

Governance Structure, Perception and Innovation in Credence Food Transactions: The Role of Community Networks

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1 Introduction

In this paper we use a combination of behavioral and new institutional economic perspectives to look at the transactions of “sustainable-oriented” foods (e.g. organic food, fair trade, etc.) which often assume the characteristic of credence goods. When credence attributes are involved in the transaction (e.g. safety, fairness, etc.) information asymmetry and uncertainty tend to reduce the likelihood of different parties to enter in the transaction¹. Because spot markets are unlikely to be used in this type of transactions, typical solutions are the use of hybrids, vertical integration and public monitoring (Vetter and Karantininis, 2002; Ménard and Valceschini, 2005). Moreover both consumers and producers (e.g. farmers) look at these products from a more *utilitarian* (cold) than a *hedonic* (hot) perspective. In this paper we address this issue by analyzing the effect of a “new” governance structure (GS) which is emerging in credence food transactions both at local and global level. We define this GS as a *community network* (CN) in which consumers and producers strongly integrate their goals by organizing a “club”. According to our perspective the “community networking mechanism” is based on sharing resources (*resource pooling*) which are specific for the transactional parties and on the usage of membership (*involvement and commitment*): (1) consumers provide *time, information, knowledge* and *financial resources* by participating directly in the organisation of the production process. They receive *leisure*, credence foods and decrease the *costs of monitoring*; (2) farmers reduce their *decision-rights* but also part of their production and transaction costs (labour, certification, etc.), the *uncertainty* of specific investments and *income instability*. Furthermore when we allow for involvement between consumers and producers within the CN we assume that agents are not “neutral” to the type of GS they are using to carry out the transaction and a *reverse causality* could be present such that the type of GS used (e.g. the community network) also influence the perception of the transacted credence food. In other words because consumers and producers are using a CN we hypothesize that they both experience a change from a utilitarian to an hedonic perception of the credence products because of the *involvement effect*. The main consequences is that involvement has an impact on the level of the monetary incentives to be used (*decreasing*) and also on long-run stability of the community mechanism (*increasing*). Given this *reverse causality hypothesis* the paper highlights the conditions under which CN

1. Akerlof’s “Market for Lemons” paper (Akerlof, 1970) firstly clarified that when quality and uncertainty appear in the decision making process of buying or selling a good then a problem of asymmetric information starts to affect the transactional parties involved in it. This is considered as the main source of potential moral hazard behaviours and adverse selection problems which leads to *market failures* or to *missing markets* (Akerlof, 1970). Darby and Karni (1973) explicitly emphasised the asymmetric information between sellers and buyers in the case of credence goods.

could be seen as an effective solution to moral hazard and adverse selection biases in credence food transactions both at local and global level.

In section 2 we briefly discuss the main characteristics of credence foods looking at both consumer and producer perspective. Section 3 is focalized on the description of how credence foods are transacted, the type of GS used and the main circumstances for their usage. In section 4 we present and discuss the community network model, firstly without taking into account the involvement effect and the reverse causality hypothesis which is introduced only later on as an extension of the “base model”. In final section we discuss the model and try to provide some concluding remarks for both further research development and policy interventions in this domain.

2 Credence food characteristics

2.1 Consumers' perceptions of credence foods

The notion of different types of product characteristics was firstly introduced by Nelson (1970) followed by Darby and Karni (1973). According to their classification any good or service could be seen as a bundle of characteristics which could be grouped in the search, experience and credence types. A credence characteristic (or attribute)¹ emerges when the good or service quality can be detected only with high *ex-ante* and *ex-post* transaction costs (Andersen and Philipsen, 1998). It means that even after consumption the quality attributes cannot be verified without costs (Vetter and Karantininis, 2002). In food production “sustainable-oriented” products (e.g. organic, animal-welfare oriented, fair trade, etc.) are typical examples of credence goods. But when is a good or a service really perceived as “credence” by consumers (buyers)?

Darby and Karni (1973) suggested to classify as credence any good that are “laden with” credence characteristics. This rule is necessary but not sufficient for pursuing a clear-cut classification. It is the prevalence of the credence attributes in the consumer perception that makes it properly “credence”. This leads automatically to the need of defining a decision-making mechanism for the credence food consumer. Andersen (1994, p.6) defined as credence goods all “*goods for which the buyer's decision-making is dominated by concerns about credence characteristics and thus about the seller's credentials*”. Her starting assumption is to consider a “bounded rational” consumer (buyer) who has to deal with millions (n) of potentially critical characteristics of all products and services s/he is going to consume (Andersen, 1994). We can identify each characteristic, i , in terms of both its perceived quality level, c_i , and the method of quality detection, d_i . This means that the perceived quality of the product is characterised by a vector of n pairs (or an $n \times 2$ -matrix):

$$[(c_1, d_1), \dots, (c_i, d_i), \dots, (c_n, d_n)] \quad (1)$$

where the *c-values* are adequate measures of perceived quality of a characteristic whereas the

d-values could be either “search”, “experience” or “credence” (Andersen, 1994).

Consistently with this approach² we can assume that during the decision making process consumers consider as given a large number of attributes (some of them with a credence character) and take into account only a small set of them. We can consider the latter as

1. In this paper we use the terms “characteristic” and “attribute” as a synonymous even if we are aware of different definitions of them in economic psychology or marketing where they are mainly consider separately. For a detailed discussion on this issue readers can refer to Andersen (1994) and Andersen and Philipsen (1998).

2. Especially with the bounded rationality hypothesis.

manifest characteristics and the former as *latent* characteristics. According to this classification, a food characteristic is latent if it does not influence the consumer behaviour but it might later emerge as an important element of the decision making process (Andersen and Philipsen, 1998). It is manifest if it influences the actual buyer's behaviour. Hence if this small sample of food attributes is dominated by at least one credence attribute then this food could be perceived as manifestly credence. Otherwise it could be only latently credence.

This assumption makes the definition of credence foods rather dynamic because consumer sensitiveness, awareness and attention to a credence attributes can change and become less/more intensive. For example when a credence quality of a given food starts to be perceived as the standard requirement then it will become a latent attribute and the consumer will not take it into account in the decision making process. Following this reasoning we can list four main categories for both latent and manifest credence characteristics (Andersen and Philipsen, 1998): (1) *hidden* credence characteristics cannot be detected even by inspecting or analysing the finished good because they concern to the way (production process) the product has been made (e.g. "ethical" characteristics of the production process); (2) *standardised* credence characteristics are represented by technical attributes and requirements the food has to fulfil (e.g. the absence of dangerous chemicals) that are (technological) difficult and (economical) costly to be detected by a single consumer; (3) *stochastic* credence characteristics derive from the variability and uncertainty of certain quality attributes of each product and the consumer's need to reduce this uncertainty by relying on a (almost) known probability distribution. A typical example is given by the use of a brand or a label which tells the consumer the overall distribution of a bundle of quality attributes. So instead of dealing with the variability of several quality characteristics s/he can deal with a single one. In this case experiencing the good does not complete the detection of the attribute which remains credence. In fact consumers relying on a given brand are open to accept a small number of "negative" or "positive" deviation from the "average" quality without changing their judgement on the brand quality. Only after "repeated deviations" (which implies ex-post transaction costs) the consumer is willing to change his/her perception of the quality distribution associated to the brand. (4) *Bundled* credence characteristics which emerge when the quality detection system is provided directly by the seller of the product (e.g. the advice concerning the number of treatments that is necessary to repair a car is provided by the car repair service provider). Therefore given the complexity and the costs involved in credence food consumption why are consumers still interested in it? We can answer to this question by considering that consumers are also interested in (they give a value to) the effects of the production process of the credence food in itself. Hence consumers that are interested in organic foods are also better-off by consuming them because of the positive effects for example on the environment (i.e. less use of chemicals). They recognize a value added to the product and could be prepared to pay a premium price for that to the producers.

2.2 Producers' approaches to credence foods

Now we consider the case of producer (seller). If (manifest or latent) credence characteristics exist then they will be used by producers to compete on market shares. More specifically credence characteristics will be mainly used to vertically differentiate products. Following Lancaster (1979), it is common to distinguish between two (polar) cases of product differentiation. Two products are said to be horizontally differentiated when both products have a positive demand whenever they are offered at the same price (Dos Santos Ferreira and Thisse, 1996). Neither product dominates the other in terms of characteristics, and heterogeneity in preferences over characteristics explains why both products are present in

the market (Dos Santos Ferreira and Thisse, 1996). Two products are said to be vertically differentiated if one product captures the whole demand when both are supplied at the same price. One product dominates the other and differences in willingness-to-pay for "quality" across consumers are necessary for the two products to be in the market (Dos Santos Ferreira and Thisse, 1996). This process of product differentiation requires investments and additional costs while benefits are uncertain since new credence characteristics are not immediately recognizable by consumers (Andersen, 1994). We can distinguish two different problems for producers who want to use credence attributes for quality differentiation strategies: (1) on the one hand they have to control the quality system behind the product in order to ensure that the right level (or quantity) of credence attributes are delivered to the consumers, avoiding the risk of unintended quality breakdowns; (2) on the other hand they have to guarantee consumers that the credence attributes are effectively present in the product since the base condition for buyers is to consider moral hazard as the more likely behaviour of the seller in these transactional situations. Andersen (1994), for example, called the first problem as the "positive pig-in-poke phenomenon" to define a condition where progressive sellers build-up their reputation and hid quality attributes in a repeated transactional scenario. In this case credibility of the sellers (his/her reputation or credentials) substitute information and sellers are totally responsible for any quality breakdown. Hence the default condition (*reference point*) for buyers is to cope with unemployable information asymmetries by relying on a system where it is accepted to hide information because buyers trust on seller quality claims (Andersen, 1994). On contrary the second case is defined as the "negative pig-in-poke phenomenon" and refers to the condition by which a group of sellers may be able to charge the of high-quality products although they deliver low-quality (non credence) ones. This is the classical moral hazard problem which determines adverse selection (such that low-quality products withdraw high-quality ones in the long run).

To ensure a "positive pig-in-poke" condition, and avoid a negative one, sellers interested in high-quality (i.e. credence attributes) have to invest in both the quality control and in the information systems. These investments require appropriate GS to manage producer's (or seller's) high asset specificities and uncertainty and could be seen as one of the engines for product innovation/standardization and market entrance/exit strategies in food transactions. For example producers interested in entering the market or increasing their customer stock could be interested in differentiating their product by transforming latent credence attributes in manifest ones (*product or process innovation*). On the other hand producers with an already large share of the market could be more interested in a standardised product (and reducing production costs) and to avoid uncertainty due to new food characteristics (*standardization*). In this case the tendency is to show only the minimum amount of necessary credence attributes. Besides producers strategies, unforeseen changes in consumer perceptions/preferences (e.g. food related scandals) can contribute to transform latent credence attributes in manifest ones and vice-versa in any moment. This often leads to dramatic changes in producers market shares and reaction between the different types of producers.

3 “Traditional” governance structures for credence food transactions¹

Given the complexity of their production and distribution process, which makes difficult and costly the quality detection by buyers (e.g. consumers) and control or management by sellers, food products are very often characterized by credence attributes, (e.g. producers) (Raynaud et al., 2005). The direct consequence of such condition is that many credence food transactions do not exit (missing market) even if potentially profitable and, if existing, they are usually worked out by using hybrids or vertical integration (hierarchies) (Vetter and Karantininis, 2002; Ménard and Valceschini, 2005; Raynaud et al., 2005). But when and why are hybrids used to work out credence food transactions instead of vertical integration?

The starting point to explain this mechanism is to look at how agro-food systems work. Scholars and practitioners often underline that agro-food systems are characterized by complex relations (Ménard and Valceschini, 2005; Raynaud et al., 2005). One traditional way to look at this complexity is to conceptualize the agro-food system interactions as a bundle of vertical and horizontal relations which has producers on one extreme and consumers on the other (Lazzarini et al, 2001). We can use this image also to describe what we can define as a *credence food net-chain*. In this system we have different legally independent entities, like firms, public agencies and consumers (or households) which interact to coordinate food quantity and quality with a specific focus on credence attributes. Within the system multiple-transactions are carried out using all the potential different typologies of GS. At any stage 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). This is usually defined as a vertical coordination of the credence net-chain. More often it could happen that one party needs to enforce the coordination of quality within the transactions between the different ties of the chain (vertical relationships) for example by using authority. In this case vertical control or vertical integration is the most likely type of vertical relation we can find in credence food net-chains. In such a complex and dynamic system “new” GS can always emerge and *substitute* or *complement* the already existing and functioning ones. The question is when and how different GS emerge in credence food transactions.

According to the 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 the GS is mainly driven by good/resource and transaction attributes (specificity, frequency and uncertainty). Moreover the decision-making process about the GS to be used in the transaction is explicitly settled within a specific social context constituted by the social embeddedness (informal rules of society) and institutional environment (formal rules of society) (Williamson, 2000). Therefore the parties involved in a credence food transactions (e.g. a farmer and a retailer) will follow a mechanism (often dynamic) in order to align the GS to the transaction and credence food attributes. A mixed combination of different coordination mechanisms and motivation could be used in order to minimize the costs of transaction. Coordination, motivation and transaction cost economizing are also recognized as the main ingredients of any contractual relation in a given transaction (Bogetoft and Olesen, 2002). The main consequence is that no unique solutions are present in the governance of credence food transactions.

1. Interesting examples of different typologies of governance structures used in the European agro-food chains to manage quality items are provided by Ménard and Valceschini (2005) and Reynaud *et al.* (2005). Readers can refer to these papers for further discussions and examples.

In table 1 we have synthesized the potential governance solutions that can be detected in the credence food transactions. As showed in table 1 we don't have a bi-univocal correspondence between a type of GS, its features (e.g. duration, degree of pooled resources and competition, coordination and motivation mechanisms) and credence food attributes. What we have is the presence of some regularities. For example *classical bilateral contracts* could be used only for highly standardized credence foods. The main problem here is that when the credence attributes start to be more complex and mutual dependency more intense then the related asymmetric information is only partly addressed in classical contracts, since they mainly rely on third parties for safeguarding and monitoring. A classical contracting example in agro-food chains could be represented by some seasonal contracts provided by large retailers to fresh fruits and vegetables growers to overcome unexpected peaks in the demand. In this case the products have to meet standardized credence characteristics (e.g. a certain amount of chemical residuals) such that ex-post measurements could be performed to detect the degree of loyalty of growers. Ex-ante conditions are specifically settled in the contracts. If cheating behaviors are detected parties can rely on courts or disregard the contracts. Both parties are not required to make specific investments and long-run relations are not ensured. When this type of contractual relations start to be repeated and parties begin to rely also on reputational issues and mutual dependency decisions, then a more *neo-classical* type of contract is used. In this case also foods with stochastic credence characteristics can transact because parties start to form expectations (probabilistic distribution) on the average quality provided. Ex-ante reputational selection can be made by parties. Ex-post contracts are renegotiable and renewable while third party (courts or legal system) is still the main enforcement mechanism if failure of contract commitment is detected. Food with mainly *hidden* and *bundled* credence attributes of products can be managed by the use of *relational contracts* because they are self-enforcing contracts, mainly based on reputation, with a limited third party involvement and possible ex-post renegotiation. Hence transactional parties are more dependent on each other and informal agreements, rules, norms and incentives can be used to carry out potentially repeated transactions in which, for example, product processes could be inspected and bundled credence attributes verified more likely. In the food net-chains this type of GS are often used, especially if transactions are locally based, for example in niche or high specialized production (Karantininis and Graversen, 2008). When transactions start to be more complex, and more then two parties are involved in, then *networks* and *alliances* are more likely to be used as GS (Ménard, 2004). Both networks and alliances incorporate a contracting component which basically could be seen as a multi-players bilateral contracting. More specifically in networks and alliances more then one typology of contracts is typically used. Furthermore both networks and alliances use authority and power to coordinate transactions. On the contrary, while bilateral contracting implies only limited pooled resources and competition, in networks and alliances these two elements are crucial. Also the frequency and duration of transactions increase dramatically. *Franchising* and *partnerships* are typical examples of networks (Ménard, 2004). They mainly emerge in credence food transactions where a private label is used as the main signal to communicate credence quality to buyers. Large retailers and food providers (i.e. restaurants, coffee-makers, bars) often use the franchising GS to manage credence food transactions (Azvedo and Silva, 2003; Ménard and Valceschini, 2005). In this case credence attributes are ensured to buyers by means of brand name reputation which is one of the important specific assets in franchising (Minkler and Park, 1994; Ménard, 2004). *Partnerships* also use brand name reputation but the mutual dependency between parties is extended also to other assets. Moreover the use of authority is higher and more formalized contracts are used in combination with relational ones. In *collective trademarks* the brand name reputation belongs to many parties which

contributes to generate it and to maintain its reliability during the time (Ménard and Valceschini, 2005). It often assumes the connotation of a public good since the use of the collective brand name is almost not rival and excludability could be limited (Raynaud et al, 2005). Coordination is mainly due to a combination of prevailing relational contracts and, to a less extent, neo-classical contracts between all parties, while authority is used mainly by one party (mainly a public agency) among the others. A typical example of collective trademarks in credence food transactions is provided by public quality label systems in the European Union, such as PDO brands (Ménard and Valceschini, 2005; Raynaud et al, 2005). Moving from network to alliance typologies of hybrid GS we experience a dramatic increase of the use of power and authority in the coordination mechanism while contracting becomes relatively less relevant. In alliances the involved parties start to share a greater amount of specific assets. Property rights and decision rights are also much more connected to each other. The credence attributes could be provided only by an intensive and continuous interaction between parties. For example *cooperatives* act very closely to the way collective trademarks do but with a higher degree of resource pooling and using more intense authority in the coordination mechanism. They also use brand reputation for signaling credence attributes as in franchising and partnership GS (Ménard and Valceschini, 2005). In *joint-ventures* and *equity-based alliances* the role of informal coordination (handshake) is very limited and mutual dependency very high (Bogetoft and Olesen, 2002). Parties need to coordinate through formalized contract (e.g. neo-classical type) and use of authority. These types of GS are mainly used in the credence food innovation process. When asset specificity is dramatically high and the coordination for providing credence quality is extremely intense, complex *vertical integration* could be the only solution to solve the transaction management (Andersen, 1994; Vetter and Karantininis, 2002).

Table 1. Types of governance structures in credence food transactions

Type of GS (a)		Duration	Governance mechanisms (b)			Credence characteristics involved	Example in credence food transactions					
			Pooling	Contracting	Competing							
Market	<i>Spot market</i>	One shot	Null	Null	External	latent	Commodity markets					
Hybrids	Bilateral contracts	<i>Classical</i>	One shot	Almost null	Third party Incentive compatible Ex-ante handbook	External	standardized	Annual/seasonal (one-shot) large retailers/processors contracts				
					Third party Incentive compatible Handbook				External	standardized stochastic	Pluri-annual contracts	
	<i>Neo-classical</i>	Repeated and limited	Limited	Limited handshake Limited Third party	External	hidden bundled	Local based pluri-annual contracts (e.g. niche products)					
				<i>Relational contract</i>				Repeated and often unlimited	Moderate	Limited handbook Handshake (Self-enforcing)	External and moderately internal	standardized stochastic hidden bundled
Networks	<i>Franchising</i>	Almost continuous and often unlimited	Moderate		Neo-classical contracting Limited authority	External and moderately internal	standardized stochastic hidden bundled			Public label systems and consortia (e.g. PDO, PDG, etc.)		
				<i>Collective trademarks</i>	Almost continuous and often unlimited			Moderate/intensive	Limited neo-classical + Mainly relational contracting		External and moderately internal	Private quality-oriented consortia
				<i>Partnership</i>	Almost continuous and often unlimited			Moderate/intensive	Moderate authority Mainly neo-classical + limited relational contracting			
Alliances	<i>Cooperatives</i>	Continuous and mainly unlimited	Intensive	Intensive	Mainly relational contracting	External and internal	Quality-oriented ventures					
					<i>Joint-venture</i>			Continuous and mainly unlimited	Intensive	Limited relational contracting	External and limited internal	Quality-oriented alliances
					<i>Equity-based alliance</i>			Continuous and unlimited	Intensive	Limited neo-classical Authority		
Firm	<i>Vertical integration</i>	Continuous and unlimited	Intensive	Authority	External and limited internal							

Source: our elaboration after (a) (b) Menard, 2004; (c) Andersen and Philipsen, 1998

4 The community network model

4.1 Community networks without involvement

Usually the transactions between consumers and the “last” retailers are carried out using some kind of bilateral contracts since the parties are not involved in any resource pooling and moreover competition is only external. Therefore the way the entire food net-chain is organized before this last transaction could affect enormously the way final consumers perceive the credence attributes. As showed in the previous sections the entire “credence” food net-chain could be seen as formed by many entities and so far final consumers and primary producers (e.g. farmers) relations are mediated by a large number of intermediate parties. On the other hand farmers and consumers could interact more directly by means of bilateral contracts as illustrated, for example, in the so called “*short food supply chain*” transactions¹ (Renting et al., 2003). What is not clearly specified in literature is the case when this interaction is also characterised by increasing mutual dependence (e.g. pooling resources) and decision rights sharing. We can describe this specific GS as a *relational network* rather than a relational contract, and when more than two parties (e.g. more than one producer and/or consumer) are involved we can see it as a *community network*, since the relational component of the GS is related to group interaction and participation. Emerging examples of community network in credence food transactions are the *Community Support Agriculture* in urban and peri-urban contexts (Wilkinson, 2001), or initiatives like short food chains, local producer-consumer networks and *Consumer Buying Groups* (Lamine, 2005; Carbone et al., 2006; Carbone et al., 2007).

But why is a community network a distinct and novel typology of GS? Moreover, what are the peculiarities that it provides in case of credence food transactions? A community network² could be defined as a GS where consumers and producers strongly integrate their functions (goals) by organizing a “club”. Therefore the “community networking mechanism” is based on sharing and pooling resources which are specific for the two parties and on using membership to assign decision and/or property rights: (1) for example consumers can provide time, information, knowledge and financial resources by participating directly in the organization of the production process. They receive leisure, credence foods and decrease the transaction costs (e.g. the costs of monitoring); (2) farmers reduce their decision rights but also part of production and transaction costs (i.e. labour costs, certification costs, etc.), uncertainty of specific investments and income instability.

We can describe an “ideal typical” community network as follow: a group of interested consumers and at least a producer or a group of producers (e.g. farmers) decide to interact on the basis of a long-term relationship to produce a specific type of credence food. We can imagine that this relationship could start based on more formal rules (handbook) and progressively rely on more informal ones (handshake). Authority is limited. In this sense a community network is very similar to a closed-membership association. Moreover in this transactional model we can assume that both consumers and producers decide to interact on the basis of opportunistic behaviour³. We can think about the interactions of the different transactional parties as they are welfare optimizer. The key element here is that consumers

1. Farmers’ markets or “zero miles” initiatives are good example of short chain transactions between farmers and consumers all over Europe and United States.

2. We transfer this term from ICT terminology where a “Community network” is a term largely used to indicate the use of network technologies to serve local communities (see also Wikipedia).

3. in this sense *trust* or *altruism* are not strictly necessary to explain the model even if they could be key elements to make it more close to realty.

maximise their pay-offs (i.e. utility) not only by transacting (buying) a credence food but also by participating in the organization of the production process because it provides leisure. Therefore in this model we can assume the consumer's pay-off function as a utility function *à la* Becker (1965) where consumption of both goods and leisure time contribute to enhance consumer's wellbeing. The time spent by consumers in the production process of credence foods is assumed to be leisure time. This is consistent with the definition of the credence attributes which implies that consumer's utility is increased by a certain type of product process instead of others. In other words, if a consumer could be better off by consuming a credence food due to the fact that s/he has preferences on the type of process used for it, it should also be the case that s/he is better off by participating directly in this process. It doesn't imply that all credence food consumers consider leisure to participate in the production process but at least it is likely that a subset of them could consider it as a leisure. The time allocated in the production process of the credence food could be related to manual working (labour) or in its organization (managerial). It could be limited to participating in the decision making process. The time allocated by consumers is also time 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 the producers can 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 the credence food production. Of course the participation of consumers within the organization of the credence food production process could imply additional costs. For example the organizational costs increase because even if limited the use of authority and handbook within the network requires a bureaucratic and legal structure. Furthermore producers reduce their decision and property rights on resource use (e.g. land use) which could imply an increase of their opportunity costs. In this sense the mechanism of the community network is very close to the one of relational contracting. If the reduction of monitoring costs and the increase of consumers' wellbeing (due to the leisure time allocation) compensate the increased organizational and opportunity costs then a community network could be a "competitive" GS for credence good transactions. This "competitiveness" with respect to other GS could be increased by considering aspects other than the time allocation: for example knowledge and information sharing, financial and investment participation. The interaction between consumers and producers within the developing process of the community network could also be based on sharing strategic information and knowledge between members. This could be a key-element for successfully introducing and developing new products and/or processes reducing the uncertainty of consumer's acceptance phase. On the other hand consumers can influence and project directly "on-demand" products much closer to their needs and preferences. Furthermore consumers can decide to participate directly in the financial structure of the producers original organization (for example participating to the construction of a new glasshouse for fresh vegetables, for the introduction of cost-minimizing and or "green" technologies, etc.) in order to improve the efficiency and social sustainability of the production process.

4.2 Community network with involvement

In the new institutional economics perspective the choice of the governance structures (GS) to carry out transactions is mainly driven by good/resource and transaction attributes (specificity, frequency and uncertainty), given opportunistic behavior and bounded

rationality of the transactional parties (Williamson, 2000). This decision-making process is explicitly settled within a specific social context constituted by the social embeddedness (informal rules of society) and institutional environment (formal rules of society). The implicit assumption here is that good/resource attributes are not influenced by different GS. Is this always true? In other words, is it possible that a *reverse causality* between GS and good/resource attributes/perception exists? The behavioral economic approach strongly underlines the importance to consider several aspects of the individual decision-making process such as individual ability (knowledge, education, intelligence, etc.), motivation (impulsivity, involvement, etc.) and/or opportunity (time pressure, repetition, cognitive load) (Kahneman et al., 1982). Moreover some behavioral economists address this point by considering the choice of a good as driven mainly by two ways of thinking (dual processing) such as the cognitive and affective ones (Kahneman, 2003). An example of the dual processing is the perception of utilitarian rather than hedonic attributes of a good (food). Hedonic goods are defined as those products which procure mainly affective gratification from sensorial attributes while instrumental or utilitarian products satisfy functional and practical tasks as a direct consequence of their consumption (Batra and Ahtola, 1991). Therefore if cognitive aspects (and the perceived attributes) of the good are prevailing then it assumes the characteristic of a *utilitarian* good, otherwise it is most likely perceived as an *hedonic* good (Hirschman and Holbrook, 1982; Dhar and Wertenbroch, 2000). Hence the “way” (the setting) a good/resource is exchanged (GS) matters, because it has an impact on the perception of the good/resource in itself. There is no consolidated evidence that credence attributes could be seen exclusively as connected to utilitarian aspects, but if we overlap the two definitions we can see an orientation of credence attributes in the direction of utilitarian rather than hedonic characteristics. Especially if we follow Dahr and Wertenbroch approach (2000) we can identify preference for credence attributes as connected with long-run consumption paths (what they call “*shoulds*” related consumption), while hedonic attributes are mainly related on short-run benefits and goals (what they define “*wants*” related consumption). Some marketing studies already showed the role of different contractual settings (e.g. the impact of using different quality labels) in the consumer’s perception (like food tastes and satiation capacities) of hedonic and utilitarian foods (Wansik et al., 2004). The authors found out that using quality oriented labels (with a clear health and diet signal) has a significant impact on the perception of hedonic foods. In other words by using a transactional setting in which “credence-utilitarian” information was revealed to the consumers, the overall evaluation of hedonic foods was changed in the direction of a more utilitarian one. Other researches showed up that the prevailing of utilitarian components could discourage or make their choice less likely (Raghunathan et al., 2006). Therefore we can argue that in the case of CN, consumers could be involved by participating in the community such that their perception of the credence food is also modified by it. The involvement effect due to the reverse causality hypothesis implies a modification of the overall perception of the credence foods which is perceived as more hedonic by consumers. The direct participation in the credence food productions, in fact, could enormously enhance the sensorial and emotional rather than cognitively driven perceptions. This is particularly important in the initial decision of consumer to orient his/her consumption towards more credence but potentially less hedonic foods. This switching decision is potentially affected by the endowment effects of the consumer, such as his/her food habits, and moreover by lost aversion if the trade-off is between a “*non-credence but hedonic*” food and a “*credence but non-hedonic*” one (Cramer, 2009). Oskam, for example, recently connected this endowment effect with the resistance of economic agents (i.e. consumer or farmers) to change their status quo (i.e. the consumption habits or policy preferences) due to “hidden” transaction costs (Oskam, 2009). These transaction costs are higher if the change in the status quo

implies losses rather than gains (Kahneman, 2003). Within the community network setting the transformation of the credence food from a prevailing utilitarian into prevailing hedonic food could enormously affect the decision of consumer to switch into credence-food consumption paths and to reduce the transaction costs related to this change. In the long-run a combination of more hedonic and utilitarian items could impact the overall stability of the community network and its competitiveness with respect to other GS for carrying out credence food transactions.

5 Discussion and conclusions

In this paper we briefly discussed an emerging type of governance structure in credence food transactions. We define it as a community network. In this governance structure consumers and producers integrate their functions by using a combination of competition, cooperation and resource pooling. Example of emerging community networks could be observed especially in the domain of consumer-farmer interactions. Moreover a community network could be developed between consumers and processors and/or distributors. The basic feature of a community network, in fact, is the presence of a group of sellers and a group of buyers which are interested in directly participation in the production process and/or in the control of the credence food transaction because they consider the time allocate on these functions as leisure time. It implies that both suppliers and demanders are involved in the credence food production process. This involvement represents a component of their wellbeing.

But can we consider community networks as limited to niche products and/or to local based transactions? Are they applicable to credence food transactions at a more global scale? We believe that the development of both new Information Communication Technologies (ICT) and social networking can be the basis for the evolution and development in a *large-scale-setting* of what we are defining as a community network today. Building up *virtual communities*, for example, could be a new frontier in this domain. For example the use of *blogs* and *websites* can represents the common platform to put in relation credence food producers (sellers) and consumers (buyers). Moreover virtual community networks can serve global transactions, can be used by food companies as part of their R&D and overcoming the actual research activities in marketing and consumer post-purchase services. In a virtual community consumers can experience the credence food production processes without physically moving but using ICT opportunities and facilities directly from their houses or work environments. The huge development in the field of *e-commerce* can also be applied to the virtual community networks and be used by agro-food companies and consumers to transact credence foods worldwide. Indeed we consider this development as a further step to enhance the capacity of credence foods to be “competitive” with respect to “traditional commodities” which usually have a lower transaction costs an less adverse selection and moral hazard problems. 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 firms interested in credence food transactions. In this perspective the use of community networks in credence food transactions could be a *frontier* to be explored in the very next future both at local and global level.

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