Economia agro-alimentare /
Food Economy

An International Journal on Agricultural and Food Systems

Vol. 24, Iss. 2, Art. 5, pp. 1-34 - ISSN 1126-1668 - ISSNe 1972-4802
DOI: 10.3280/ecag2022oa13053

Sustainable transition and food democracy: The role of decision making process in Solidarity Purchasing Groups

Gustavo Magalhães de Oliveira[a], **Gaetano Martino**[*,b], **Chiara Riganelli**[b], **Michela Ascani**[c]

[a] University of São Paulo, Brazil
[b] University of Perugia, Italy
[b] Council for Agricultural Research and Economics, CREA, Italy

Abstract

This study investigates how the decision making process in Solidarity Purchasing Groups (SPGs), intended as hybrid organizations, supports the sustainability transition in food systems. The process of sustainability transition in food systems involves many kinds of tensions, especially in the process of pursuing a multiplicity of economic, social and environmental objectives. This study focuses on the SPGs in Italy and study how they organize their internal decision-making process and their search for the group objectives. This paper argues that the decentralization of the decision rights in SPGs sustains the integration of such different objectives and coordinates efficiently the multifaceted values of their members. The empirical analysis shows that the decision rights are decentralized and that the decentralized decision rights positions in solidarity purchasing groups are associated with the pursuing of different objectives. Our findings indicate that SPGs contributes to the transitions toward sustainability in food systems by using organizational democracy mechanisms to coordinate tensions among social, market and environmental values.

Article info

Type:
Article
Submitted:
11/12/2021
Accepted:
16/07/2022
Available online:
29/09/2022

JEL codes:
D12, D23, P46

Keywords:
Solidarity
Purchasing
Group
Food democracy
Decision rights
Resources uses

Managing Editor:
Alessio Cavicchi

* *Corresponding author*: Gaetano Martino (PhD) - Full Professor - Department of Agricultural, Food and Environmental Sciences, University of Perugia, Borgo XX Giugno, 74 - 06121, Perugia, Italy. E-mail: gaetano.martino@unipg.it.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Introduction

Transitions toward sustainability entail profound modifications of both entrepreneurs and citizens worldviews (Hedstad *et al.*, 2020) and system structure (Bui *et al.*, 2019; El Bilali, 2020). The search for enhancing food system sustainability raises challenges in the institutional framework of economic and social relationships and in management strategies and practices (Eakin *et al.*, 2017; Ericksen, 2008). Inherently, the transition raises tensions of different nature among territorial and productive systems and within the organizations (Oskam *et al.*, 2021; Wannags & Gold, 2020). Tensions derive primarily from competing paradigms (Bui *et al.*, 2019; Gaitán-Cremaschi *et al.*, 2019) necessary to transition and from the coexistence of different institutional logics, i.e., different systems of taken-for-granted beliefs and practices that guide actors' behavior (Battilana *et al.*, 2018). Different institutional logics originate different, conflicting objectives concerning social, environment and economic fields, i.e., profit and no-profit objectives. The capability to solve the resulting tensions and to balance these multiple nature objectives are key conditions to guide a sustainable transition of organizations.

This paper concentrates on Solidarity Purchasing Groups (SPGs), a type of Alternative Food Network (AFN, Renting *et al.*, 2003) whose goals are to provide food to group members, but also to contribute to environment and health protections, to ethic goals and to implement democracy and social justice values (Anderson, 2008; Dedeurwaerdere *et al.*, 2017; Martino *et al.*, 2016; Prost, 2019; Giuca and De Leo, 2019). Recent studies have showed that AFNs tend to effectively combine economic and environmental objectives (Martino *et al.*, 2016; Torquati *et al.*, 2021). In particular, SPGs face the necessity to combine and balance the multiple objectives they aim to pursue, coping with tensions while maintaining the group coherence and stability and effectively contribute to food sustainability. This study explores which organizational mechanisms are implemented by SPGs to coordinate multiple and potentially conflicting objectives.

This study adds to the studies on the transition of food system toward sustainability in three ways. First, it shows that the decentralization of the decision rights among SPGs members integrate the group objectives in feasible patterns. Second, it submits that beyond the rooting of participation processes in society (Hassanein, 2003; Moragues-Faus & Morgan, 2015; Moragues-Faus, 2020; Prost, 2019), it is necessary to design and to adopt specific organizational aspects to support the development of food democracy. Third, this study advances in the analysis of the SPG governance, in particular with respect to the configuration of the decision making process, thereby adding to the recent literature (Dedeurwaerdere *et al.*, 2017; Duncan & Pascucci, 2017; Forssel & Lankoski, 2015, 2017; Manganelli *et al.*, 2020).

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

1. Conceptual framework

1.1. *Multiple objectives in SPG*

The multiplicity of objectives and their diverse nature are inherent to SPGs (Renting *et al*., 2012), given the heterogeneity of values and needs supporting the participation in AFNs are heterogeneous (Mount, 2012). Holloway *et al*. (2007) underlined the attention that AFNs pay to environmental impact of conventional food network, as well as ethical commitment on the technologies used in food production processes. AFNs seek to promote the adoption of technology oriented toward environmental and social sustainability (Dedeurwaerder *et al*., 2017). Focusing on trust food chain sustainability, Ilbery and Maye (2005) identified the coexistence of multiple values and related objectives spanning from producing healthy food and fair-trading to protection of animal welfare and social inclusivity. Sonnino and Marsden (2006) clarified that the focus on environmental, nutritional and health concern in AFNs can be understood as a term of complementarity with conventional food sector while embeddedness appears to be a more distinctive feature of AFNs values.

Fourat *et al*. (2020) examined the multiple aspects of values interaction in network practices to show the impact of food health and quality on equality issues. Mert-Cakal and Miele (2020) documented and conceptualized, in community supported agriculture, the way in which participation aligns technology and sustainability. The diversity of the value also originates a literature on hybrid food value chain intended as a chain in which operates both alternative and conventional actors (Klein & Michas, 2014; Le Velly & Dufeu, 2016). Fonte (2013) documented the diversity of values in SPGs and related them to both ideology and contexts and to the practices aimed at potentially transforming the local food system. Practices stemming from different values substantiate food democracy processes characterized by multiplicity of objectives in food production and consumption (Lang, 2005; Lang & Heasman, 2004; Renting *et al*., 2012), even though not systematically (Moragues-Faus, 2017).

The diversity of objective raises tensions which may undermine both the group stability and its capability to support sustainable transition. There is then the necessity of solving and managing tensions by organizational mechanisms. The diversity of objectives raises tensions on the allocation of the resources directly (e.g., knowledge, labour, storage houses) or indirectly (e.g., agricultural land) managed by the SPG. Pursuing different objective may actually entail conflicting resources uses. Operationally, a *resource use objective is intended as the goal to which a given resource productive use is aimed: the goal may regard the quantity and the quality – or both*

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

– of the product, but it may also concern with the creation of positive externalities and the reduction of the negative externalities (Martino *et al*., 2016). Unsolved tensions impeding effective resources uses compromises the possibilities of reaching the group objectives. The different nature of these objectives – economic, social, environmental – exacerbates the tensions as it tends to obstacle the integration of the institutional logics at stake. This study argues that the decentralization of the decision rights acts as a SPG organizational mechanism to solve tensions caused by this diversity of the institutional logics. To make cleat this point it is necessary underline the hybrid organizational nature of the SPGs.

1.2. *Hybrid organizing and integration*

The problem on how SPGs coordinate their members and farmers to guarantee a satisfactory achievement of the various objectives requires to solve internal tensions from distinct institutional logics. To this purpose, agents must design, negotiate and implement specific organizations and must allocate decision rights, promoting participation and facilitating on going management (Battilana *et al*., 2018).

Governance analysis of food networks has taken into account the territorial level (Brunori & Rossi, 2000), the extent of the supply chains (DuPuis & Block, 2008) or knowledge creation processes (Dupuis & Gillon, 2009). Duncan and Pascucci (2017) introduced systematic factors to explain the organizational forms chosen in AFNs. Martino *et al.* (2016) focused on the role of organizational practices determining the SPGs objectives in terms of resources uses. Forssell and Lankoski (2015, 2017) pointed out the role of power relationships and risk sharing in food networks. Manganelli *et al.* (2020) and Manganelli and Mouleart (2018) identified critical aspects in SPGs governance in terms scale, resources access processes and institutional frameworks. This approach observes SPGs though a hybrid governance form formed by four governance principles: hierarchy, anarchy, '*heterarchy*', solidarity (Manganelli and Mouleart, 2018, for details). Organizational, resources and institutional tensions are identified from these premises. The resulting model generalizes the understanding of the AFNs governance principles in a reflexive governance perspective (see Feindt and Weiland, 2018).

Our study contributes to this literature by adopting the concept of integration and by assessing the role decision rights configuration in SPGs governance. We assume that participation in the decision making processes facilitates the pursuit of multiple objectives (Battilana *et al*., 2018: 17). Both.

Integration is here held as the process of balancing, accommodating and reconciling diverse values to achieve and make decision making within an

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

organization effective (Battilana *et al*., 2018: 8). Hybrid organizing then is held to support the integration of different objectives. More precisely, *hybrid organizing are the activities, structures, processes and meanings by which organizations make sense of and combine aspects of multiple organizational forms and institutional logics* (Battilana & Lee, 2014; Battilana *et al*., 2018). This study assumes that SPGs adopt hybrid organizing to combine multiple and potentially conflicting objectives.

The SPG includes several participants who are assigned to given positions with specific decision rights (e.g. group member, coordinator, assembly of the members, product manager) (Martino *et al*., 2016). A *decision configuration* can be then defined as *the set of the positions entitled to decide and the types of decisions they could take* (*who decides what*). According to Battilana and Lee (2014) and Battilana *et al.* (2018), the possibility of integrating different objectives, as requested by the transition toward sustainability, is conditioned by the decentralization of decision rights over the uses of the resources. Actually the sharing of decision rights is central to coordinate distinct resources uses (Grandori, 2017a), while decision rights held the legitimate entitlement to participate in and exert influence on an organization's ongoing management (Battilana *et al*., 2018: 4).

The conceptual framework of this study shows how coherent SPG organization is expected to be able to integrate objectives of different nature. Therefore, this study aims at testing two hypotheses:

Hypothesis 1: *the decision making process in an SPG is decentralized.*

Hypothesis 2: *decentralized decision rights are associated to specific resources uses objectives.*

These hypotheses were tested by an empirical analysis.

2. Method of the empirical analysis

2.1. *Sample and variables*

The governance of the Italian SPGs is basically based on the objective of developing members participation (Barbera *et al*., 2020; Novelli and Corsi, 2018; Fonte, 2013). To do so, the governance address the different motivations essentially directed toward responsible consumer values, especially to mobilize members and families over environmental and social issues (Graziano and Forno, 2012, p. 122). The multiplicity of objectives is then necessarily a theme to be considered in the group governance

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

analysis. In carrying out empirical analysis, this complexity requires to design methodological approaches able to capture multiple aspects of the phenomenon. In this study, we adopted a mixed-method approach was used to collect data of SPGs in Italy. It was namely adopted a "development strategy" (Greene *et al*., 1989), departing with three cases study (reported in Martino and Pampanini, 2012) to delineate the basic feature of the decision making processes and to inform and help to establish the basis for the collection of quantitative data.

The research took the form of an internet survey. An online questionnaire was submitted to 900 Italian SPGs contacted through the effective e-mail addresses that were available through the Italian SPGs network ReteGas. (www.retegas.org). The survey yielding the database used here was conducted in 2013. More recently, several scholars have shown the vital role of democracy in SPG (Manganelli and Mouleart, 2018, 2002; Prost, 2019; Dedeuwardere *et al*., 2019; Forno and Graziano, 2015), highlighting aspects which were captured by the survey. In order to contribute to this literature, our study provides a conceptual framework focusing on the organizational mechanisms behind the democratic governance of SPGs. Moreover, this promotion of participation seems to have played a critical role in tackling the effects of Covid-19 pandemic on food access (Forno and Graziano, 2020).

The questionnaire included the following categories of questions: i) the general characteristics of each SPG (i.e., year of foundation, number of members, etc.); ii) the SPG's decision-makers (i.e. members and their positions); iii) an evaluation of the group objectives.

We considered the following members and positions:

- *Management*: a person who is on the board of the group, but is not present in every group; the main role is to channel the group activities toward common goals.
- *Group member*: a person who is just a basic participant, but she/he is normally active in several areas in the informal structure of the group.
- *Product Manager*: this person is in charge of operational activities, such as gathering the information required to organize food purchases and deliveries. She/he is normally a key figure. The Product Manager organizes food product provision by preparing and delivering the purchase order to the producers: he/she organizes the distribution of the product among the members.
- *Assembly*: the meeting of all the members of the group varies in the number of activities of debate and decision-making, which depends on the history of the specific group.
- *SPG Network*: a network of all the SPGs; it is established throughout the country. Although the groups do not necessarily have to comply with

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

the suggestions of the network, the latter can contribute to the strategic perspective of the groups, and help their interaction with policy authorities on several levels.
- *President/Coordinator*: she/he is the person responsible for the group and is sometimes formally elected by the assembly. The President plays two main roles: he/she represents the group in certain official relationships (normally with local public authorities) and helps coordinate group activities.

We also considered two general types of decisions: strategic decisions, referring to the group structure and a long-term activity, and operational decisions, regarding the daily functioning of the group.

Strategic decisions
- *Management of relations*: this is concerned with the management of group agreements with external bodies, such as local or national policy authorities, other SPGs, or the SPG network.
- *Member Entry/Exit*: this regards the acceptance of a new member and the potential exit of an existing member.
- *Group activity*: this is generally a specification of the fields of *the* group activities (e.g. food, culture, etc.).
- *Selection of producers*: producers are selected according to the group's expectations regarding health, the environment and ethics.

Operational decisions
- *Product basket*: the product usually procured by the group is specified periodically. The relevant decision depends on other purchases and on producer selection, the product plan and logistics.
- *Product Planning:* this decision concerns the possibility of a group co-producing the food with farmers;
- *Purchase orders*: just a simple decision required to procure food;
- *Logistics*: this refers to all the possible decisions that have to be made to guarantee distribution of the product purchased.

According to the members' values and expectations, the SPG identifies specific resource use objectives (R_s). Three sets of resource use objectives are considered:

Health
- To select farmers able to supply safe foods (*SAFETY*).
- To define the production process (*DIRECTING*).
- To select food with "no residuals" (*NORESID*).

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

- To select food with "no preserving additives" (*NOPRESERV*).
- To select foods for babies (*BABYFOOD*).

Environment
- To select the farmers on a geographical basis (*PRODZONE*).
- To choose locally grown food grown (*CLOSEZONE*).
- To choose food with reduced environmental impact (*ENVIMP*).
- To enhance the transportation logistics (*ENHLOG*).
- To select products from traditional genotypes (*TRADGEN*).

Convenience, ethical, symbolic and hedonic attributes
- To choose low price food (*LOWPRICE*).
- To choose foods produced according to ethical guidelines (*SOCRESP*).
- To choose unique foods (*ELABFOOD*).
- To choose continuously available food (*AVAILAB*).
- To choose traditional foods (*TRADIT*).

The respondents were then required to assign a score to each objective by answering to the following question: *How do you evaluate the following objectives in the context of the strategy of your group?* using a 7-point Likert scale (from j=-3: *Not important* to j=3: *Very important*). The respondents were expected to be able to express the average evaluation of the group's resource use objectives because of their positions held.

2.2. *Testing approach*

Having classified the SPG decision-makers and the decisions usually made by each decision-maker in SGP (see below), the empirical analysis presents a test of Hypothesis 1 by simply investigating the frequency distribution of the decision types across the decision-makers positions.

To test the hypothesis 2, elaborating on the approach of Ethiraj and Levinthal (2009), this study assumes that the impact (β_i) of the decision (d_{is}, with i=1,…,I) made by each decision-maker D_k (with k=1,…,K) is associated to the value of the resources use objectives (μ_s, with s=1,…,S):

$$\mu_s = f(d_{is}, \beta_i) \quad (1)$$

A generalized ordinal logistic model (Williams, 2010) was estimated for each decision-makers and type of decision to test the Hypothesis 2. The dependent variables of each model is the value of a given resource

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

use objective and the independent variables are the decisions made at each decision-making position. This approach is appropriate for the types of variables used in the study and also for the correction of potential heteroskedasticity. The model estimated is:

$$g(\mu) = \beta_0 + \beta_1 d_{1k,s} + \ldots + \beta_1 d_{i,k,s} \quad (2)$$

where g function is a link function and $\beta_{i,\,k,\,s}$ are the parameters to be estimated (for *i.th* decision, made by the *k.th* decision maker for the *s.th* resource use). More precisely, the coefficient $\beta_{i,\,k,\,s}$ estimated in a generalized ordinal logistic model indicates the impact of each independent variable on the dependent variable in a log-odd scale. Let μ be score assigned by the respondent, with j=1,…,7 categories. Then $P(\mu \leq j)$ is the cumulative probability of μ less than or equal to a specific category j=1,…,J−1. For each μ_s the log odds of being unlikely highly scored (versus low scoring) when the decision maker D_k take the decision $d_{i,k,s}$ is $\beta_{i,k,s}$ times higher ($\beta_{i,k,s}$ positive)/lower ($\beta_{i,k,s}$ negative) than in the case the decision was not taken. The estimated parameters make possible to capture the connection that the decision-makers expect to establish between the decision and objective. If a parameter $\beta_{i,k,s}$ estimated is not statistically significant, there is not an effect of the decisions d_{ik} on the resources uses objective value. The opposite is true if a parameter $\beta_{i,k,s}$ estimated is statistically significant: in this occurrence, the decisions d_{ik} has an effect on the resources uses objective value.

To test the hypothesis 2 it is necessary to verify if the parameters estimated whether or not the decisions are associated to the resources use objective value. The empirical analysis allows one to reject the hypothesis of association between the decision and the resources uses objective value (none statistically significant parameter) or alternatively indicate a probable effect of the decentralization of the decision rights with the objectives. We test hypothesis 2 adopting the following criteria:

a) *the larger the number of statistically significant parameters for each model (type of decision and positions), the more effective is the decision on that resources allocation to multiple objectives*;
b) *the larger the number of effective decisions for each position, the more decentralization is likely to be effective to resources allocation on multiple objectives and then the more the integration is likely to be effective.*

3. Results

Our accidental sample consists of 121 valid questionnaires returned back by respondents available to participate in the research. We collected information from members in different positions. The group President or

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

coordinator represents 64% of our respondents. Product managers and simple members constitute 11% of our observations each, i.e., 22% altogether. The remaining 14% is represented by founder members. In addition to food provision, 34.4% of the groups provide clothing, 68.8% are engaged in cultural activities, and 29.6% conduct other activities including solidarity activities and swap parties.

First, we investigate the distribution of the decisions separated into strategic or operational types, and into decision-makers/members with different positions. According to the democratic nature of the SPG, we expected to find that: a) each decision-maker has a role in both strategic and operational types of decisions; b) there is an association between the types of decisions and the types of decision makers, thereby indicating a democratic participation and decentralized structure of decision rights across different members in the decision-making process.

Considering the aforementioned 6 types of decision makers and 9 type of decisions, we required to each respondent to specify "*who decides what*". The answers from these questions form the basis of the interconnection between the members' positions and their participation in the decision-making process for strategic and operational decisions, i.e., they highlight the existence or not of a decentralized structure of decision rights among the positions. Table 1 summarizes the results.

The marginal distribution indicates that the different members of the group almost always address all types of decisions, including strategic ones. It shows that the *Group Member* participates in the largest number of decisions (37.0%), whereas the *SPG Network* appears in the smallest number (6.7%). The *Assembly* plays an important role (21.6%), whereas the *President*, *Management* and *Product Manager* positions have an average participation (13.1%, 11.0%, 10.6%, respectively).

These findings provide support for Hypothesis 1 by highlighting the fact that members with different positions participate in all decisions of the SPG. Even simple group members also take part in the decision-making process regarding strategic decisions, which denotes the decentralization of decision rights among the various decision-makers of the group and the democratic nature of this arrangement. Accordingly, the extent of the involvement of *Group members* and the *Assembly* indicates the fact that the groups rely on a democratic and collectively determined approach (Duncan & Pascucci, 2017; Graziano & Forno, 2012; Renting *et al*., 2012).

Moreover, we test the internal consistency of the decision by a simple χ^2 test to be conducted on the sample distribution of the decision made by types and decision-makers. The chi-square test $\chi^2 = 390.00$ (0.00) it indicates there is an association between the type of decisions and the positions of the categories are involved in different parts of the decision-making process, as expected from Hypothesis 1.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Table 1 - Contribution of each decision maker to each type of decision. The table show the relative frequencies of each type of decision (column) made by each type of decision maker (rows). The classification in strategic and operational decisions is useful to distinguish the scope of the resources with respect to the ability of engage the economic resources and the time span of the activities related

	Type of decision									
	Strategic decisions				**Operational decisions**					
Decision Maker	**Management of relations**	**Entry/Exit members**	**Activity of the group**	**Selection of producers**	**Product basket**	**Planning of Product**	**Planning of purchasing**	**Purchasing orders**	**Logistic**	***Total***
SPG Network	2.2	0.2	0.6	0.9	0.5	0.1	0.9	0.5	0.9	*6.7*
President/Coordinator	2.6	2.1	1.5	1.3	1.0	0.6	1.6	1.1	1.3	*13.1*
Management	1.0	1.5	1.4	1.5	1.4	0.6	1.5	0.8	1.2	*11.0*
Group Member	4.2	4.7	4.2	3.5	3.8	5.1	3.9	4.0	3.6	*37.0*
Product Manager	0.7	0.3	0.5	1.7	0.9	0.5	2.6	3.4	0.0	*10.6*
Assembly	2.1	2.1	3.7	3.3	3.7	1.1	2.9	1.0	1.5	*21.6*
Total	12.8	10.9	11.8	12.1	*11.4*	*8.0*	*13.4*	*10.9*	*8.5*	*100.0*

Source: The authors.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Tables A.1-9 in the Annex presents the OGLM estimates.

The models show that many combinations of decision rights allocated to SPG decision-makers are significant statistically for the different types of objectives of the SPG.

For each of the nine types of decision, a set of six models (one for each type of positions) was estimated, and repeated for each of the 15 resource uses objective. Therefore, each of these models indicate the impact of the allocation of decision rights – to a specific type of position (e.g., *Management*) for a specific decision (e.g., *Management of relations*) on a given objective (e.g., *Ethics*: in this case, the impact is positive, statistically significant, and equal to 1.29). The impacts of *Planning of purchase*, *Purchasing order* and *Logistic* are present only for certain positions and objectives. A more obvious difference is evident for the remaining types of decisions, especially for the conventional market objectives. Specifically, the larger the number of significant parameters, the higher their distribution among decisions, positions and objectives, and the stronger the support for accepting *Hypothesis* 2. A small number of models present an overall statistical significance (models with small probability of model χ^2). In addition, note that some models do not present ancillary parameters (symbol *cut_j*) because the corresponding scores are absent in the sample. The findings of the study illustrate the positive and negative expected associations by types of decisions and SPG member's position summarized in the Table 2.

There is no specific pattern in the association between resources uses and decision configuration, since statistically significant associations are distributed among all uses and positions, regardless their nature. This suggests that decentralization of rights is a key mechanism when combining resources uses objectives. This in turn highlights the role of hybrid organizing when handling the tensions from different institutional logics and integrating different objectives (Battilana *et al.*, 2018).

4. Discussion

The empirical evidence shows that the decision rights in SPGs are decentralized and that decentralization influence the positive scoring of potentially conflicting group objectives. The decentralization of the decision rights makes it possible to coordinate interest in alternative resource use objectives, in accordance with a cohesive governance based on sharing rights. This evidence delineates a key feature of the governance of the Italian SPGs in the perspective of members participation (Barbera *et al.,* 2019; Novelli and Corsi, 2018; Fonte, 2013. Graziano and Forno, 2012). Motivations- behind the decentralization put it in use as an integration mechanism: different drivers make the decentralization an integration mechanism.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Table 2 - Syntesis of the OGLM results

Positive relationships		Negative relationships	
Strategic decisions	**Operational decisions**	**Strategic decisions**	**Operational decisions**
Management of relations (Table A.1): *Assembly* decision right is (positively) associated with the resource uses implemented by the farmers/producers (*Directing and Nopreserv*) in the *Health* subset. *Network* decision rights also appears as being positively related to *Directing*.	**Product basket** (Table A.5): *Product Manager decision right* is associated is associated with the resource uses related the kind of food (*Babyfood*) in the *Health* subset.	**Management of relations** (Table A.1): *Group member* decision right is (negatively) associated with the resource uses implemented by the farmers/producers to produce traditional foods (*Tradit*) in the *Conventional* subset.	**Product basket** (Table A.5): *Product Manager decision right* is associated with the resource uses implemented by the farmers/producers to choose food with reduced environmental impact (*Envimp*) and to enhance the transportation logistics (*Enhlog*). *Assembly* decision right is associated with resource uses to not choose unique foods (*Elabfood*) and traditional foods (*Tradit*) in the *Conventional* subset.
Member Entry/Exit (Table A.2): *Management* decision right is associated with the resource uses in terms of being able to supply safe foods (*Safety*) - *Health* subset. *Network* decision right is associated with the resource uses related the kind of food (*Babyfood*) in the *Health* subset and the resource uses to choose continuously available food (*Availab*) and traditional foods (*Tradit*) in the *Conventional* subset.	**Product Planning** (Table A.6): *Product Manager* decision right is associated with the resource uses to choose continuously available food (*Availab*) in the *Conventional* subset.	**Member Entry/Exit** (Table A.3): *Product Manager* decision right is associated with the resource uses to not select farmers able to supply safe foods (*Safety*), and to not to select food with “no residuals” (*Noresid*) in the *Health* subset.	**Product Planning** (Table A.6): In the Environmental subset, there is a negative association between *Group member* decision right, the selection of products from traditional genotypes (*Tradgen*) and the choice of traditional foods (*Tradit*). *Assembly* decision right is negatively associated with the resource uses related to the kind of food (*Babyfood*) in the Health subset. This type of position is also associated with resource

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Table 2 - continued

Positive relationships		Negative relationships	
Strategic decisions	**Operational decisions**	**Strategic decisions**	**Operational decisions**
			uses to choose continuously available food (*Availab*) and to choose unique foods (*Elabfood*) and traditional foods (*Tradit*) in the *Conventional* subset.
Group activity (Table A.3): *Management decision right* is associated with the resource uses implemented by the farmers/producers to choose food with reduced environmental impact (*Envimp*) in the *Environment* subset. *Group member* decision right is associated with the resource uses implemented by the farmers/producers (*Directing*) in the *Health* subset.	**Purchasing planning** (Table A.7): *Product manager* decision right is associated just with *Availab*.	**Group activity** (Table A.3): *Product Manager* is (negatively) associated with the resource uses implemented by the farmers/producers (*Nopreserv*) in the *Health* subset. *Group member* decision right presents a negative association related to the choice of traditional foods (*Tradit*). *Assembly* decision right is (negatively) associated with resource uses to choose unique foods (*Elabfood*) and traditional foods (*Tradit*) in the *Conventional* subset.	**Logistics** (Table A.9): *Assembly* decision right is (negatively) associated with the with the resource uses implemented by the farmers/producers regarding the kind of food (*Babyfood*) in the *Health* subset. This position (*Assembly*) is also associated with resource uses to choose continuously available food (*Availab*) in the *Conventional* subset. *Group member* decision right is (negatively) associated with resource uses to not choose unique foods (*Elabfood*) and traditional foods (*Tradit*) in the *Conventional* subset.
Selection of producers (Table A.4): *Product Manager decision* right is associated with the resource uses related the kind of food (*Babyfood*) in the *Health* subset and the resource uses to choose continuously	**Purchasing orders** (Table A.8): *Network* decision right is associated with the resource uses to select the farmers on a geographical basis (*ProdZone*) in the Environmental subset.	**Selection of producers** (Table A.4): Both the *Assembly* and *Network member* decision rights are (negatively) associated with the resource uses to choose continuously available food (*Availab*) in the Conventional	

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Table 2 - continued

Positive relationships		Negative relationships	
Strategic decisions	**Operational decisions**	**Strategic decisions**	**Operational decisions**
available food (*Availab*) in the *Conventional* subset.		subset. In addition, Assembly decision right is also negatively associated in resources uses to choose unique foods (*Elabfood*) and traditional foods (*Tradit*) in the *Conventional* subset. *President* decision rights also present a negative association with the production of traditional foods.	
	Logistics (Table A.9): *Network* decision right is associated with the definition of production processes (*Directing*).		

Source: The authors.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

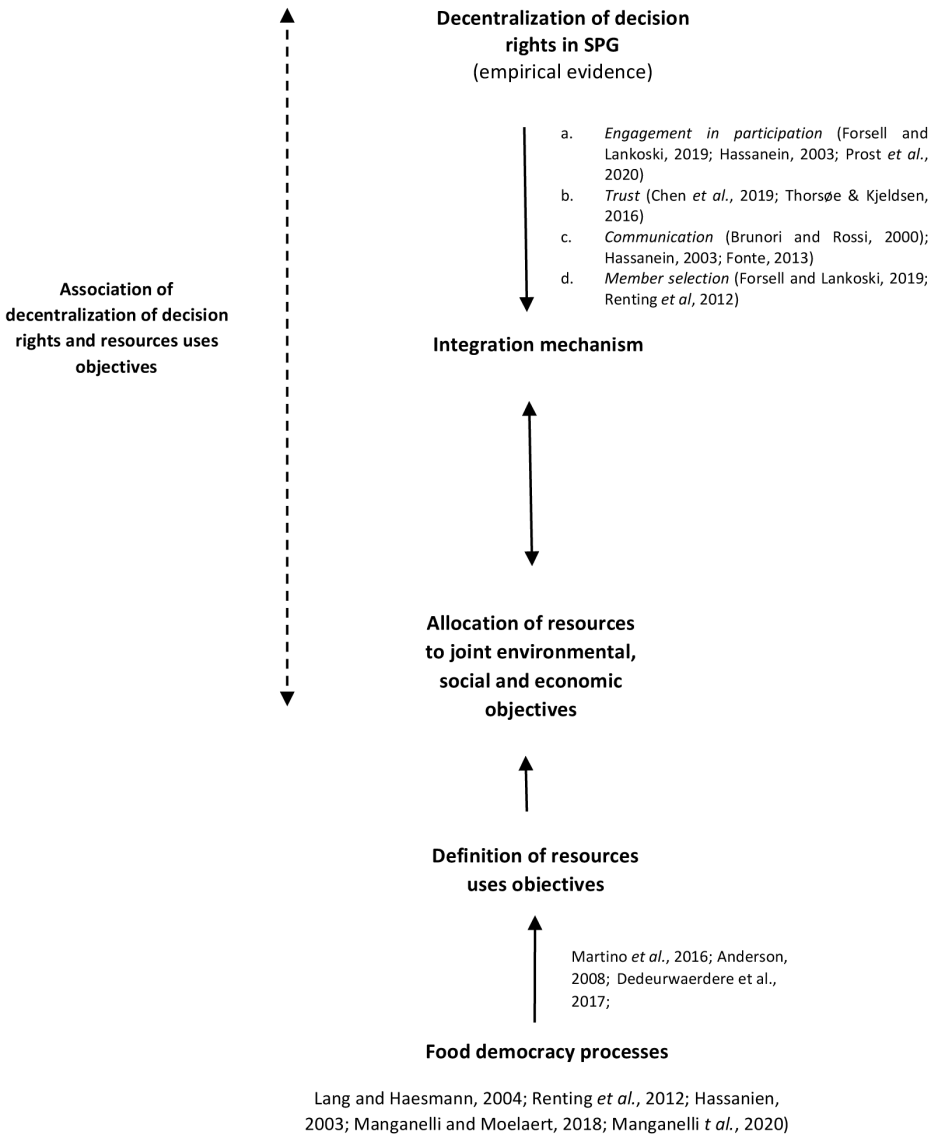
Engagement and the expectations in participations animating these groups (Forsell & Lankoski, 2015; Hassanein, 2003; Moragues-Faus, 2017; Prost, 2019) is the first driver. The evidence proposed shows that the decision rights allocation varies with positions and type of decisions. However, data do not allow to corroborate or to confute the idea that decentralization is associated to effective egalitarian engagement in decision making (Moragues-Faus, 2017). Trust is a further driver allowing the group to decentralize the decision rights without consuming resources in excess in negotiating and this, in turn, contributes to foster trust (Chen *et al*., 2019). Trust is also developed by routinized process (Thorsøe & Kjeldsen, 2016), which can in turn sustain the process of decentralization. Moreover, participation and communication processes in SPGs (Brunori & Rossi, 2000; Fonte, 2013; Hassanein, 2003) favour processes of negotiating to integrate institutional logics by specific mechanisms (Battilana *et al*., 2018). An inherent driver to decentralize the decision rights is SPGs' process of members selection (Forsell & Lankoski, 2015; Renting *et al*., 2012), which corresponds to the organizational democracy processes identified by Battilana *et al*. (2018). These drivers converge in the distribution of the decision power, facilitating the negotiation processes necessary to decentralize the decision rights.

With respect to the framework elaborated by Manganelli and Mouleart (2018), this study shows that the decentralization of the decision rights intervenes in solving the tensions among different resources uses objectives and by combining them in the SPG decisions making process. Manganelli and Mouelart (2018) and Manganelli *et al*. (2020) extensively argue that both institutional and governance tensions arise in SPGs due to the coexistence of different organizational forms and potentially conflicting approaches. Even in the organizational perspective of this study, hybrid governance is invoked as another possibility to solve these tensions. However, as underlined by Figure 1, the focus here is to examine the organizational dimensions of the governance. Resources are actually used at the micro-level, where organizations live and interact and relevant innovations emerge to re-connect people and food (De Schutter 2017).

Our findings suggest that SPG outcomes depend upon specific organizational mechanisms. Based on literature, the Figure 1 illustrates the relationship between decentralization of the decision rights and multiple resources uses objectives pursued by SPGs. Figure 1 introduces a distinction between the role of the decision rights decentralization and resources uses objectives and food democracy processes. This study expands on the results of Duncan and Pascucci (2017) by comparing democratic forms and emphasizing collective decision-making as a distinctive feature in food networks. In addition, this study highlights the division of labor of the decision making process, which characterizes the democratic organization

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Figure 1 - Interpretation of the empirical results: decision rights decentralization integrating resources use objectives



(Battilana *et al.*, 2018; Grandori, 2017a, 2017b). The multiplicity of the SPG's objectives and their distinct economic nature combine the group expectations in an integrated and collective/collaborative perspective. This decentralization allows the group to allocate resources in a more efficiently

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

way and strengthens the network structure by reducing the possibilities of opportunistic behaviors related to concentrated decision power arising from an organizational culture of democracy (Battilana & Lee, 2014; Battilana *et al.*, 2018). This indicates SPGs as both a support to the sustainability transition of food systems and a hybrid organization managing sustainability tensions delineating examples of organizational schemes also for sustainable transitions (Govindan *et al.*, 2020; van Bommel, 2018).

Moreover, our findings highlight the importance of decentralization of decision rights to form the democratic participation in SPGs. Although the democratic nature of an organization entails deeper engagement of the participating members (Grandori, 2017a, 2017b), the decentralization of the decision rights remains a key feature (Battilana, 2018). Notably, the evidence gathered also indicates that decentralization does not have unidirectional linkages with values entailed by the resources uses objectives. We found no discriminatory links between positions and health, environmental, and conventional goals. Our results point to a complex combination of multiple but intertwined objectives in SPGs.

Conclusions

This research highlights the importance of organizational mechanisms of SPGs in coordinating multiple objectives in a way that helps overcome tensions among members' institutional logics and achieve broader systemic goals, such as sustainability transition in food systems.

This study also highlights how decision rights are distributed among stakeholders in the SPGs and how they are connected to the group objectives. It was shown an association between a decentralized configuration of decision rights and resource use objectives. This empirical association reflects the balancing among different objectives in the SPG as a hybrid organization containing organizational democracy mechanisms. As yet unexplored in literature, it provides evidence of the interconnection between resource use, complex social values and democracy as a governance structure in the context of sustainable food provision.

The results indicate that the adoption of this kind of decision rights decentralization can be another solution for other types of AFNs, which are susceptible to coordination problems (Carzedda *et al.*, 2018; Forssell and Lankoski, 2018). This study presents empirical evidence that SPGs are surrounded by a democratic organizational set-up, aligning decision rights and resource use objectives. Nevertheless, we acknowledge a limitation of our study due to the date of data collection. Further studies dealing with similar phenomena are highly welcomed.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

This study leaves room to explore other interesting points. The implementation of resource use and mobilization in detail should be explored with the different SPG decision-makers. However, an exploration of this part could reveal additional evidence on the efficiency of resource use and the effectiveness of the configuration of a democratic decision. Second, we did not explore the different levels of democracy between the groups. An analysis of whether one group is more or less democratic and whether it pays closer attention to certain specific objectives is also worthy of study. Third, we left room to investigate how the complex, organizational form of a SPG affects the coordination of an agri-food value chain. A comparison of situations in which this arrangement is or is not present could raise points of relevance to the modern systems of coordination and distribution of food. Finally, the connection and conflicts between macro- and micro-level of food democracy could also be a promising field in the sustainability literature.

References

Anderson, M.D. (2008). Rights-based food systems and the goals of food systems reform. *Agriculture and human values*, *25*(4), 593-608. doi: 10.1007/s10460-008-9151-z.

Barbera, F., Dagnes, J., & Di Monaco, R. (2020). Participation for what? Organizational roles, quality conventions and purchasing behaviors in solidarity purchasing groups. *Journal of Rural Studies*, *73*, 243-251, doi: 10.1016/j.jrurstud.2019.10.044.

Battilana, J., & Lee, M. (2014). Advancing research on hybrid organizing – Insights from the study of social enterprises. *Academy of Management Annals*, *8*(1), 397-441. doi: 10.1080/19416520.2014.893615.

Battilana, J., Fuerstein, M., & Lee, M.Y. (2018). New Prospects for Organizational Democracy? How the Joint Pursuit of Social and Financial Goals Challenges Traditional Organizational Designs. In S. Rangan (Ed.), *Capitalism Beyond Mutuality? Perspectives Integrating Philosophy and Social Science* (pp. 256-288). Oxford, UK: Oxford University Press.

Brunori, G., & Rossi, A. (2000). Synergy and coherence through collective action: some insights from wine routes in Tuscany. *Sociologia ruralis*, *40*(4), 409-423. doi: 10.1111/1467-9523.00157.

Bui, S., Costa, I., De Schutter, O., Dedeurwaerdere, T., Hudon, M., & Feyereisen, M. (2019). Systemic ethics and inclusive governance: two key prerequisites for sustainability transitions of agri-food systems. *Agriculture and human values*, *36*(2), 277-288. doi: 10.1007/s10460-019-09917-2.

Carzedda, M., Marangon, F., Nassivera, F., & Troiano, S. (2018). Consumer satisfaction in alternative food networks (AFNs): Evidence from Northern Italy. *Journal of Rural Studies*, *64*, 73-79.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Chen, L.A., Miranda, B.V., Parcell, J.L., & Chen, C. (2019). The foundations of institutional-based trust in farmers' markets. *Agriculture and Human Values*, *36*(3), 395-410. doi: 10.1007/s10460-019-09923-4.

Dedeurwaerdere, T., De Schutter, O., Hudon, M., Mathijs, E., Annaert, B., Avermaete, T., … & Vivero, J.L. (2017). The governance features of social enterprise and social network activities of collective food buying groups. *Ecological economics*, *140*, 123-135. doi: 10.1016/j.ecolecon.2017.04.018.

De Schutter, O. (2017). The political economy of food systems reform. *European Review of Agricultural Economics*, *44*(4), 705-731. doi: 10.1093/erae/jbx009.

Duncan, J., & Pascucci, S. (2017). Mapping the organisational forms of networks of alternative food networks: implications for transition. *Sociologia Ruralis*, *57*(3), 316-339. doi: 10.1111/soru.12167.

DuPuis, E.M., & Block, D. (2008). Sustainability and scale: US milk-market orders as relocalization policy. *Environment and Planning A*, *40*(8), 1987-2005. doi: 10.1068/a39250.

DuPuis, E.M., & Gillon, S. (2009). Alternative modes of governance: organic as civic engagement. *Agriculture and human values*, *26*(1), 43-56. doi: 10.1007/s10460-008-9180-7.

Eakin, H., Connors, J.P., Wharton, C., Bertmann, F., Xiong, A., & Stoltzfus, J. (2017). Identifying attributes of food system sustainability: emerging themes and consensus. *Agriculture and human values*, *34*(3), 757-773. doi: 10.1007/s10460-016-9754-8.

El Bilali, H. (2020). Transition heuristic frameworks in research on agro-food sustainability transitions. *Environment, development and sustainability*, *22*(3), 1693-1728. doi: 10.1007/s10668-018-0290-0.

Ericksen, P.J. (2008). Conceptualizing food systems for global environmental change research. *Global environmental change*, *18*(1), 234-245. doi: 10.1016/j.gloenvcha.2007.09.002.

Ethiraj, S.K., & Levinthal, D. (2009). Hoping for A to Z while rewarding only A: Complex organizations and multiple goals. *Organization Science*, *20*(1), 4-21. doi: 10.1287/orsc.1080.0358.

Fonte, M. (2013). Food consumption as social practice: Solidarity purchasing groups in Rome, Italy. *Journal of Rural Studies*, *32*, 230-239. doi: 10.1016/j.jrurstud.2013.07.003.

Forno M., & Graziano P., (2015). *Consumo critico e nuove forme di partecipazione politica: il caso dei GAS in Italia*. Fondazione Gian Giacomo Feltrinelli, -- https://xdams.fondazionefeltrinelli.it/dm_0/FF/feltrinelliPubblicazioni/allegati/Forno_Graziano/index.html (last access: 9 July 2020).

Forno M., & Graziano, P. (2020). *Il consumo responsabile in Italia: primi risultati dell'indagine 2020* -- https://osservatoriocoesionesociale.eu/osservatorio/il-consumo-responsabile-in-italia-i-primi-dati-dellindagine-2020 (last access: 9 July 2020).

Forssell, S., & Lankoski, L. (2015). The sustainability promise of alternative food networks: an examination through "alternative" characteristics. *Agriculture and human values*, *32*(1), 63-75. doi: 10.1007/s10460-014-9516-4.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Feindt, P.H., & Weiland, S. (2018). Reflexive governance: Exploring the concept and assessing its critical potential for sustainable development. Introduction to the special issue. *Journal of Environmental Policy & Planning*, *20*(6), 661-674. doi: 10.1080/1523908X.2018.1532562.

Forssell, S., & Lankoski, L. (2017). Navigating the tensions and agreements in alternative food and sustainability: a convention theoretical perspective on alternative food retail. *Agriculture and Human Values*, *34*(3), 513-527. doi: 10.1007/s10460-016-9741-0.

Forssell, S., & Lankoski, L. (2018). Shaping norms. A convention theoretical examination of alternative food retailers as food sustainability transition actors. *Journal of Rural Studies*, *63*, 46-56.doi: 10.1016/j.jrurstud.2018.04.015.

Fourat, E., Closson, C., Holzemer, L., & Hudon, M. (2020). Social inclusion in an alternative food network: Values, practices and tensions. *Journal of Rural Studies*, *76*, 49-57. doi: 10.1016/j.jrurstud.2020.03.009.

Gaitán-Cremaschi, D., Klerkx, L., Duncan, J., Trienekens, J. H., Huenchuleo, C., Dogliotti, S., … & Rossing, W.A. (2019). Characterizing diversity of food systems in view of sustainability transitions. A review. *Agronomy for Sustainable Development*, *39*(1), 1-22. doi: 10.1007/s13593-018-0550-2.

Giuca, S., & De Leo, S. (2019). A social network linking rural and peri-urban agricultural production to the city of Rome: A case study. *Eonomia agro-alimentare*. doi: 10.3280/ecag2019-002016.

Govindan, K., Shaw, M., & Majumdar, A. (2021). Social sustainability tensions in multi-tier supply chain: A systematic literature review towards conceptual framework development. *Journal of Cleaner Production*, *279*, 123075. doi: 10.1016/j.jclepro.2020.123075.

Grandori, A. (2017). Democratic governance and the firm. *Revista de Administração (São Paulo)*, *52*, 353-356.

Grandori, A. (2017b). "Linnaeus in the jungle: configurational lenses for discerning forms of economic organization in agri-business". In G. Martino, K. Karantininis, S. Pascucci, L. Dries, & J.M. Codron (Eds.), *It's a jungle out there – the strange animals of economic organization in agri-food value chains* (pp. 209-222). Wageningen Academic Publishers.

Grandori, A., & Furnari, S. (2008). A chemistry of organization: Combinatory analysis and design. *Organization Studies*, *29*(3), 459-485. doi: 10.1177/0170840607088023.

Graziano, P.R., & Forno, F. (2012). Political consumerism and new forms of political participation: The Gruppi di Acquisto Solidale in Italy. *The ANNALS of the American Academy of Political and Social Science*, *644*(1), 121-133. doi: 10.1177/0002716212454839.

Greene, J.C., Caracelli, V.J., & Graham, W.F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, *11*(3), 255-274.

Hassanein, N. (2003). Practicing food democracy: a pragmatic politics of transformation. *Journal of rural studies*, *19*(1), 77-86. doi: 10.1016/S0743-0167(02)00041-4.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Holloway, L., Kneafsey, M., Venn, L., Cox, R., Dowler, E., & Tuomainen, H. (2007). Possible food economies: a methodological framework for exploring food production-consumption relationships. *Sociologia ruralis*, *47*(1), 1-19. doi: 10.1111/j.1467-9523.2007.00427.x.

Ilbery, B., & Maye, D. (2005). Food supply chains and sustainability: evidence from specialist food producers in the Scottish/English borders. *Land use policy*, *22*(4), 331-344. doi: 10.1016/j.landusepol.2004.06.002.

Klein, K., & Michas, A. (2014). The farm fresh healthcare project: analysis of a hybrid values-based supply chain. *Journal of Agriculture, Food Systems, and Community Development*, *5*(1), 57-74. doi: 10.5304/jafscd.2014.051.003.

Lang, T. (2005). Food control or food democracy? Re-engaging nutrition with society and the environment. *Public health nutrition*, *8*(6a), 730-737. doi: 10.1079/PHN2005772.

Lang, T., & Heasman, M. (2004). *Food Wars: The Global Battle for Minds, Mouths and Markets*. London: Earthscan Publications.

Le Velly, R., & I. Dufeu. (2016) Alternative food networks as "market agencements": Exploring their multiple hybridities. *Journal of rural studies*, *43*, 173-182. doi: 10.1016/j.jrurstud.2015.11.015.

Liu, X., & Koirala, H. (2012). Ordinal regression analysis: Using generalized ordinal logistic regression models to estimate educational data. *Journal of modern Applied Statistical methods*, *11*(1), 21. doi: 10.22237/jmasm/1335846000.

Lohest, F., Bauler, T., Sureau, S., Van Mol, J., & Achten, W.M. (2019). Linking food democracy and sustainability on the ground: Learnings from the study of three alternative food networks in Brussels. *Politics and Governance*, *7*(4), 21-31. doi: 10.17645/pag.v7i4.2023.

Manganelli, A., & Moulaert, F. (2018). Hybrid governance tensions fuelling self-reflexivity in Alternative Food Networks: the case of the Brussels GASAP (solidarity purchasing groups for peasant agriculture). *Local Environment*, *23*(8), 830-845. doi: 10.1080/13549839.2018.1477745.

Manganelli, A., Van den Broeck, P., & Moulaert, F. (2020). Socio-political dynamics of alternative food networks: a hybrid governance approach. *Territory, Politics, Governance*, *8*(3), 299-318. doi: 10.1080/21622671.2019.1581081.

Martino G., & Pampanini R. (2012). Exploring the role of consumers as drivers of agri-food networks: contexts, beliefs, and governance. In E. Noe, C. Kjeldsen, H. Alroe, J. Christensen, N. Sriskandarajah, & R. Milestad (Eds.) (2012). Producing and reproducing farming systems. New modes of organisation for sustainable food systems of tomorrow. *Proceedings of the European IFSA Symposium* -- http://ifsa.boku.ac.at/cms/index.php?id=ifsa2012&L=-1%252527%27.

Martino, G., Giacchè, G., & Rossetti, E. (2016). Organizing the co-production of health and environmental values in food production: the constitutional processes in the relationships between Italian solidarity purchasing groups and farmers. *Sustainability*, *8*(4), 316. doi: 10.3390/su8040316.

Mert-Cakal, T., & Miele, M. (2020). 'Workable utopias' for social change through inclusion and empowerment? Community supported agriculture (CSA) in Wales as social innovation. *Agriculture and Human Values*, *37*(4), 1241-1260. doi: 10.1007/s10460-020-10141-6.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Moragues-Faus, A. (2020). Distributive food systems to build just and liveable futures. *Agriculture and human values*, *37*, 583-584. doi: 10.1007/s10460-020-10087-9.

Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: The emergent world of urban food policy. *Environment and Planning A: Economy and Space*, *47*(7), 1558-1573. doi: 10.1177/0308518x15595754.

Mount, P. (2012). Growing local food: scale and local food systems governance. *Agriculture and Human Values*, *29*(1), 107-121.

Corsi, A., & Novelli, S. (2018). Determinants of participation in AFNs and its value for consumers. In A. Corsi, F. Barbera, E. Dansero, & C. Peano (Eds.), *Alternative Food Networks* (pp. 57-86). Palgrave Macmillan, Cham.

Oskam, I., Bossink, B., & de Man, A.P. (2021). Valuing value in innovation ecosystems: How cross-sector actors overcome tensions in collaborative sustainable business model development. *Business & society*, *60*(5), 1059-1091. doi: 10.1177/0007650320907145.

Prost, S. (2019). Food democracy for all? Developing a food hub in the context of socio-economic deprivation. *Politics and Governance*, *7*(4), 142-153. doi: 10.17645/pag.v7i4.2057.

Renting, H., Marsden, T.K., & Banks, J. (2003). Understanding alternative food networks: exploring the role of short food supply chains in rural development. *Environment and planning A*, *35*(3), 393-411.

Renting, H., Schermer, M., & Rossi, A. (2012). Building food democracy: Exploring civic food networks and newly emerging forms of food citizenship. *The International Journal of Sociology of Agriculture and Food*, *19*(3), 289-307.

Sonnino, R., & Marsden, T. (2006). Beyond the divide: rethinking relationships between alternative and conventional food networks in Europe. *Journal of economic geography*, *6*(2), 181-199.

Thorsøe, M., & Kjeldsen, C. (2016). The constitution of trust: Function, configuration and generation of trust in alternative food networks. *Sociologia Ruralis*, *56*(2), 157-175. doi: 10.1111/soru.12082.

Torquati, B., Chiorri, M., Paffarini, C., & Cecchini, L. (2021). The economic and environmental sustainability of extra virgin olive oil supply chains: An analysis based on food miles and value chains. *The economic and environmental sustainability of extra virgin olive oil supply chains: an analysis based on food miles and value chains*, 59-86. doi: 10.3280/ECAG1-2021OA11391.

Tregear, A. (2011). Progressing knowledge in alternative and local food networks: Critical reflections and a research agenda. *Journal of rural studies*, *27*(4), 419-430. doi: 10.1016/j.jrurstud.2011.06.003.

van Bommel, K. (2018). Managing tensions in sustainable business models: Exploring instrumental and integrative strategies. *Journal of Cleaner Production*, *196*, 829-841. doi: 10.1016/j.jclepro.2018.06.063.

Wannags, L.L., & Gold, S. (2020). Assessing tensions in corporate sustainability transition: from a review of the literature towards an actor-oriented management approach. *Journal of Cleaner Production*, *264*, 121662. doi: 10.1016/j.jclepro.2020.121662.

Williams, R. (2010). Fitting heterogeneous choice models with oglm. *The Stata Journal*, *10*(4), 540-567. doi: 10.1177/1536867x1101000402.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Gustavo Magalhães de Oliveira
Center for Organization Studies (CORS) - School of Economics, Business and Accounting - University of São Paulo - São Paulo, Brazil
E-mail: gustavomoliv@gmail.com
Researcher at the Center for Organization Studies (University of São Paulo), Brazil. He holds a PhD in Management (Organizational Economics) from the University of São Paulo, along with a M.Sc. from the same university. During his PhD, Gustavo worked as a visiting researcher at the University of Perugia, Italy. His research interests are focused on the application of quantitative methods to explore organizational and institutional issues in agri-food systems.

Gaetano Martino
Department of Agricultural, Food and Environmental Sciences - University of Perugia
Borgo XX Giugno, 74 - 06121, Perugia, Italy
E-mail: gaetano.martino@unipg.it
Full Professor of Agricultural Economics at the Department of Agricultural, Food and Environmental Sciences of the University of Perugia (Italy). He carried out research activities, participating in international and national groups, in the following fields: a) Analysis of the agribusiness institutions and organizations; b) Quantitative analysis of the prices of agricultural products; c) Appraisal methodology; d) Rural development issues. Prof. Gaetano Martino is currently teacher of Agribusiness Economics and Rural appraisal graduate courses of the Department of Agricultural, Food and Environmental Sciences and of Transaction Cost Economics at the Ph Program in Economics of the University of Perugia. He is a member of the Editorial Board of Agricultural and Food Economics.

Chiara Riganelli
Department of Agricultural, Food and Environmental Sciences - University of Perugia
Borgo XX Giugno, 74 - 06121, Perugia, Italy
E-mail: chiara.riganelli@gmail.com
Post-doc fellow at Department of Economics of University of Perugia (Italy). She recived her PhD in Economics in 2017, defending a thesis entitled "Dynamics of quality disclosure in the agri-food context". She is a referee of the following scientific journals: Journal of Cleaner Production, British Food Journal, Journal of Agricultural Science and Technology. Her field of interest are the Agri-food supply chain organization and consumer decision process in the field of quality disclosure and labeling strategies.

Michela Ascani
Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria -
Centro di ricerca Politiche e Bio economia
Borgo XX Giugno, 74 - 06121, Perugia, Italy
E-mail: michela.ascani@crea.gov.it
Graduated in Political Science - International Studies; post degree in European Affairs, with a training period in the Netherlands and Spain at European Institute of Public Administration (EIPA). After a PhD in Sustainable Rural Development at

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

University of Perugia, she carried out research and teaching activity at University of Perugia, Faculty of Economics, and support to management of EU projects in public and private bodies. In the last 10 years, she has been working with CREA - Council for Agricultural Research and Economics, Research Centre for Agricultural Policies and Bio-economy (former Italian National Institute of Agricultural Economics - INEA), dealing with agricultural economics and policy. Main research interests: rural development policy (regional referent for Italian National Rural Network 2014-2020), EU cohesion policy and relationships with rural development processes, social farming and social inclusion, innovation policy and knowledge transfer, monitoring and evaluation of rural development policy, short agro-food chains and food net.

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial –
No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

Annex

*Table A.1 - Relation management - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
RELMAN_Man	0.605	0.633	0.684	-0.417	0.146	-0.203	-0.155	0.554	-0.478	0.105	0.106	1.293	0.0425	-0.0556	-0.424
	(0.87)	(1.38)	(1.10)	(-0.89)	(0.34)	(-0.36)	(-0.30)	(1.03)	(-1.12)	(0.24)	(0.22)	(1.68)	(0.10)	(-0.14)	(-0.91)
RELMAN_Group	-0.0124	0.622	0.221	-0.313	-0.571	-0.326	-0.510	0.444	0.376	0.393	-0.407	-0.113	-0.486	-0.308	-0.844*
	(-0.02)	(1.53)	(0.40)	(-0.79)	(-1.52)	(-0.78)	(-1.10)	(0.83)	(0.84)	(0.98)	(-1.22)	(-0.23)	(-1.45)	(-0.81)	(-2.13)
RELMAN_Pman	0.227	0.430	0.281	0.487	0.527	0.526	0.198	0.770	0.150	0.306	0.0535	0.611	0.0280	0.445	0.316
	(0.30)	(0.90)	(0.37)	(0.74)	(0.71)	(1.20)	(0.39)	(1.19)	(0.23)	(0.60)	(0.10)	(0.91)	(0.05)	(0.70)	(0.53)
RELMAN_Assem	0.631	0.799*	0.197	0.767*	-0.569	0.614	0.0762	0.508	0.581	0.400	-0.110	0.173	-0.448	-0.227	-0.343
	(1.10)	(2.31)	(0.42)	(2.07)	(-1.66)	(1.71)	(0.21)	(1.14)	(1.51)	(1.18)	(-0.30)	(0.36)	(-1.29)	(-0.66)	(-1.02)
RELMAN_Net	-0.216	0.692*	0.114	0.0993	0.350	0.392	0.0193	-0.305	-0.178	-0.187	-0.417	0.515	-0.153	0.361	0.187
	(-0.45)	(2.07)	(0.24)	(0.26)	(1.04)	(0.97)	(0.05)	(-0.73)	(-0.46)	(-0.56)	(-1.14)	(1.02)	(-0.44)	(1.04)	(0.46)
RELMAN_Pres	-0.406	0.332	0.189	0.335	-0.331	-0.0336	-0.0487	0.131	0.167	-0.403	-0.0810	0.248	0.114	0.0853	-0.478
	(-0.90)	(1.00)	(0.44)	(0.90)	(-1.03)	(-0.10)	(-0.14)	(0.32)	(0.47)	(-1.17)	(-0.24)	(0.52)	(0.33)	(0.26)	(-1.43)
cu1	-4.830***	-2.505***	-4.438***	-4.532***	-3.525***	-3.849***	-3.844***	-4.456***	-4.626***	-4.087***	-4.471***	-4.315***	-3.293***	-2.149***	-1.332***
	(-3.88)	(-4.42)	(-3.78)	(-4.07)	(-6.36)	(-4.86)	(-6.35)	(-3.88)	(-4.09)	(-5.06)	(-5.58)	(-3.71)	(-7.24)	(-5.42)	(-3.73)
cu2	-4.126***	-1.305**	-3.022***	-3.829***	-2.586***	-3.433***	-2.816***	-3.755***	-3.512***	-2.946***	-2.789***	-3.611***	-2.430***	-0.984**	-0.253
	(-4.50)	(-3.14)	(-4.56)	(-4.72)	(-6.08)	(-4.98)	(-6.06)	(-4.48)	(-5.24)	(-5.30)	(-6.14)	(-4.23)	(-6.64)	(-2.81)	(-0.78)
cut3	-3.182***	-0.634	-2.048***	-2.388***	-1.931***	-2.398***	-1.660***	-3.045***	-2.794***	-2.511***	-2.122***	-2.469***	-2.110***	-0.438	0.382
	(-4.81)	(-1.72)	(-4.07)	(-5.17)	(-5.33)	(-4.63)	(-4.70)	(-4.72)	(-5.60)	(-5.37)	(-5.52)	(-4.16)	(-5.97)	(-1.24)	(-1.18)
cut4	-1.358**	0.524	-0.933*	-1.408***	-0.414	-1.071**	0.324	-2.455***	-2.048***	-1.428***	-0.754*	-0.63	-1.404***	0.702	1.256***
	(-2.66)	-(1.54)	(-2.21)	(-3.75)	(-1.32)	(-2.61)	-(1.02)	(-4.81)	(-4.72)	(-3.64)	(-2.36)	(-1.44)	(-4.00)	-(1.82)	-(3.71)
cut5		1.613***		0.174	0.688*	0.864*		-0.572	0.222	-0.309	0.51		-0.0191	1.711***	2.144***
		-(4.32)		-(0.54)	-(2.04)	-(2.15)		(-1.50)	-(0.63)	(-0.87)	-(1.63)		(-0.06)	-(3.76)	-(5.23)
cut6		3.301***			2.337***					1.259***	2.388***		1.601***	4.491***	3.491***
		-(6.83)			-(5.08)					-(3.45)	-(5.35)		-(4.16)	-(4.13)	-(5.84)
$\chi2$ (df_m)	4.471(6)	20.23(6)	2.349(6)	6.867(6)	10.47(6)	5.346(6)	1.680(6)	4.441(6)	4.980(6)	3.794(6)	3.698(6)	5.427(6)	5.258(6)	3.819(6)	6.459 (6)
Prob ($\chi2$)	0.613	0.00252	0.885	0.333	0.106	0.500	0.947	0.617	0.546	0.705	0.717	0.490	0.511	0.701	0.374
Pseudo R^2	0.0261	0.0377	0.0102	0.0232	0.0202	0.0165	0.00677	0.0224	0.0185	0.0118	0.00789	0.0371	0.00897	0.00763	0.0203
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.2 - Member entry/exit - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
ENTRY_Man	2.100**	0.436	0.429	-0.0108	0.163	0.175	0.0289	0.405	-0.275	0.273	0.144	0.897	-0.196	0.380	0.255
	(2.78)	(1.03)	(0.79)	(-0.03)	(0.42)	(0.45)	(0.07)	(0.91)	(-0.69)	(0.72)	(0.39)	(1.45)	(-0.51)	(1.02)	(0.57)
ENTRY_Group	1.494	0.372	0.0605	0.165	-0.0658	-0.532	-0.712	0.181	0.327	-0.256	0.396	-0.0811	-0.297	0.246	-0.533
	(1.83)	(0.68)	(0.11)	(0.33)	(-0.14)	(-1.14)	(-1.65)	(0.33)	(0.76)	(-0.65)	(0.78)	(-0.14)	(-0.82)	(0.45)	(-1.37)
ENTRY_Pman	-2.078**	0.0264	-1.958**	-1.032	0.780	-0.681	-0.760	-0.812	-0.860	0.285	-0.537	-0.217	0.502	1.006	0.251
	(-2.81)	(0.05)	(-2.93)	(-1.31)	(1.27)	(-1.33)	(-1.25)	(-1.24)	(-1.23)	(0.60)	(-0.89)	(-0.20)	(0.91)	(1.90)	(0.46)
ENTRY_Assem	-0.106	-0.371	-0.319	0.00144	-0.232	-0.0113	0.276	0.122	-0.0500	0.282	-0.345	0.796	-0.640	-0.610	-0.312
	(-0.22)	(-1.05)	(-0.71)	(0.00)	(-0.67)	(-0.03)	(0.74)	(0.30)	(-0.14)	(0.80)	(-0.99)	(1.65)	(-1.58)	(-1.58)	(-0.90)
ENTRY_Net	0.203	0.839	-0.599	0.537	1.195*	0.0468	-0.0430	-1.753	-0.863	0.0419	0.413	-0.162	0.154	1.366*	0.946*
	(0.18)	(0.84)	(-0.96)	(0.78)	(1.97)	(0.05)	(-0.05)	(-1.85)	(-1.72)	(0.09)	(0.48)	(-0.10)	(0.19)	(2.42)	(2.58)
ENTRY_Pres	-0.452	0.0287	-0.875	-0.506	-0.262	0.102	-0.190	-0.652	0.285	-0.158	-0.594	0.0788	-0.359	0.0463	-0.605
	(-0.87)	(0.08)	(-1.84)	(-1.36)	(-0.75)	(0.28)	(-0.52)	(-1.54)	(0.78)	(-0.45)	(-1.65)	(0.16)	(-1.01)	(0.14)	(-1.63)
	-		-											-	-
cut1	4.874***	-3.337***	5.536***	-5.059***	-3.245***	-4.197***	-3.895***	-5.194***	-4.889***	-4.008***	-4.446***	-4.433***	-2.346***	1.360***	3.293***
	(-4.02)	(-6.14)	(-4.56)	(-4.57)	(-6.38)	(-5.72)	(-6.02)	(-4.35)	(-4.41)	(-5.12)	(-5.53)	(-3.98)	(-5.39)	(-4.82)	(-7.24)
	-		-												-
cut2	4.171***	-2.163***	4.128***	-4.359***	-2.300***	-3.783***	-2.867***	-4.496***	-3.765***	-2.870***	-2.763***	-3.727***	-1.138***	-0.241	2.430***
	(-4.48)	(-5.69)	(-5.46)	(-5.27)	(-6.79)	(-6.06)	(-6.34)	(-4.67)	(-5.58)	(-5.81)	(-7.26)	(-4.78)	(-3.55)	(-0.95)	(-6.64)
	-		-												-
cut3	3.188***	-1.523***	3.138***	-2.909***	-1.649***	-2.757***	-1.717***	-3.789***	-3.038***	-2.436***	-2.095***	-2.587***	-0.555	0.422	2.110***
	(-5.09)	(-4.40)	(-5.19)	(-6.98)	(-5.59)	(-6.61)	(-5.39)	(-4.84)	(-5.60)	(-5.72)	(-6.25)	(-5.33)	(-1.80)	-(1.67)	(-5.97)
			-												-
cut4	-1.190**	-0.452	1.929***	-1.923***	-0.165	-1.447***	0.296	-3.165***	-2.290***	-1.359***	-0.701*	-0.756	0.609	1.332***	1.404***
	(-2.89)	(-1.56)	(-4.66)	(-5.63)	(-0.63)	(-4.37)	-(1.10)	(-5.53)	(-5.08)	(-3.67)	(-2.52)	(-1.91)	-(1.91)	-(4.79)	(-4.00)
cut5		0.544*		-0.366	0.907**	0.472		-1.179**	-0.0304	-0.251	0.595*		1.610***	2.232***	-0.0191
		-(1.97)		(-1.23)	-(3.22)	-(1.59)		(-3.14)	(-0.09)	(-0.78)	-(2.05)		-(4.16)	-(6.12)	(-0.06)
cut6		2.160***			2.523***					1.293***	2.483***		4.388***	3.573***	1.601***
$\chi 2$ (df_m)	16.10(6)	3.413(6)	10.87(6)	4.764(6)	5.441(6)	4.103(6)	4.382(6)	6.464(6)	5.579(6)	2.250(6)	6.137(6)	7.030(6)	7.811(6)	10.47(6)	9.730(6)
Prob ($\chi 2$)	0.0132	0.755	0.0923	0.574	0.489	0.663	0.625	0.373	0.472	0.895	0.408	0.318	0.252	0.106	0.137
Pseudo R^2	0.110	0.00841	0.0561	0.0141	0.0110	0.0101	0.0144	0.0375	0.0155	0.00552	0.0144	0.0351	0.0165	0.0200	0.0178
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.3 - Group activity - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

			HEALTH					ENVIRONMENT					CONVENTIONAL			
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
ACTIV_Man	0.474	0.613	0.689	0.182	0.0846	0.273	0.379	1.282*	0.0137	0.123	0.383	0.931	0.236	0.512	0.583
	(0.79)	(1.49)	(1.10)	(0.46)	(0.23)	(0.63)	(0.97)	(2.32)	(0.04)	(0.32)	(0.99)	(1.67)	(0.67)	(1.25)	(1.37)
ACTIV_Group	-0.239	0.808*	0.141	-0.0664	-0.364	-0.000666	-0.714	-0.158	-0.110	-0.520	-0.381	-0.322	-0.0930	-0.135	-0.942*
	(-0.45)	(2.12)	(0.24)	(-0.15)	(-1.00)	(-0.00)	(-1.65)	(-0.32)	(-0.26)	(-1.46)	(-0.96)	(-0.70)	(-0.25)	(-0.33)	(-2.37)
ACTIV_Pman	-0.884	0.659	-0.574	-1.840*	1.034	0.0899	-1.000	-0.697	-0.231	0.590	-0.320	0.998	-0.0503	0.00961	-0.258
	(-1.10)	(0.94)	(-0.88)	(-2.26)	(1.75)	(0.17)	(-1.46)	(-1.21)	(-0.33)	(0.86)	(-0.44)	(0.96)	(-0.06)	(0.01)	(-0.43)
ACTIV_Assem	0.479	-0.0688	-0.114	-0.0182	-0.315	0.259	-0.461	0.0981	0.183	-0.0399	-0.0644	-0.0477	-0.851*	-0.514	-0.780*
	(1.02)	(-0.21)	(-0.24)	(-0.05)	(-0.87)	(0.66)	(-1.28)	(0.22)	(0.51)	(-0.12)	(-0.20)	(-0.10)	(-2.40)	(-1.48)	(-2.23)
ACTIV_Net	1.188	-0.397	-0.203	-0.676	0.514	0.435	0.0550	-0.523	0.305	0.269	-0.312	0.534	0.00601	0.667	0.208
	(1.08)	(-0.67)	(-0.26)	(-1.07)	(0.94)	(0.59)	(0.07)	(-0.81)	(0.62)	(0.69)	(-0.45)	(0.62)	(0.01)	(1.00)	(0.33)
ACTIV_Pres	0.795	0.513	-0.236	0.488	-0.730	0.349	0.322	0.0834	0.589	-0.0255	-0.309	0.509	-0.417	0.226	-0.722
	(1.44)	(1.41)	(-0.50)	(1.08)	(-1.86)	(0.83)	(0.82)	(0.18)	(1.38)	(-0.06)	(-0.80)	(0.99)	(-1.12)	(0.59)	(-1.87)
	-		-											-	-
cut1	4.381***	-3.010***	4.874***	-5.082***	-3.596***	-3.751***	-4.192***	-4.704***	-4.583***	-4.193***	-4.346***	-4.566***	-2.524***	1.513***	3.652***
	(-3.76)	(-5.15)	(-3.96)	(-4.15)	(-5.86)	(-4.77)	(-6.10)	(-3.99)	(-4.08)	(-5.02)	(-5.52)	(-3.85)	(-5.17)	(-4.57)	(-7.03)
	-		-												-
cut2	3.678***	-1.816***	3.465***	-4.379***	-2.654***	-3.336***	-3.151***	-4.002***	-3.462***	-3.062***	-2.656***	-3.863***	-1.325**	-0.442	2.794***
	(-4.08)	(-4.61)	(-4.57)	(-4.75)	(-5.32)	(-5.13)	(-6.95)	(-4.57)	(-5.15)	(-5.69)	(-6.70)	(-4.26)	(-3.17)	(-1.37)	(-6.09)
	-		-												-
cut3	2.714***	-1.143**	2.497***	-2.869***	-2.000***	-2.316***	-1.976***	-3.292***	-2.739***	-2.630***	-1.984***	-2.725***	-0.751	0.191	2.479***
	(-4.73)	(-3.10)	(-4.37)	(-5.63)	(-4.52)	(-5.46)	(-5.02)	(-4.57)	(-5.36)	(-5.67)	(-5.95)	(-4.62)	(-1.90)	-(0.59)	(-5.60)
															-
cut4	-0.853*	-0.0455	-1.373**	-1.818***	-0.471	-1.013**	0.0763	-2.702***	-1.994***	-1.551***	-0.609*	-0.895*	0.425	1.078**	1.729***
	(-2.10)	(-0.14)	(-3.01)	(-4.58)	(-1.35)	(-2.65)	-(0.21)	(-4.53)	(-5.14)	(-3.81)	(-2.06)	(-2.11)	(-1.10)	-(3.10)	(-4.43)
cut5		0.951**		-0.199	0.648	0.899*		-0.802	0.239	-0.422	0.650*		1.436**	1.983***	-0.259
		-(2.87)		(-0.58)	-(1.94)	-(2.38)		(-1.95)	-(0.72)	(-1.22)	-(2.20)		-(3.25)	-(5.34)	-(0.75)
cut6		2.620***			2.304***					1.147***	2.524***		4.214***	3.357***	1.406***
		-(6.32)			-(5.70)					-(3.37)	-(5.82)		-(4.00)	-(5.36)	-(3.78)
$\chi 2$ (df_m)	6.893(6)	7.496(6)	2.014(6)	8.889(6)	9.460(6)	2.220(6)	7.868(6)	8.746(6)	2.794(6)	4.564(6)	4.183(6)	7.599(6)	7.370(6)	5.104(6)	15.80(6)
Prob ($\chi 2$)	0.331	0.277	0.918	0.180	0.149	0.898	0.248	0.188	0.834	0.601	0.652	0.269	0.288	0.531	0.0148
Pseudo R^2	0.0423	0.0221	0.0132	0.0333	0.0224	0.00778	0.0266	0.0362	0.0109	0.00900	0.00968	0.0332	0.0180	0.0127	0.0414
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.4 - Selection of producers - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
SELECT_Man	0.904	0.328	0.904	0.301	0.677	0.0573	0.158	0.796	-0.299	0.115	0.501	0.591	-0.124	0.381	0.474
	(1.58)	(0.87)	(1.59)	(0.77)	(1.59)	(0.14)	(0.40)	(1.66)	(-0.74)	(0.29)	(1.36)	(1.02)	(-0.31)	(0.90)	(1.1)
SELECT_Group	0.349	-0.164	0.231	0.203	-0.0317	0.0596	0.185	-0.467	-0.519	-0.482	-0.0205	0.108	-0.395	0.110	-0.447
	(0.73)	(-0.48)	(0.49)	(0.54)	(-0.09)	(0.17)	(0.50)	(-1.09)	(-1.32)	(-1.43)	(-0.06)	(0.25)	(-1.06)	(0.30)	(-1.34)
SELECT_Pman	0.149	0.210	0.837	0.440	0.909*	0.558	-0.0517	0.113	-0.638	0.144	0.0932	0.298	-0.0767	1.065**	0.293
	(0.30)	(0.54)	(1.54)	(1.02)	(2.29)	(1.40)	(-0.13)	(0.25)	(-1.63)	(0.42)	(0.23)	(0.61)	(-0.22)	(2.87)	(0.85)
SELECT_Assem	0.459	-0.264	0.215	-0.181	-0.506	0.0618	-0.419	0.271	-0.389	-0.113	-0.270	0.0656	-0.719*	-0.754*	-0.920**
	(0.96)	(-0.77)	(0.45)	(-0.50)	(-1.33)	(0.17)	(-1.24)	(0.63)	(-1.10)	(-0.34)	(-0.82)	(0.15)	(-2.14)	(-2.28)	(-2.62)
SELECT_Net	-0.138	0.0535	-0.322	-0.377	-0.526	-0.157	0.00559	-0.637	-0.336	0.169	-0.845	0.815	0.148	-0.907*	-0.386
	(-0.24)	(0.12)	(-0.46)	(-0.68)	(-1.19)	(-0.31)	(0.01)	(-1.11)	(-0.73)	(0.38)	(-1.85)	(0.92)	(0.35)	(-2.05)	(-0.68)
SELECT_Pres	0.258	0.0123	0.0802	0.0942	-0.313	0.0946	0.496	0.401	-0.324	-0.295	-0.324	0.00370	-0.333	-0.294	-0.864*
	(0.43)	(0.03)	(0.15)	(0.23)	(-0.77)	(0.25)	(1.31)	(0.75)	(-0.71)	(-0.79)	(-0.80)	(0.01)	(-1.01)	(-0.85)	(-2.13)
cut1	-4.190***	-3.472***	-4.267***	-4.700***	-3.317***	-3.895***	-3.771***	-4.734***	-5.748***	-4.358***	-4.402***	-4.449***	-2.570***	-1.684***	-3.600***
	(-3.44)	(-5.84)	(-3.47)	(-4.03)	(-5.21)	(-4.95)	(-6.05)	(-3.88)	(-4.50)	(-5.02)	(-5.32)	(-3.68)	(-5.69)	(-5.22)	(-5.94)
ut2	-3.481***	-2.294***	-2.841***	-3.995***	-2.365***	-3.481***	-2.740***	-4.030***	-4.634***	-3.221***	-2.706***	-3.748***	-1.375***	-0.519	-2.741***
	(-3.49)	(-5.07)	(-3.89)	(-4.66)	(-4.71)	(-5.26)	(-6.30)	(-4.39)	(-5.51)	(-5.70)	(-6.57)	(-4.22)	(-3.45)	(-1.61)	(-5.52)
cut3	-2.530***	-1.640***	-1.854**	-2.552***	-1.699***	-2.453***	-1.581***	-3.314***	-3.911***	-2.781***	-2.040***	-2.625***	-0.808*	0.169	-2.421***
	(-3.65)	(-3.53)	(-3.03)	(-5.21)	(-3.65)	(-5.14)	(-4.50)	(-4.54)	(-6.02)	(-5.92)	(-5.64)	(-4.71)	(-2.13)	-(0.53)	(-4.90)
cut4	-0.713	-0.57	-0.724	-1.581***	-0.131	-1.147**	0.418	-2.716***	-3.151***	-1.700***	-0.657*	-0.814	0.355	1.125**	-1.668***
	(-1.38)	(-1.30)	(-1.40)	(-3.83)	(-0.31)	(-2.84)	-(1.22)	(-4.55)	(-5.78)	(-3.93)	(-2.07)	(-1.80)	-(0.92)	-(3.19)	(-3.81)
cut5		0.412		-0.0362	0.996*	0.757		-0.811	-0.845	-0.574	0.642*		1.356**	2.048***	-0.151
		-(0.95)		(-0.09)	-(2.35)	-(1.91)		(-1.75)	(-1.93)	(-1.53)	-(2.04)		-(2.94)	-(4.80)	(-0.39)
cut6		2.016***			2.665***					0.991**	2.537***		4.127***	3.418***	1.557***
		-(4.14)			-(5.20)					-(2.67)	-(5.47)		-(3.84)	-(5.75)	-(3.63)
$\chi2$ (df_m)	3.583(6)	3.047(6)	5.688(6)	2.107(6)	11.01(6)	2.232(6)	3.591(6)	6.481(6)	7.240(6)	2.835(6)	6.011(6)	3.089(6)	7.382(6)	15.59(6)	18.24(6)
Prob ($\chi2$)	0.733	0.803	0.459	0.910	0.0880	0.897	0.732	0.372	0.299	0.829	0.422	0.798	0.287	0.0161	0.00565
Pseudo R^2	0.0234	0.00588	0.0282	0.00906	0.0323	0.00718	0.0117	0.0328	0.0256	0.00836	0.0152	0.0191	0.0157	0.0405	0.0416
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.5 - Product basket - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
BASK_Man	1.117	0.368	0.640	0.209	0.643	0.422	0.217	0.596	-0.340	0.175	0.526	0.853	0.0644	0.246	0.741
	(1.74)	(0.92)	(1.11)	(0.54)	(1.64)	(1.07)	(0.56)	(1.21)	(-0.82)	(0.48)	(1.40)	(1.47)	(0.17)	(0.63)	(1.65)
BASK_Group	0.236	-0.0836	-0.566	-0.293	0.164	-0.173	-0.121	-0.639	-0.226	-0.583	0.120	-0.600	-0.615	-0.206	-0.648
	(0.48)	(-0.24)	(-1.12)	(-0.72)	(0.45)	(-0.46)	(-0.33)	(-1.49)	(-0.59)	(-1.62)	(0.34)	(-1.38)	(-1.60)	(-0.57)	(-1.87)
BASK_Pman	-0.231	0.558	-0.205	-0.948	1.013*	-0.0807	-0.457	-1.173*	-1.061*	0.522	-0.385	0.663	0.406	0.651	0.342
	(-0.39)	(1.21)	(-0.36)	(-1.79)	(2.20)	(-0.15)	(-0.96)	(-2.41)	(-2.29)	(1.37)	(-0.66)	(0.99)	(0.95)	(1.48)	(0.72)
BASK_Assem	0.202	-0.183	0.172	-0.0306	-0.581	0.312	-0.211	0.269	-0.252	-0.0510	-0.0125	0.325	-0.772*	-0.597	-0.774*
	(0.42)	(-0.57)	(0.35)	(-0.08)	(-1.52)	(0.83)	(-0.61)	(0.61)	(-0.68)	(-0.15)	(-0.04)	(0.71)	(-2.09)	(-1.75)	(-2.08)
BASK_Net	-0.405	0.171	-0.305	-0.412	-0.564	0.760	0.266	0.765	0.935	0.123	-0.970	1.135	-0.381	-0.561	-0.981
	(-0.61)	(0.31)	(-0.37)	(-0.53)	(-0.97)	(0.78)	(0.29)	(0.91)	(1.43)	(0.22)	(-1.65)	(0.93)	(-0.71)	(-0.92)	(-1.92)
BASK_Pres	0.130	0.148	-0.386	-0.303	-0.287	0.0239	0.580	-0.153	-0.445	-0.0661	-0.884	0.131	-0.428	-0.336	-0.527
	(0.21)	(0.34)	(-0.68)	(-0.67)	(-0.70)	(0.06)	(1.41)	(-0.29)	(-0.89)	(-0.14)	(-1.93)	(0.27)	(-1.11)	(-0.79)	(-1.14)
cut1	- 4.495*** (-3.65)	- -3.339*** (-5.47)	- 4.960*** (-3.93)	- -5.203*** (-4.26)	- -3.386*** (-5.34)	- -3.829*** (-4.98)	- -3.815*** (-6.06)	- -5.059*** (-4.09)	- -5.424*** (-4.41)	- -4.257*** (-5.04)	- -4.372*** (-5.33)	- -4.529*** (-3.80)	- -2.718*** (-5.06)	- 1.824*** (-5.26)	- 3.619*** (-6.41)
cut2	- 3.791*** (-3.75)	- -2.159*** (-5.07)	- 3.546*** (-4.55)	- -4.503*** (-4.84)	- -2.437*** (-4.58)	- -3.414*** (-5.31)	- -2.787*** (-6.78)	- -4.360*** (-4.54)	- -4.306*** (-5.34)	- -3.119*** (-5.76)	- -2.677*** (-6.55)	- -3.827*** (-4.19)	- -1.505** (-3.20)	- -0.715* (-2.07)	- 2.747*** (-5.70)
cut3	- 2.841*** (-4.15)	- -1.505*** (-3.72)	- 2.571*** (-4.02)	- -3.048*** (-5.50)	- -1.775*** (-3.66)	- -2.396*** (-5.32)	- -1.634*** (-4.92)	- -3.648*** (-4.86)	- -3.577*** (-6.08)	- -2.680*** (-5.84)	- -2.006*** (-5.56)	- -2.696*** (-4.49)	- -0.913* (-2.04)	- -0.0754 (-0.22)	- 2.419*** (-5.23)
cut4	-1.016* (-2.03)	-0.436 (-1.19)	-1.439** (-2.80)	-2.058*** (-4.33)	-0.224 (-0.56)	-1.096** (-2.85)	0.372 -(1.16)	-3.051*** (-5.12)	-2.815*** (-5.87)	-1.592*** (-3.66)	-0.587* (-1.97)	-0.849* (-2.01)	0.317 -(0.73)	0.820* -(2.23)	- 1.663*** (-3.97)
cut5		0.551 -(1.52)		-0.485 (-1.17)	0.892* -(2.27)	0.830* -(2.18)		-1.101* (-2.46)	-0.517 (-1.29)	-0.442 (-1.18)	0.731* -(2.47)		1.361** -(2.84)	1.728*** -(4.00)	-0.202 (-0.53)
cut6		2.166*** -(4.93)			2.567*** -(5.17)					1.145** -(3.09)	2.628*** -(5.43)		4.160*** -(3.90)	3.092*** -(4.98)	1.456*** -(3.32)
$\chi 2$ (df_m)	3.693(6)	3.139(6)	4.958(6)	5.580(6)	8.838(6)	2.480(6)	4.921(6)	12.00(6)	6.330(6)	5.737(6)	12.75(6)	8.071(6)	15.46(6)	9.684(6)	20.81(6)
Prob ($\chi 2$)	0.718	0.791	0.549	0.472	0.183	0.871	0.554	0.0619	0.387	0.453	0.0472	0.233	0.0169	0.139	0.00199
Pseudo R^2	0.0269	0.00746	0.0232	0.0200	0.0282	0.0107	0.0131	0.0470	0.0269	0.0141	0.0229	0.0418	0.0312	0.0209	0.0503
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.6 - Products planning - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
PRODPLAN_Man	0.412	0.527	0.475	0.391	0.245	0.33	-0.00281	1.802	0.0359	1.038*	1.034	15.03***	-0.0565	0.403	0.637
	-(0.48)	-(0.85)	-(0.60)	-(0.65)	-(0.40)	-(0.53)	(-0.00)	-(1.67)	-(0.07)	-(2.07)	-(1.77)	-(41.05)	(-0.09)	-(0.61)	-(0.84)
PRODPLAN_Group	-0.567	0.539	-0.567	-0.0113	-0.62	0.576	-0.124	-0.159	-0.268	-0.348	-0.316	0.464	-0.344	-0.0773	-0.852
	(-0.94)	(-0.95)	(-0.97)	(-0.02)	(-1.43)	(-1.00)	(-0.24)	(-0.28)	(-0.55)	(-0.70)	(-0.67)	(-0.56)	(-0.72)	(-0.15)	(-1.89)
PRODPLAN_Pman	-0.16	1.000	-0.814	-0.965	1.078	0.193	0.519	-0.775	-0.278	0.999	0.099	-0.326	0.23	-0.0673	0.507
	(-0.21)	-(1.63)	(-1.04)	(-1.56)	-(1.33)	-(0.25)	(-0.98)	(-1.14)	(-0.40)	-(1.42)	(-0.12)	(-0.50)	-(0.41)	(-0.08)	-(0.65)
PRODPLAN_Assem	0.364	-0.283	0.0485	-0.579	-0.613	-0.22	-0.355	-0.138	0.166	-0.0952	-0.139	-0.374	-0.659	-0.675	-0.419
	-(0.60)	(-0.67)	-(0.10)	(-1.21)	(-1.59)	(-0.55)	(-0.98)	(-0.30)	-(0.35)	(-0.23)	(-0.30)	(-0.70)	(-1.69)	(-1.46)	(-0.97)
PRODPLAN_Net	15.01***	-0.733**	14.01***	13.77***	0.608	-0.47	-0.475	13.80***	0.858	0.731*	0.33	14.80***	1.123	-0.985	0.176
	-(21.87)	(-2.58)	-(20.31)	-(21.84)	-(0.82)	(-0.49)	(-0.43)	-(21.42)	-(0.72)	-(2.39)	-(0.40)	-(22.39)	-(1.44)	(-1.02)	-(0.24)
PRODPLAN_Pres	-0.13	0.576	-0.532	-0.199	0.093	-0.45	-0.0975	0.00173	0.164	-0.359	-0.973	-0.414	-0.676	-0.395	-1.320**
	(-0.19)	-(1.24)	(-0.82)	(-0.35)	-(0.16)	(-0.97)	(-0.23)	(0.00)	-(0.26)	(-0.53)	(-1.75)	(-0.75)	(-1.51)	(-0.95)	(-2.62)
cut1	-4.796***	-3.273***	-4.981***	-5.025***	-3.288***	-4.131***	-3.794***	-4.817***	-4.794***	-4.054***	-4.268***	-4.812***	-2.117***	-1.564***	-3.050***
	(-4.53)	(-5.84)	(-4.58)	(-4.72)	(-6.31)	(-5.57)	(-6.01)	(-4.54)	(-4.61)	(-5.26)	(-5.49)	(-4.54)	(-6.13)	(-6.30)	(-6.99)
cut2	-4.095***	-2.104***	-3.559***	-4.325***	-2.351***	-3.716***	-2.771***	-4.116***	-3.679***	-2.912***	-2.573***	-4.111***	-0.928***	-0.487*	-2.179***
	(-5.20)	(-6.43)	(-6.19)	(-5.44)	(-6.44)	(-6.19)	(-6.75)	(-5.21)	(-5.88)	(-6.50)	(-6.50)	(-5.21)	(-3.41)	(-2.20)	(-6.47)
cut3	-3.156***	-1.458***	-2.579***	-2.879***	-1.698***	-2.691***	-1.626***	-3.407***	-2.960***	-2.474***	-1.891***	-2.976***	-0.355	0.145	-1.853***
	(-6.20)	(-5.12)	(-5.98)	(-6.78)	(-5.53)	(-6.87)	(-5.38)	(-5.56)	(-6.50)	(-6.80)	(-6.15)	(-6.19)	(-1.40)	(-0.65)	(-6.07)
cut4	-1.348***	-0.354	-1.451***	-1.889***	-0.201	-1.391***	0.358	-2.818***	-2.214***	-1.382***	-0.491*	-1.126***	0.815**	1.027***	-1.121***
	(-4.64)	(-1.39)	(-4.72)	(-6.26)	(-0.83)	(-5.09)	(-1.48)	(-5.85)	(-6.53)	(-4.82)	(-2.12)	(-4.01)	(-3.06)	(-4.04)	(-4.42)
cut5		0.656*		-0.299	0.879***	0.524*		-0.919***	0.00533	-0.242	0.802***		1.821***	1.917***	0.276
		(-2.49)		(-1.31)	-(3.44)	(-2.22)		(-3.32)	-(0.02)	(-0.99)	(-3.37)		-(5.41)	(-5.92)	-(1.18)
cut6		2.271***			2.524***					1.355***	2.725***		4.612***	3.271***	1.903***
		-(6.69)			-(6.57)					-(4.95)	-(6.33)		-(4.45)	-(6.09)	-(5.91)
χ2 (df_m)	528.6 (6)	15.51 (6)	472.5 (6)	527.4 (6)	7.288 (6)	3.074 (6)	2.492 (6)	505.6 (6)	1.021 (6)	11.51 (6)	6.072 (6)	2037.1 (6)	8.972 (6)	5.326 (6)	13.21 (6)
Prob (χ2)	5.71E-111	0.0166	6.93E-99	1.04E-110	0.295	0.8	0.869	5.11E-106	0.985	0.0738	0.415	0	0.175	0.503	0.0397
Pseudo R^2	0.0174	0.0132	0.0217	0.0296	0.0168	0.00916	0.00575	0.0387	0.00399	0.0199	0.0185	0.0651	0.0167	0.0108	0.0296
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.7 - Purchasing planning - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

	HEALTH					ENVIRONMENT					CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
PURCHPLA_Man	0.167	0.324	0.128	0.0336	0.0844	0.199	0.191	0.565	-0.355	-0.283	0.456	0.585	0.0586	0.0237	0.428
	(0.30)	(0.83)	(0.24)	(0.08)	(0.22)	(0.48)	(0.52)	(1.17)	(-0.96)	(-0.73)	(1.33)	(1.02)	(0.15)	(0.06)	(1.11)
PURCHPLAN_Group	-0.588	0.317	-0.376	0.0850	-0.324	0.424	-0.0411	-0.164	-0.296	-1.083**	-0.167	-0.128	-0.384	0.308	-1.054**
	(-1.21)	(0.82)	(-0.77)	(0.22)	(-0.90)	(0.98)	(-0.10)	(-0.33)	(-0.77)	(-3.20)	(-0.46)	(-0.24)	(-0.96)	(0.79)	(-2.90)
PURCHPLA_Pman	-0.459	0.517	0.00909	-0.0941	0.250	0.285	0.359	0.200	0.0527	-0.122	-0.532	0.119	-0.263	0.708*	-0.392
	(-0.92)	(1.48)	(0.02)	(-0.25)	(0.74)	(0.75)	(0.99)	(0.43)	(0.15)	(-0.34)	(-1.57)	(0.24)	(-0.76)	(2.16)	(-1.13)
PURCHPLAN_Assem	0.304	-0.523	0.0506	-0.0255	-0.873*	0.248	0.153	0.229	-0.230	-0.516	0.0344	-0.456	-0.867*	-0.786*	-0.737*
	(0.67)	(-1.53)	(0.11)	(-0.07)	(-2.31)	(0.68)	(0.42)	(0.55)	(-0.66)	(-1.52)	(0.11)	(-1.00)	(-2.44)	(-2.34)	(-2.19)
PURCHPLAN_Net	0.461	0.675	0.870	0.514	0.230	0.745	0.120	-0.191	-0.302	0.273	-0.142	0.994	-0.601	0.272	-0.164
	(0.69)	(1.24)	(1.05)	(0.84)	(0.42)	(1.50)	(0.25)	(-0.36)	(-0.65)	(0.79)	(-0.33)	(1.22)	(-1.49)	(0.65)	(-0.32)
PURCHPLAN_Pres	0.239	0.176	-0.0932	0.246	-0.279	0.131	0.564	0.128	0.113	-0.256	-0.420	0.136	-0.462	-0.271	-0.64
	(0.46)	(0.46)	(-0.19)	(0.61)	(-0.82)	(0.34)	(1.49)	(0.28)	(0.28)	(-0.65)	(-1.10)	(0.29)	(-1.20)	(-0.70)	(-1.49)
cut1	-4.950***	-3.196***	-4.818***	-4.696***	-3.735***	-3.571***	-3.285***	-4.542***	-5.140***	-5.036***	-4.463***	-4.819***	-2.846***	-1.429***	-2.849***
	(-3.76)	(-5.46)	(-3.67)	(-3.94)	(-5.75)	(-4.54)	(-4.83)	(-3.69)	(-4.19)	(-5.17)	(-5.47)	(-3.73)	(-5.68)	(-3.77)	(-4.94)
cut2	-4.250***	-2.004***	-3.409***	-3.995***	-2.800***	-3.157***	-2.256***	-3.840***	-4.027***	-3.895***	-2.773***	-4.120***	-1.624***	-0.298	-2.008***
	(-3.94)	(-4.38)	(-4.51)	(-4.62)	(-5.43)	(-4.73)	(-4.59)	(-3.98)	(-4.85)	(-5.92)	(-5.96)	(-4.29)	(-3.79)	(-0.81)	(-4.30)
cut3	-3.308***	-1.331**	-2.442***	-2.562***	-2.147***	-2.132***	-1.097**	-3.127***	-3.307***	-3.447***	-2.107***	-2.985***	-1.039*	0.365	-1.697***
	(-4.02)	(-2.90)	(-3.59)	(-5.47)	(-4.54)	(-4.15)	(-2.82)	(-3.91)	(-5.34)	(-6.35)	(-4.62)	(-4.66)	(-2.44)	(-0.99)	(-3.79)
cut4	-1.484*	-0.225	-1.322*	-1.596***	-0.578	-0.817	0.906*	-2.534***	-2.557***	-2.326***	-0.733	-1.152*	0.167	1.286***	-1.002*
	(-2.55)	(-0.56)	(-2.24)	(-3.72)	(-1.43)	(-1.92)	(-2.41)	(-4.00)	(-5.01)	(-4.83)	(-1.92)	(-2.08)	(-0.40)	(-3.42)	(-2.41)
cut5		0.778		-0.0579	0.54	1.123**		-0.669	-0.319	-1.130**	0.547		1.208**	2.191***	0.352
		-(1.96)		(-0.14)	-(1.35)	-(2.61)		(-1.32)	(-0.73)	(-2.61)	-(1.46)		-(2.61)	-(5.11)	-(0.89)
cut6		2.421***			2.173***					0.516	2.432***		3.993***	3.536***	1.950***
		-(5.32)			-(4.69)					-(1.24)	-(4.73)		-(3.89)	-(6.03)	-(4.09)
$\chi2$ (df_m)	3.397(6)	7.489(6)	1.839(6)	1.832(6)	10.46(6)	3.715(6)	3.626(6)	2.326(6)	2.316(6)	18.24(6)	5.537(6)	5.843(6)	11.69(6)	9.644(6)	18.64(6)
Prob ($\chi2$)	0.758	0.278	0.934	0.934	0.107	0.715	0.727	0.887	0.888	0.00566	0.477	0.441	0.0694	0.140	0.00483
Pseudo R^2	0.0194	0.0201	0.0118	0.00608	0.0251	0.0150	0.0123	0.0127	0.00815	0.0331	0.0120	0.0302	0.0270	0.0248	0.0456
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.8 - Purchasing orders - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

			HEALTH					ENVIRONMENT					CONVENTIONAL		
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
PURCHORD_Man	0.262	0.329	0.725	-0.738	0.464	-0.126	0.0734	0.734	-0.279	-0.284	0.565	1.026	-0.195	-0.391	0.468
	(0.37)	(0.65)	(0.92)	(-1.45)	(0.92)	(-0.29)	(0.15)	(1.13)	(-0.59)	(-0.54)	(1.03)	(1.32)	(-0.38)	(-0.81)	(0.79)
PURCHORD_Group	0.146	0.129	-0.0119	0.456	0.103	0.305	-0.106	-0.334	0.142	-0.0645	0.406	0.518	-0.122	0.426	-0.601
	(0.29)	(0.39)	(-0.03)	(1.21)	(0.28)	(0.79)	(-0.28)	(-0.71)	(0.37)	(-0.17)	(1.10)	(0.90)	(-0.33)	(1.09)	(-1.77)
PURCHORD_Pman	-0.395	-0.372	-0.269	0.205	0.293	0.539	0.431	-0.163	-0.462	-0.0393	-0.0885	-0.185	0.00528	0.670	0.0402
	(-0.81)	(-1.05)	(-0.59)	(0.55)	(0.89)	(1.39)	(1.17)	(-0.41)	(-1.22)	(-0.11)	(-0.24)	(-0.41)	(0.01)	(1.86)	(0.11)
PURCHORD_Assem	0.145	-0.151	0.262	0.254	-0.463	-0.226	0.227	-0.00934	-0.608	0.314	0.503	0.0274	-0.0548	-0.402	-0.025
	(0.24)	(-0.36)	(0.46)	(0.55)	(-1.22)	(-0.52)	(0.51)	(-0.02)	(-1.45)	(0.68)	(0.99)	(0.05)	(-0.11)	(-0.77)	(-0.06)
PURCHORD_Net	0.862	0.527	0.732	0.618	-0.479	1.356*	0.530	0.551	-0.269	0.319	-0.349	0.0425	-0.653	0.114	0.395
	(0.80)	(0.66)	(0.61)	(0.99)	(-0.52)	(2.20)	(1.01)	(0.69)	(-0.48)	(0.74)	(-0.56)	(0.05)	(-1.38)	(0.17)	(0.56)
PURCHORD_Pres	-0.102	0.0541	-0.0157	0.0640	0.148	0.408	0.398	0.488	-0.273	-0.574	-0.415	-0.170	-0.439	-0.0454	-0.312
	(-0.18)	(0.12)	(-0.03)	(0.15)	(0.42)	(1.07)	(0.98)	(0.84)	(-0.57)	(-1.37)	(-0.88)	(-0.33)	(-1.01)	(-0.12)	(-0.82)
cut1	4.950***	-3.531***	4.833***	-4.596***	-3.000***	-3.633***	-3.333***	-4.831***	-5.355***	-4.243***	-4.033***	-4.732***	-2.098***	-1.014**	2.849***
	(-4.63)	(-6.23)	(-4.52)	(-4.37)	(-5.30)	(-4.48)	(-5.15)	(-4.57)	(-4.88)	(-5.24)	(-4.80)	(-4.47)	(-4.66)	(-3.09)	(-4.94)
cut2	4.248***	-2.364***	3.422***	-3.896***	-2.059***	-3.218***	-2.299***	-4.126***	-4.244***	-3.105***	-2.345***	-4.031***	-0.919*	0.0815	2.008***
	(-4.70)	(-5.26)	(-4.90)	(-4.80)	(-4.62)	(-4.70)	(-4.69)	(-5.61)	(-5.54)	(-5.38)	(-4.86)	(-5.90)	(-2.30)	(-0.24)	(-4.30)
cut3	3.303***	-1.719***	2.452***	-2.447***	-1.411***	-2.182***	-1.140**	-3.412***	-3.528***	-2.665***	-1.676***	-2.900***	-0.355	0.731*	1.697***
	(-5.53)	(-4.29)	(-4.47)	(-4.69)	(-3.77)	(-4.40)	(-2.98)	(-5.49)	(-5.81)	(-5.33)	(-3.84)	(-6.29)	(-0.91)	(-2.08)	(-3.79)
cut4	1.494***	-0.639	-1.332**	-1.467***	0.0692	-0.853*	0.850*	-2.820***	-2.769***	-1.576***	-0.314	-1.088**	0.787	1.636***	-1.002*
	(-3.48)	(-1.80)	(-2.97)	(-3.39)	-(0.21)	(-2.12)	(-2.30)	(-6.06)	(-5.63)	(-3.84)	(-0.86)	(-2.67)	(-1.95)	(-4.30)	(-2.41)
cut5		0.35		0.0843	1.121**	1.105**		-0.950*	-0.485	-0.454	0.950**		1.776***	2.539***	0.352
		-(1.01)		-(0.22)	-(3.27)	-(2.74)		-(2.57)	(-1.28)	(-1.17)	-(2.63)		-(3.85)	-(5.73)	-(0.89)
cut6		1.960***			2.727***					1.100**	2.851***		4.547***	3.886***	1.950***
		-(4.99)			-(6.36)					-(2.67)	-(5.87)		-(4.33)	-(6.14)	-(4.09)
$\chi2$ (df_m)	1.606(6)	2.263(6)	1.901(6)	4.431(6)	3.725(6)	8.590(6)	3.283(6)	3.318(6)	5.030(6)	3.257(6)	3.965(6)	3.644(6)	4.670(6)	5.448(6)	5.980(6)
Prob ($\chi2$)	0.952	0.894	0.929	0.619	0.714	0.198	0.773	0.768	0.540	0.776	0.681	0.725	0.587	0.488	0.425
Pseudo R^2	0.0133	0.00664	0.0126	0.0147	0.00893	0.0254	0.0104	0.0167	0.0178	0.00791	0.0113	0.0193	0.00826	0.0156	0.0129
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org

*Table A.9 - Logistic - OGLM estimates by positions and resources uses objectives (t statistics in parentheses: * p<0.05, ** p<0.01, *** p<0.001)*

			HEALTH					ENVIRONMENT				CONVENTIONAL				
	SAFETY	DIRECTING	NORESID	NOPRESERV	BABYFOOD	PRODZONE	CLOSEZONE	ENVIMP	ENHLOG	TRADGEN	LOWPRICE	SOCRESP	ELABFOOD	AVAILAB	TRADIT
LOGIST_Man	1.299	0.485	0.817	-0.352	0.370	0.125	0.0967	0.666	-0.227	0.0512	0.394	0.543	-0.107	0.158	0.43
	(1.64)	(1.25)	(1.27)	(-0.84)	(0.91)	(0.31)	(0.21)	(1.33)	(-0.54)	(0.12)	(0.90)	(0.92)	(-0.26)	(0.37)	(1.00)
LOGIST_Group	0.381	0.0179	-0.147	0.498	-0.379	-0.217	-0.0472	0.334	0.438	-0.250	-0.280	0.928	-0.814*	-0.535	-0.892*
	(0.77)	(0.06)	(-0.32)	(1.30)	(-1.06)	(-0.60)	(-0.13)	(0.79)	(1.17)	(-0.74)	(-0.80)	(1.80)	(-2.44)	(-1.52)	(-2.56)
LOGIST_Pman	-0.778	-0.343	0.135	0.339	0.348	0.329	0.271	0.362	-0.300	-0.122	0.0307	0.164	-0.237	0.536	0.306
	(-1.53)	(-1.00)	(0.30)	(0.95)	(1.09)	(0.92)	(0.78)	(0.90)	(-0.84)	(-0.34)	(0.09)	(0.38)	(-0.71)	(1.65)	(0.88)
LOGIST_Assem	0.740	-0.637	0.339	0.291	-0.872*	-0.253	-0.325	0.309	-0.407	0.0937	-0.196	0.151	-0.656	-1.154**	-0.231
	(1.18)	(-1.75)	(0.68)	(0.69)	(-2.29)	(-0.73)	(-0.84)	(0.67)	(-0.99)	(0.22)	(-0.52)	(0.28)	(-1.55)	(-2.59)	(-0.55)
LOGIST_Net	-0.182	1.137*	1.692	0.743	-0.194	0.921	0.0555	-0.105	-0.241	0.224	-0.217	0.915	0.00768	0.555	-0.198
	(-0.31)	(2.27)	(1.48)	(1.43)	(-0.39)	(1.77)	(0.12)	(-0.22)	(-0.56)	(0.62)	(-0.51)	(1.09)	(0.02)	(1.37)	(-0.42)
LOGIST_Pres	-0.218	0.219	0.0117	0.448	0.434	0.00894	0.176	-0.0369	-0.149	-0.377	-0.223	-0.262	0.0255	0.265	-0.255
	(-0.41)	(0.53)	(0.02)	(1.00)	(1.16)	(0.02)	(0.43)	(-0.07)	(-0.34)	(-1.00)	(-0.50)	(-0.53)	(0.07)	(0.72)	(-0.63)
	-		-											-	-
cut1	4.982***	-3.560***	4.445***	-4.292***	-3.278***	-3.949***	-3.601***	-4.342***	-5.113***	-4.282***	-4.284***	-4.315***	-2.539***	1.457***	2.977***
	(-4.52)	(-6.87)	(-4.15)	(-4.10)	(-5.21)	(-4.69)	(-5.80)	(-4.13)	(-4.66)	(-5.35)	(-4.90)	(-4.06)	(-5.78)	(-4.50)	(-5.48)
	-		-												-
cut2	4.277***	-2.373***	3.032***	-3.591***	-2.342***	-3.536***	-2.578***	-3.641***	-3.996***	-3.149***	-2.599***	-3.615***	-1.325***	-0.307	2.119***
	(-4.48)	(-5.17)	(-4.10)	(-4.49)	(-4.90)	(-4.99)	(-5.55)	(-4.92)	(-5.97)	(-5.55)	(-5.48)	(-4.95)	(-3.54)	(-1.06)	(-4.86)
	-		-												-
cut3	3.328***	-1.710***	2.057***	-2.146***	-1.685***	-2.514***	-1.433***	-2.929***	-3.276***	-2.717***	-1.934***	-2.488***	-0.752*	0.369	1.802***
	(-5.10)	(-3.89)	(-3.79)	(-4.49)	(-4.36)	(-5.14)	(-4.11)	(-4.85)	(-5.73)	(-5.31)	(-4.50)	(-5.77)	(-2.10)	-(1.25)	(-4.36)
cut4	-1.458**	-0.596	-0.918*	-1.168**	-0.149	-1.194**	0.549	-2.340***	-2.520***	-1.642***	-0.577	-0.641	0.422	1.301***	-1.088**
	(-2.98)	(-1.45)	(-2.16)	(-3.03)	(-0.43)	(-3.07)	-(1.62)	(-4.90)	(-5.52)	(-4.24)	(-1.56)	(-1.58)	-(1.18)	-(4.20)	(-2.88)
cut5		0.439		0.408	0.941*	0.754		-0.469	-0.255	-0.521	0.682		1.434***	2.209***	0.303
		-(1.05)		-(1.17)	-(2.56)	-(1.94)		(-1.29)	(-0.68)	(-1.50)	-(1.85)		-(3.44)	-(5.97)	-(0.81)
cut6		2.142***			2.580***					1.032**	2.561***		4.213***	3.556***	1.916***
		-(4.41)			-(6.05)					-(2.88)	-(5.40)		-(4.04)	-(5.94)	-(4.25)
$\chi2$ (d_m)	5.784(6)	10.91(6)	5.732(6)	9.334(6)	10.59(6)	5.808(6)	1.745(6)	4.154(6)	4.453(6)	4.300(6)	3.323(6)	6.878(6)	9.345(6)	14.8(6)	8.41(6)
Prob ($\chi2$)	0.448	0.0911	0.454	0.156	0.102	0.445	0.942	0.656	0.616	0.636	0.767	0.332	0.155	0.0219	0.21
Pseudo R^2	0.0570	0.0288	0.0352	0.0263	0.0221	0.0162	0.00528	0.0180	0.0152	0.00591	0.00657	0.0420	0.0214	0.0317	0.0224
N. obs.	125	122	124	123	120	123	124	124	123	120	124	125	115	123	121

Copyright © FrancoAngeli
This work is released under Creative Commons Attribution - Non-Commercial – No Derivatives License. For terms and conditions of usage please see: http://creativecommons.org