ I would like to take part but don't know how to make contact
- □ I have no time to take part in one
- □ I know about them but find their prices are higher than elsewhere

□ I know about them but the organization does not match my expectations

As the last question in Section 1, please answer the following extremely carefully. Split, percentagewise, your food shopping into the following categories (make reference to your most frequent food consumption):

- Organic produce, produce from integrated farming, certificates (e.g. PDO, PGI), other natural products _____%
- Frozen products, canned products (e.g. tomatoes, fruit), pre-packed salad, food preserved in oil, etc. _____%
- Health foods with added vitamins and/or omega3, meats irradiated for storage, products in packaging containing nanotechnologies, etc. _____%
- Other _____%

Total 100 %

SECTION 2 -In this section we briefly describe some people. Please read each description and think about how much each person is or is not like you. Tick the box to the right that shows how much the person is like you. The scale has this meaning:: 1. “VERY MUCH LIKE ME”; 2. “LIKE ME”; 3. “SOME-WHAT LIKE ME”; 4. “ALITTLE LIKE ME”; 5. “NOT LIKE ME”; 6. “NOT LIKE ME AT ALL”

Description of people	To wich extent this person is like you?					
	Very much like me	Like me	Some-what like me	A little like me	Not like me	Not like me at all
Thinking up new ideas and being creative is important to him/her. He/she likes to do things in his own original way.	1	2	3	4	5	6
It is important to him/her to be rich. He/she wants to have a lot of money and expensive things.	1	2	3	4	5	6
He/she thinks it is important that every person in the world should be treated equally. He/she believes everyone should have equal opportunities in life.	1	2	3	4	5	6
It is important to him show his/her abilities. He/she wants people to admire what he/she does.	1	2	3	4	5	6
It is important to him/her to live in secure surroundings. He avoids anything that might endager his/her safety.	1	2	3	4	5	6
He/she likes surprises and is always looking for new things to do. He/she thinks it is important to do lots of different things in life.	1	2	3	4	5	6
He/she believes that people should do what they're told. He/she thinks people should follow rules at all time, even when no-one is watching	1	2	3	4	5	6
It is important to him/her to listen to people who are different from him/her. Even when he/she disagrees with them, he/she still wants to understand them.	1	2	3	4	5	6
It is important to him/her to be humble and modest. He/she tries not to draw attention to him/herself.	1	2	3	4	5	6
Having a good time is important to him/her. He/she likes to "spoil" him/herself.	1	2	3	4	5	6
It is important to him/her to make his/her own decision about what he/she does. He/she likes to be free and not depend on others.	1	2	3	4	5	6
It is very important to him/her to help the people around him/her. He/she wants to care for their well-being	1	2	3	4	5	6
Being very successful is important to him/her. He/she hopes people will recognise his/her achievements.	1	2	3	4	5	6
It is important to him/her that the government ensures his/her safety against all threats. He/she wants the state to be strong so he/she can defend its citizens.	1	2	3	4	5	6
He/she looks for adventures and likes to take risks. He/she wants to have an exciting life.	1	2	3	4	5	6
It is important to him/her always to behave properly. He/she wants to avoid doing anything people would say is wrong	1	2	3	4	5	6
It is important to him/her to get respect from others. He/she wants people to do what he/she says.	1	2	3	4	5	6
It is important to him/her to be loyal to his/her friends. He/she wants to devote him/herself to people close to him/her.	1	2	3	4	5	6
He/she strongly believes that people should care for nature. Looking after the enviroment is important to him/her	1	2	3	4	5	6
Tradition is important to him/her. He/she tries to follow the customs handed down by his religion or his/her family	1	2	3	4	5	6
He/she seeks every chance he/she can to have fun. It is important to him/her to do things that give him/her pleasure.	1	2	3	4	5	6

Section 3: You are going to see several statements related to food. Can you please indicate for each statement to which extent you agree with it? You can answer with a number from 1 to 7, where 1 means "I totally disagree" and 7 means "I totally agree". You can shade your answer with number in between.

Statements	WHICH EXTENT YOU AGREE WITH THESE STATEMEN						
	Totally disagree	.....	.....	.....	.....	.....	Totally agree
To me product information is of high importance. I need to know what products contains.	1	2	3	4	5	6	7
The kids or other members of the family always help in the kitchen; for example they peel the potatoes and cut the vegetables	1	2	3	4	5	6	7
I only buy and eat food which are familiar to me	1	2	3	4	5	6	7
Shopping for food does not interest me at all	1	2	3	4	5	6	7
I find taste in food products important	1	2	3	4	5	6	7
Usually i do not decide what to buy until i am in the shop	1	2	3	4	5	6	7
It is important for me to know that I get quality for all my money	1	2	3	4	5	6	7
Well-known recipes are indeed the best	1	2	3	4	5	6	7
I make a point of using natural or ecological food products	1	2	3	4	5	6	7
I eat before I get hungry, which means that I am never hungry at meal times	1	2	3	4	5	6	7
I compare product information labels to decide which brand to buy	1	2	3	4	5	6	7
I like buying food products in speciality stores where I can get expert advice	1	2	3	4	5	6	7
I compare prices between product variants in order to get the best value for money	1	2	3	4	5	6	7
We use a lot of ready-to-eat foods in our household	1	2	3	4	5	6	7
I notice when products I buy regularly change in price	1	2	3	4	5	6	7
I always buy organically grown food products if I have the opportunity	1	2	3	4	5	6	7
Dining with friends is an important part of my social life	1	2	3	4	5	6	7
I don't like spending too much time on cooking	1	2	3	4	5	6	7
I dislike everything that might change my eating habits	1	2	3	4	5	6	7
I have more confidence in food products that I have seen advertised than in unadvertised products	1	2	3	4	5	6	7
When cooking, I first and foremost consider taste	1	2	3	4	5	6	7
I prefere fresh product to canned or frozen products.	1	2	3	4	5	6	7
In our house, nibbling has taken over and replaced set eating hours	1	2	3	4	5	6	7
I look for ways to prepare unusual meals	1	2	3	4	5	6	7
I do not see any reason to shop in speciality food stores	1	2	3	4	5	6	7
It is the woman’s responsibility to keep the family healthy by serving a nutritious diet	1	2	3	4	5	6	7
Going out for dinner is a regular part of our eating habits	1	2	3	4	5	6	7
I look for ads in the newspaper for store specials and plan to take advantage of them when I go shopping	1	2	3	4	5	6	7
I compare labels to select the most nutritious food	1	2	3	4	5	6	7
I don't mind paying a premium for ecological products	1	2	3	4	5	6	7
I always plan what we are going to eat a couple of days in advance	1	2	3	4	5	6	7
Nowadays the responsibility for shopping and cooking ought to lie just as much with the husband as with the wife	1	2	3	4	5	6	7
A familiar dish gives me a sense of security	1	2	3	4	5	6	7
My family helps with other mealtime chores, such as setting the table and doing the dishes	1	2	3	4	5	6	7
To me the naturalness of the food that I buy is an important quality	1	2	3	4	5	6	7

Section 3: You are going to see several statements related to food. Can you please indicate for each statement to which extent you agree with it? You can answer with a number from 1 to 7, where 1 means "I totally disagree" and 7 means "I totally agree". You can shade your answer with number in between.

Statements	/HICH EXTENT YOU AGREE WITH THESE STATEME						
	Totally disagree	.....	.....	.....	.....	.....	Totally agree
I like to know what I am buying, so I often ask questions in stores where I shop for food	1	2	3	4	5	6	7
Recipes and articles on food from other culinary traditions make me experiment in the kitchen	1	2	3	4	5	6	7
Over a meal one may have a lovely chat	1	2	3	4	5	6	7
It is important to me that food products are fresh	1	2	3	4	5	6	7
I love to try recipes from foreign countries	1	2	3	4	5	6	7
I always check prices, even on small items	1	2	3	4	5	6	7
I enjoy going to restaurants with my family and friends	1	2	3	4	5	6	7
I like to have ample time in the kitchen	1	2	3	4	5	6	7
I am influenced by what people say about a food product	1	2	3	4	5	6	7
We often get together with friends to enjoy an easy-to-cook, casual dinner	1	2	3	4	5	6	7
Shopping for food is like a game to me	1	2	3	4	5	6	7
Before I go shopping for food, I make a list of everything I need	1	2	3	4	5	6	7
I prefer to buy fresh meat and vegetables rather than pre-packed	1	2	3	4	5	6	7
I try to avoid food products with additives	1	2	3	4	5	6	7
It is more important to choose food products for their nutritional value rather than for their taste	1	2	3	4	5	6	7
Being praised for my cooking adds a lot to my self-esteem	1	2	3	4	5	6	7
Frozen foods account for a large part of the food products I use in our household	1	2	3	4	5	6	7
I just love shopping for food	1	2	3	4	5	6	7
I am an excellent cook	1	2	3	4	5	6	7
When I serve a dinner to friends, the most important thing is that we are together	1	2	3	4	5	6	7
I prefer to buy natural products, i.e. products without preservatives	1	2	3	4	5	6	7
I consider the kitchen to be the woman's domain	1	2	3	4	5	6	7
Information from advertising helps me to make better buying decisions	1	2	3	4	5	6	7
I use a lot of mixes, for instance baking mixes and powder soups	1	2	3	4	5	6	7
I make a shopping list to guide my food purchases	1	2	3	4	5	6	7
What we are going to have for supper is often a last-minute decision	1	2	3	4	5	6	7
Cooking is a task that is best over and done with	1	2	3	4	5	6	7
Eating is to me a matter of touching, smelling, tasting and seeing, all the senses are involved. It is a very exciting sensation	1	2	3	4	5	6	7
I always try to get the best quality for the best price	1	2	3	4	5	6	7
I eat whenever I feel the slightest bit hungry	1	2	3	4	5	6	7
Cooking needs to be planned in advance	1	2	3	4	5	6	7
I like to try new foods that I have never tasted before	1	2	3	4	5	6	7
When I do not really feel like cooking, I can get one of the other members of my family to do it	1	2	3	4	5	6	7
I like to try out new recipes	1	2	3	4	5	6	7

SECTION 3 – In this last section please answer to these questions about your usual way to do shopping for food in your family. When you answer think about your habits in the last year. Please express how much important are to you some buying habits. You can answer choosing a number from 1 to 7, where 1 means "not important to me" and 7 means "very important to me". You can shade your answer with any number in between.

Statements	How much are they important to me?						
	Not important to me	.....	.....	.....	.....	.....	Very important to me
Do not have informations about products prices before buying them.	1	2	3	4	5	6	7
The price of the product you chose is not clearly indicated	1	2	3	4	5	6	7
To find easly the level of quality that you desired for your food (for example in terms of taste, healthiness, origin, variety)	1	2	3	4	5	6	7
To controll the quality of products that you wish to buy (for example label's visibility, information in the place where you buy them, nutritional informations).	1	2	3	4	5	6	7
To compare prices of products in different markets before buying them	1	2	3	4	5	6	7
To compare quality of products in different markets before buying them	1	2	3	4	5	6	7
To find fresh food near to the place where you live.	1	2	3	4	5	6	7
To plane food supplies (in advance) for the week in your family.	1	2	3	4	5	6	7
Do not find the food that you are searching for (for example because they are difficult to find)	1	2	3	4	5	6	7
To control the expire date of products before buying them.	1	2	3	4	5	6	7
To manage with attention all the expire dates of the products that you have at home.	1	2	3	4	5	6	7
Pay attention to expire date of products to avoid any waste.	1	2	3	4	5	6	7
To transport food from the place where you buy it to the place where you live in time to ensure the preservation of the quality (for example think about frozen food)	1	2	3	4	5	6	7

Please answer now the following questions:

How long does it take for your family to collect informations about price of foods that you _____

How long does it take for your family to collect informations about food sales promotions _____

How long does it take for your family to collect informations about quality of food that you _____

How long does it take for your family to buy food in the supermarket/large-scale retail _____

How long does it take for your family to buy food in the local market or in small food shops _____

How long does it take for your family to buy food in Solidarity Purchase Groups or in _____

How many times your family buy foods in a week _____

Do you think there is an appropriate number of food suppliers to guarantee a YES NO

Please answer to these following questions considering the capability to guarantee some important aspects about food.

Statements	EVALUATION OF CAPABILITY						
	Not able at all	.....	.....	.....	.....	.....	Totally able
Esteem the ability of supermarket/large-scale retail trade where you usually buy food, to guarantee a convenient price	1	2	3	4	5	6	7
Esteem the ability of alimentary shops, where you buy food, to guarantee a convenient price	1	2	3	4	5	6	7
Esteem the ability of Solidarity Purchase Groups/farmer markets where you buy food, to guarantee a convenient price	1	2	3	4	5	6	7
Esteem the ability of supermarket/large-scale retail trade where you usually buy food, to guaranteethe quality that you desire.	1	2	3	4	5	6	7
Esteem the ability of alimentary shops, where you buy food, to guarantee the quality that you desire	1	2	3	4	5	6	7
Esteem the ability of Solidarity Purchase Groups/farmer markets where you buy food, to guarantee the quality that you desire.	1	2	3	4	5	6	7