Key Drivers of the Engagement of Farmers in Social Innovation for Marginalised Rural Areas

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Abstract: The European Union promotes social innovation (SI) initiatives for the support of marginalised rural areas through rural and sustainable development policies. These are based on the engagement of local actors and the strengthening of their mutual relationships to boost the fostering of professional collaborations. In this context, the Horizon 2020 Social Innovation in Marginalised Areas (SIMRA) project elaborated a conceptual framework for characterising the engagement in an SI initiative. Accordingly, this paper aims to demonstrate that engagement relies on specific key drivers, such as the existence of unmet social needs and the role of agency. To this end, a two-step Heckman model was applied to an SI initiative case study called Vazapp', a rural hub (agency) located in Southern Italy. It promotes relationships among farmers to valorise the marginalised rural areas. The results appear consistent with the theoretical framework, demonstrating that the farmers' engagement was motivated by the existence of the aforementioned determinants. The implications are relevant for policymakers, consultants, and social innovators who may incorporate these elements in designing specific SI projects in different contexts.

Keywords: social innovation; relationships; marginalised rural areas; rural hub; farmers engagement; two-stage model; collaboration creation

1. Introduction

The importance of mountainous and rural areas is well recognised at the European Union (EU) level since they represent about 80% of EU territory and 57% of the EU population, accounting for 46% of the gross value added [1]. Additionally, they provide natural resources, environmental goods, and eco-services, as well as cultural and social heritage. Finally, their economic role in providing agricultural goods needed to activate valuable food and supply chains is widely recognised [2]. This motivates European Commission (EC) efforts to maintain rural areas, especially those lagging behind and those affected by marginalisation, such as geographical remoteness, significant industrial decline, and high aging and unemployed populations.

To counter the socio-economic decline of these areas in the late 1980s, the EU launched the LEADER programme aimed at directly involving local communities to design and implement rural development projects suited to the local context [3]. The underlying logic of these interventions focuses on unlocking endogenous resources and valorising mostly immaterial assets [4–6]. Such intervention funds deliberative and participatory movements, spontaneously attempting to tackle issues of marginalization in rural areas. These initiatives have been classified under the social innovation (SI) flagship [7].

The advantage envisaged by the promotion of SI initiatives relies on their capacity to valorise the contribution of local communities through the strengthening of their mutual relationships.
relationships. In other words, this approach relies upon the engagement of local actors, who have specific and embedded knowledge, can share information, and enjoy access to natural resources. Thus, wider involvement of heterogeneous and well-motivated local actors may boost the creation of social capital, paving the way for the development of professional collaborations among community members. Therefore, rural areas typically affected by aging, depopulation, brain drain, etc., which further cause marginalization, may benefit from SI initiatives that foster mobilisation, the creation of new relationships, and facilitate knowledge and resource sharing. All these aspects contribute to the recovery of the social fabric and facilitate long-term development paths [8–11].

Though scientific literature [6,12–14] has reported several definitions for SI, this paper adopts the one proposed by the Social Innovation in Marginalised Areas (SIMRA) consortium. SIMRA conceives SI as “the reconfiguring of social practices, in response to societal challenges, which seeks to enhance outcomes on societal well-being and necessarily includes the engagement of civil society actors” [15–17]. This definition paved the way for an innovative conceptual framework addressing two main issues: (a) the accurate identification of existing SI initiatives and (b) the characterization of their distinctive elements, functions, and dynamics. This is very useful to conduct empirical investigation in rural areas; in fact, during the SIMRA project, it has been applied to 27 different case studies across Europe [18], including the one here presented.

The advantage of this approach is its clear-cut distinction between SI initiatives and social actions, which may have similar characteristics but are essentially different (e.g., political movements, cultural clubs, volunteer associations, social firms, and local action groups). In fact, according to Kluvánková et al. (2017), primary elements for identifying an SI initiative are unmet social needs, agency, and reconfiguration of social networks and outputs. Among these, unmet social needs and agency are crucial in the process of engagement of civil society because meeting them is a basic requirement to motivate stakeholder participation [19].

This paper aims to demonstrate that farmer engagement in an SI initiative relies on unmet social needs and agency. The analysis is performed in two steps: (i) by investigating the mechanisms involved in actor mobilization and (ii) by exploring the establishment of new collaboration. For this purpose, we adopted a two-step Heckman model to analyse a case study located in Southern Italy (Apulia region).

Specifically, this initiative refers to the creation of a rural hub aimed at fostering farmer collaboration to tackle some common problems (e.g., adoption of innovations and marketing of products). Thus, it stimulates cooperation and the creation of knowledge flows, favouring a different strategy model of economic development in marginalised rural areas.

This paper’s contribution includes the validation of the SIMRA framework in explaining the role of unmet needs and agency for civil society engagement. This may be useful to provide insights in to social innovators and policymakers willing to replicate a successful case study based on a bottom-up approach.

The structure of the paper is as follows: Section 2 reports the background and reviews the literature. Section 3 describes the materials and methods, focusing on the case-study characteristics. Sections 4 and 5 refer to the results and discussion. The concluding remarks are reported in the last section.

2. Background and Literature Review

The conceptualization of SI dates back to the 1980s, aiming at the understanding of societal changes through which the community may act as a producer and consumer of new services and products [20–22]. The scientific literature published over time has explored several features of SI, such as co-decision making and collective creation [22], the role of non-profit organizations in stimulating public–private partnerships [23], the identification of organisational models in promoting institutional changes [24], and the identification of...
business models required to identify viable solutions to social problems [25]. An extensive
review of the evolution of SI is provided by Lombardi (2017) and Polman et al. (2017).

The basic functions of an SI initiative rely on its capability to address unmet social
needs [19,20]. In fact, different from other types of innovation responding to market signals
(e.g., new products or services for consumers and new technologies for the more efficient
use of resources), SI deals with new needs perceived by a society facing emerging societal
challenges related to social inclusion and quality of life [26]. Though the market does
not represent the prime mover favouring the creation and adoption of innovation, it is
nevertheless understood that the development of the SI process may lead to outcomes
affecting some markets. At the same time, public service provision is still absent.

The conceptual framework adopted in this paper is the one proposed by Kluvánková
et al. (2017), Secco et al. (2017), Kluvánková et al. (2018), Secco et al. (2019), and Dalla Torre
(2020) [16,17,27–29]. It provides a dynamic approach to the evolution of the SI process,
from its beginning to the appearance of tangible outputs and impacts. The advantages
of this approach include the possibility of grasping the role of the specific context in the
development of the SI process and correctly identifying the SI process’s level of maturity.
The framework has been applied in different studies and appears quite robust [30–32].
Certainly, some weaknesses still emerge from the foundation of the framework, i.e., the
still developing definition of SI [33].

Therefore, this contribution represents a further attempt to explore the key dimensions
of SI, as identified and explained. Among them, the most important in SI in the early stages
of development are the following:

i. A trigger: an external occurrence determining the start of the process [15].

ii. Individual and collective needs: unmet needs derived from the change in societal
structure or economic system, for which a response has not yet been provided by
the market or public services. According to Mulgan et al. (2007), SI is characterised
by the development and implementation of new ideas for satisfying social needs
and creating new social relationships or collaborations [18].

iii. Perceived context: all tangible and intangible aspects that may favour or obstruct the
creation and implementation of SI, such as human capital, social capital, resource
endowment, and regulatory framework.

iv. Agency: the capacity of a group of people to reinterpret and mobilise local resources
in response to unmet social needs [34].

v. Reconfiguring of social practices: changes in networks among private or public
institutions, as well as the development of new attitudes, practices, and governance
schemes. Reconfiguration is conceived as a process of social creation, with
enhancement of cognitive, rational, and organisational skills [35].

vi. Activities: actions undertaken after the reconfiguration (i.e., the operational phase
of the SI process).

vii. Outputs: the immediate, identifiable, traceable, and tangible results of SI, paving
the way for the creation of further opportunities and leading to a broader range of
outcomes and impacts.

Secco et al. (2019) developed a well-structured evaluation framework in which princi-
ples, criteria, and indicators are clearly identified [36]. Despite the plethora of indicators
already in place, a gap still exists within the theoretical framework already developed that
relates to the application of statistical methods aimed at testing the significance of some
indicators. Therefore, this paper proposes the two-step model procedure, or double-hurdle
model (Heckman, 1979), to evaluate the role played by certain elements contained in the key
dimensions listed above (especially unmet needs and agency) in generating outputs [37].

The two-step model has been increasingly utilised in an attempt to account for the
nested nature of the decision to innovate. Applications of such models may encompass,
for example, both the decision to adopt an innovation and the intensity of its use [38]. The
advantage of this method is in its capability to deal with endogeneity and selection bias
due to unobservable factors [39]. Although this model is extremely popular and widely
used as a reference by researchers internationally, it has a potential weakness because it explains only innovation adopters, neglecting information about non-adopters.

In the scientific literature, the model has been applied in various domains, such as the health sector [40,41], social sciences [42,43], agriculture [44–46], rural development [47], and environmental sciences [48]. Consequently, a literature gap still exists with respect to the application of the same quantitative model in investigating crucial aspects of SI in promoting the development of rural areas.

3. Materials and Methods

3.1. Case Study

The case study refers to the SI initiative, called Vàzapp’ (the literal meaning in Italian is “go hoeing the soil”), in Southern Italy. The brainchild of a Salesian priest and a local young farmer, Vàzapp’ was developed in 2014 and aimed to create a rural community to deal with the actual needs of farmers (e.g., valorisation of quality products, finding new market channels, simplification of bureaucracy, etc.) and to listen to them and restore their dignity (i.e., adequate level of income and quality of life). All members voluntarily became a part of the association by paying a small fee motivated by common interests and by establishing mutual relations. The motivations for participation were diverse and included “doing” something for their territory, living new experiences, meeting new people, learning more about agriculture, and nurturing professional skills and personal capacities. In 2016, after the remarkable expansion of its membership, Vàzapp’ evolved into a social cooperative, a legal form enabling participation in public tenders enacted by different institutions. Thus, relevant financial resources have been acquired and used to fund specific SI actions.

Currently, the community constitutes 20 people, including professionals, researchers, communicators, farmers, agronomists, and social media managers (Figure 1).

![Figure 1. Members of the rural hub. Note: Photos released by Vàzapp’ (Rural Hub Vazapp® , Foggia, Italy).](image-url)
Among its first SI actions, Vàzapp’ organised a cycle of social events called “farmers’ dinners” to stimulate an SI pathway in the agriculture sector with a bottom-up approach and to catalyse the establishment of relations within the rural context (i.e., the engagement of farmers). In this way, Vàzapp’ can be identified as an SI initiative thanks to its capability to facilitate relationships amongst farmers, favouring formal or informal collaboration, and its capability to listen to their unmet needs while bringing those to the attention of institutions.

Specifically, the above-mentioned farmers’ dinners encourage farmers to open their houses to the local neighbourhood for dinner. The rural hub, in its role of SI agency, scouts for hosts, sets the location for the event, including a showcase for the local food produced by the farmers, and manages a particular dynamic for encouraging the establishment of new relations among them. From February 2016 to June 2018, Vàzapp’ organised 20 events in different locations of its territory (Figure 2; see [6]).

Thus, Vàzapp’ can be identified as an absolute novelty in the national and international context because, thanks to its SI model, including different type of SI actions such as the farmers’ dinner, it stimulates cooperation and the creation of knowledge flows, favouring a different strategy model of economic development in the agro-food system.

On the basis of these premises, it is possible to identify the distinctive elements of Vàzapp’ that characterise it as an SI initiative, according to the evaluation framework elaborated by SIMRA [27–29]. Indeed, the EU project developed a set of methods to assess SI implications at different levels, as already stated in the Section 2, as well as the main components and interactions of SI. Figure 3 is based on the general framework for SI, as presented by Dalla Torre et al., (2020). The authors summarised the main elements characterising the case study as follows; the needs perceived by farmers are related to lack of extension services to support farm and business development; in addition, there is a lack of interest by the younger generation in their succession to the farm business, and who
instead prefer to move to other regions (i.e., brain drain); finally, farmers feel excluded from current civil society, as media and public debate do not show an interest in their living conditions. Regarding the trigger, the SI process started when the initial group of young people, forming the core group of the initiative (i.e., the clique) became aware of the actual marginalization status of the local farming community. The actors promoting the SI process were young people belonging to the non-profit organization named “Promised Land” who, acting as the innovators, activated the preparatory actions aimed at farmers involvement. To this purpose, the original farmers’ dinner event was planned in collaboration with other relevant local actors (agents), represented by young farmers, researchers, agronomists, and experts in communication. Their support was crucial in achieving an effective establishment of the events and in favouring the participation of farmers. The outcome of the farmers’ dinner was the establishment of new interactions among people who had previously never met, leading to the formation and strengthening of networks among heterogenous people: young farmers, professionals, and researchers. Furthermore, this network reconfiguration produced outputs in terms of creating new collaborations for the introduction of innovation in agriculture, such as the introduction of new crops, testing new cultivation techniques, and challenging new markets.

Finally, the figure shows that a specific agency mobilises actors, activates participation processes, and favours the convergence of expectations. Resultantly, this determines an accumulation of social capital [49].

Figure 3. Conceptualization of the Vàzapp’ case study. Source: Adapted from [29].
3.2. Data Collection

To explore the farmers’ willingness to be involved in the rural hub activities, we employed two sources of data, (i) a survey based on an ad-hoc-designed questionnaire directed at the participants in the farmers’ dinners, and (ii) semi-structured interviews with experts from the rural hub staff.

The survey was conducted during the project activities (i.e., 20 farmers’ dinner events), from February 2016 to June 2018. The questionnaire was administered throughout the social events at the end of the warming-up conversations and before the dinner. About 373 farmers were surveyed, employing around 30 open and closed questions, divided into three sections: (a) human capital, (b) effectiveness of the agency, and (c) marginality.

Section (a) included socio-demographic information such as age, gender, education, and farm location. This section also investigated the respondents’ motivation for working in agriculture, distinguishing three reasons: (i) passion, (ii) familial tradition, and (iii) business.

Section (b) explored the perceptions of the participants towards the event and their previous knowledge of the existence of the rural hub. The former aspect was addressed, surveying the satisfaction level of the participant with the different characteristics of the event (format, organisation, atmosphere, people, food, and interaction) expressed along a 5-point Likert scale. To explore the previous knowledge of Vázapp’, one question asked if the respondent already knew the initiative before being invited to the farmers’ dinner. This section included also a crucial question used to operationalise one of the dependent variables used in the statistical analysis (see Section 3.3) related to their willingness to keep following Vázapp’ activities beyond the farmers’ dinner, both by means of social media and by live interaction (participation in other Vázapp’ activities, spending time with Vázapp’ members, or becoming a member of the hub).

Section (c) explored the needs of the participants, who were asked to indicate the relevance of the following difficulties for their farm per a 5-point Likert scale: receiving technical information and solutions, developing cooperative projects for innovation, searching for new sales channels, improving technical and design skills, and promoting quality products.

Finally, to further investigate the willingness of participants to be more deeply involved in activities stemming from Vázapp’, we interviewed two experts from the rural hub staff, who personally invited and supported the farmers in the social activities. The interview was based on the following guiding questions:

- Which participants have activated professional agreements with rural hub staff members?
- Which participants have formed a cooperative with other participants?
- Which participants have established project relations with other participants?

All the statuses investigated were referred at a specific moment, i.e., “... after participating in the farmer-dinner”.

3.3. Methodology

Assessment of the evolution and spread of SI in a rural context is receiving more attention in the literature; meanwhile, few works are available on determinants influencing agents decisions to join an SI initiative.

This work presents a quantitative analysis to demonstrate if the key drivers, i.e., the existence of unmet needs and the role of agency, may favourably affect the willingness of farmers to be involved in the activities promoted by a rural hub conceived to foster their mutual collaboration in solving common problems. In practical terms, farmers demonstrate their involvement in two ways: the attendance in activities promoted by the rural hub, and the formal agreements signed to prove their commitment in some sort of joint actions (e.g., participation to publicly call for financial support for innovation adoption, or marketing actions to promote their products). The analytical tool adopted for this purpose is the two-stage analysis model: the first stage identifies the key factors favouring the farmers’
attendance in social activities, while the second stage analyses the key determinants that explain the willingness to stipulate a formal agreement.

The model, widely used to analyse the adoption of technological innovations, has been adapted to an SI. In fact, the SI may be conceived sort of as a provider of public good, rather than a private good. Accordingly, each agent (farmer) faces the choice of whether to access an economic good by investing time and by sharing ideas and experiences with other members.

The structure of the two-stage model is illustrated in Figure 4.

![Figure 4. Sequence of stages.](image)

In the first stage, each agent faces a binary choice (yes/no) and decides whether to be involved in the follow-up of Vázapp’ activities by committing themselves to sharing their ideas with others. The agents, selecting the “yes” option, are named “followers”.

In the second stage, followers face the second binary choice (i.e., whether to stipulate a formal agreement among Vázapp’ members). These agents are referred to as “active followers”.

The agent’s choice (W) is represented by the generic equation:

\[ W = f(U) \] (1)

where \( f(U) \) represents the utility function containing the independent variables explaining each agent’s choices.

Based on the information provided by a specific survey described in the next section, a probit model was fitted to identify the key determinants of each choice. Consequently, two empirical regressions were run to estimate the coefficients of the factors influencing the choice.

On recalling Equation (1), the choice is aimed at maximising the agent’s utility (U). Therefore, the utility maximization depends on n alternatives [50].

The utility for each agent i associated with the choice j is given by Equation (2):

\[ U = V_j + \epsilon_j \] (2)
where $V_j$ is the deterministic (observable) component and $\varepsilon_j$ is the stochastic error and unknown to the researcher.

In this case study, the following observable variables are embedded in $V_j$:

- Human capital (H): characteristics of farmers (i.e., age, education);
- Agency (A): effectiveness of agency (i.e., acquaintanceship with the rural hub and agreeableness of the event);
- Marginality (M): physical and social remoteness (i.e., unmet needs among and geographical distance between members).

Therefore, by substituting the $U$ of Equation (1), with its specification in (2), and referring to the two-stage estimation [26], the following are obtained:

Stage 1: $W_1 = \alpha_1 + \beta_1, 1H + \beta_1, 2A + \beta_1, 3M + \varepsilon_1$ (3)

Stage 2: $W_2 = \alpha_2 + \beta_2, 1H + \beta_2, 2A + \beta_2, 3M + \varepsilon_2$ (4)

where $\alpha$ represents the constant value and $\beta$ the estimated coefficient of the regression model.

In the two-step estimation, Equation (4) applies only for those observations where $W_1$ means 1.

Both stages are estimated by maximum likelihood as an independent probit model to determine the individual decision. The model has been fitted by adopting a backward procedure, in which the definitive variables considered in the model resulted from a screening activity in the initial saturated list of variables. Starting from the model with all variables, testing was done after the elimination of each variable. In this way, the best model was evaluation according to the ability to match data. The removal of a variable affected the likelihood ratio chi-square of the model and was used to verify its degree of fit.

4. Results

4.1. Descriptive Statistics

The independent variables considered determinants of farmers’ behaviour and descriptive statistics of the sample are listed in Table 1.

| Variable       | Variable Description                                        | Coding  | Mean  | S.D.  | Freq. (%) | Missing Values |
|----------------|------------------------------------------------------------|---------|-------|-------|-----------|----------------|
| Age            | Years                                                      | Years   | 39.8  | 10.9  | 17.4      | 13             |
| Gen            | Gender                                                     | Female  |       |       | 17.4      |                |
|                |                                                            | Male    |       |       | 82.6      |                |
| Edu            | Education levels                                           | 1 = Primary school | 10.9 |       |           |                |
|                |                                                            | 2 = High school     | 43.0 |       |           |                |
|                |                                                            | 3 = Bachelor’s      | 15.2 |       |           |                |
|                |                                                            | 4 = Master’s degree  | 22.9 |       |           |                |
|                |                                                            | 5 = PhD            | 8.0  |       |           |                |
| Pas            | Farmers are passionate for agriculture                     | 0 = no                         | 46.4 |       |           |                |
|                |                                                            | 1 = yes                        | 53.6 |       |           |                |
| Trad           | Tradition and inheritance of family farm                   | 0 = no                         | 69.4 |       |           |                |
|                |                                                            | 1 = yes                        | 30.6 |       |           |                |
| Ag_agree       | Agreeableness of farmers’ dinner                           | 5 point Likert scale         | 4.7  | 0.5   | 46.4      | 7              |
| Ag_acqu        | Acquaintanceship with VáZapp’                             | 0 = no                         | 20.9 |       |           |                |
|                |                                                            | 1 = yes                        | 79.1 |       |           |                |
| Km             | Farm distance from Foggia city                             | kilometers                   | 43.5 | 29.5  | 17.4      |                |
Table 1. Cont.

| Variable    | Variable Description                                      | Coding | Mean | S.D. | Freq. (%) | Missing Values |
|-------------|-----------------------------------------------------------|--------|------|------|-----------|----------------|
| Need_info   | Technical information and solutions                       | 5 point Likert scale | 3.8  | 1.1  |           | 46              |
| Need_coop   | Development of cooperative projects for innovation        | 5 point Likert scale | 4.0  | 0.9  |           | 46              |
| Need_chan   | Search for new sales channels                            | 5 point Likert scale | 4.1  | 1.0  |           | 42              |
| Need_skill  | Improvement of technical and design skills               | 5 point Likert scale | 3.8  | 1.1  |           | 45              |
| Need_prom   | Promotion of quality products                             | 5 point Likert scale | 4.2  | 1.0  |           | 49              |

Based on a 5-point Likert scale (1 = not important, 5 = very important).

Observation of the values reported in Table 1, expressed in averages or frequency for the variables considered, revealed that the sample was made up of farmers (M = 40 years old), a majority of whom were men (83%). The level of education appears to be medium-high (46.1% having bachelor’s degrees or higher) compared to the national situation (6.2%), according to the 2010 National Agricultural Census by ISTAT (2013) [51]. About half of the sample declared that they were driven to be in the agriculture sector due to a personal dedication to farming, whereas 70% inherited farms directly from parents or relatives. The agreeableness level in the participation of a single event is very high, with a medium score of 4.7/5 points on a Likert scale, considering different aspects such as location, setting, food, organization, and new relationship opportunity.

The average distance of participants from the city of Foggia was 43.5 km on a provincial territorial surface area, whose radius is about 60–90 km. Eighty percent of people were already acquainted with Vázapp’ activities before the farmers’ dinners. The five farmers’ needs under consideration were close to 4 on a 5-point Likert scale, showing that the questions, formulated in the survey on this aspect, could capture farmers’ actual needs.

The above variables have been grouped according to categories in Equations [3] and [4]. Human capital (H) contains the socio-demographic variables, such as age (Age), gender (Gen), education (Edu), passion (Pas), and tradition (Trad). The role of agency (A) is represented by the degree of acquaintanceship with Vázapp’ (Ag_acqu), and the recognition of its capacity in creating an agreeable environment (Ag_agree), during the farmers’ dinners. The marginality component (M) is represented by the perceived farmers’ needs declared in the questionnaires (Need_info, Need_coop, Need_chan, Need_skill, and Need_prom), and the farm distance (km) from Foggia city.

Therefore, based on Equations (4) and (5), the probit model will be specified as follows:

$$W1 = \alpha_1 + \beta_{1,1} \text{Age} + \beta_{1,2} \text{Edu} + \beta_{1,3} \text{Gen} + \beta_{1,4} \text{Pas} + \beta_{1,5} \text{Trad} + \beta_{1,6} \text{Ag\_agree} + \beta_{1,7} \text{Ag\_acqu} + \beta_{1,8} \text{Km} + \beta_{1,9} \text{Need\_info} + \beta_{1,10} \text{Need\_coop} + \beta_{1,11} \text{Need\_chan} + \beta_{1,12} \text{Need\_skill} + \beta_{1,13} \text{Need\_prom} + \epsilon_1$$  \hspace{1cm} (5)

$$W2 = \alpha_2 + \beta_{2,1} \text{Age} + \beta_{2,2} \text{Edu} + \beta_{2,3} \text{Gen} + \beta_{2,4} \text{Pas} + \beta_{2,5} \text{Trad} + \beta_{2,6} \text{Ag\_agree} + \beta_{2,7} \text{Ag\_acqu} + \beta_{2,8} \text{Km} + \beta_{2,9} \text{Need\_info} + \beta_{2,10} \text{Need\_coop} + \beta_{2,11} \text{Need\_chan} + \beta_{2,12} \text{Need\_skill} + \beta_{2,13} \text{Need\_prom} + \epsilon_2$$  \hspace{1cm} (6)

in which the stochastic component is assumed to have a normal distribution

$$\epsilon_n = [\epsilon_{n1}, ..., \epsilon_{nj}] \approx N(0, \Omega)$$  \hspace{1cm} (7)

The first step was performed on the full dataset formed by 373 observations, which was formed by two groups of farmers: the unresponsive (49%) and the followers (51%; Figure 5).
W2 = α2 + β2,1Age + β2,2Edu + β2,3Gen + β2,4Pas + β2,5Trad + β2,6Ag_agree + β2,7Ag_acqu + β2,8Km + β2,9Need_info + β2,10Need_coop + β2,11Need_chan + β2,12Need_skill + β2,13Need_prom + ε2

in which the stochastic component is assumed to have a normal distribution

εn = {εn1, ..., εnj} ≈ N(0, Ω)

The first step was performed on the full dataset formed by 373 observations, which was formed by two groups of farmers: the unresponsive (49%) and the followers (51%; Figure 5).

Figure 5. Composition (%) of groups.

Followers declared their willingness to follow up on Vázapp’ initiatives, whereas the unresponsive (49%) expressed their disinterest. The second step was performed on the sub-group of 190 followers. In this case, the sample was divided into two groups (i.e., farmers who formally collaborated within the Vázapp’ network and farmers who did not).

4.2. Two-Step Model Estimates

The probability of each individual belonging to the group of followers or active followers was estimated using the empirical Models [52,53]. Table 2 reports the probit model results. The first step refers to the predicted willingness of the farmers to follow Vázapp’, whereas the second step relates to the predicted willingness of the farmers to establish a formal collaboration. The results of the probit will be expressed by the β coefficients, in terms of influence and the marginal effect of each determinant on the probability of farmers being followers (Step 1) or active followers (Step 2).

Step 1. The model was estimated based on 251 observations out of 373. The constant value α1 is −1.42, which basically implies farmers were unwilling to become followers. This is consistent with the fact that farmers are not usually keen to adopt or join an innovation or a new behaviour whose costs and benefits are not yet clear. This is a typical attitude of rural communities operating in regions characterised by a lagging behind from the economy. It highlights the relevance of the role played by the rural hub within this context, which is to support local actors in overcoming this typical initial inertia in getting involved in new forms of governance.

The interpretation of β coefficients is that socio-demographic variables were insignificant. On the contrary, the variables, associated with passion for agriculture (Pas) and tradition (Trad), are statistically significant and have negative values, respectively (−0.50 and −0.33). Their marginal effects are −0.19 and −0.13, which are not negligible because the sum of both amounts to a 32% reduction of the probability of following the initiative. In other words, farmers who dedicated their lives to agriculture and those who inherited a farm were not keen to follow Vázapp’. This may be understood in terms of a “conservative
attitude” of people involved in agriculture through habit and tradition, but who have little motivation to invest in their farms and change their mindsets.

**Table 2.** Probit model estimates for Step 1 and Step 2.

|          | Coef.     | Std. Err. | Marg. Eff. | Stat. Sign. |
|----------|-----------|-----------|------------|-------------|
| **STEP 1** |           |           |            |             |
| Follower |           |           |            |             |
| Age      | -0.008217 | 0.0084171 | -0.003231  |             |
| Edu      | 0.0148648 | 0.076784  | 0.005845   |             |
| Gen      | 0.1902639 | 0.076784  | 0.0748139  |             |
| Pas      | -0.5052452| 0.1735387 | -0.1947947 | ***         |
| Trad     | -0.3370673| 0.183164  | -0.1330702 | **          |
| Ag_agre  | 0.237426  | 0.157094  | 0.093586   | *           |
| Ag_acqu  | 0.2692213 | 0.209332  | 0.108608   |             |
| Km       | 0.0004574 | 0.0028874 | 0.0001798  |             |
| Need_info| 0.0652083 | 0.0944524 | 0.0256406  |             |
| Need_coop| -0.0665652| 0.1024095 | -0.0261742 |             |
| Need_chan| -0.1092995| 0.1056337 | -0.0429778 |             |
| Need_skill| 0.1888048 | 0.107925  | 0.0742402  | *           |
| Need_prom| -0.0293777| 0.106193  | -0.0115516 |             |
| _cons   | -1.423013 | 0.91718   | -         | *           |
| **STEP 2** |           |           |            |             |
| Active Foll. | Coef.     | Std. Err. | Marg. Eff. | Stat. Sign. |
| Age      | 0.0719235 | 0.0359555 | 0.0035733  | *           |
| Edu      | -0.3547485| 0.2183728 | -0.0176246 |             |
| Gen      | 0.1311777 | 0.6265455 | 0.0065172  |             |
| Pas      | 1.018115  | 0.5294117 | 0.0582865  | *           |
| Trad     | 0.1920422 | 0.4914715 | 0.0088896  |             |
| Ag_agree | 1.213596  | 0.4295115 | 0.0602939  | *           |
| Ag_acqu  | 1.109044  | 1.109044  | 0.0550996  | *           |
| Km       | -0.0217596| 0.0085803 | -0.001081  | *           |
| Need_info| -0.278478 | 0.308714  | -0.013854  |             |
| Need_coop| -0.0870878| 0.3258917 | -0.0043267 |             |
| Need_chan| 0.1584284 | 0.2739409 | 0.0078711  |             |
| Need_skill| 0.0303092 | 0.338764  | 0.0015058  |             |
| Need_prom| -0.3780945| 0.4188626 | -0.0187845 |             |
| _cons   | -5.083182 | 2.83195   | -         | *           |

Significance at 90%, 95% and 99%, respectively with (*), (**) and (**).
The $\beta$ coefficient associated with the agreeableness of the dinner (Ag_agree) is statistically significant at 0.23. The marginal effect associated with this determinant is 0.09. In this case, because the variable was expressed as a 5-point Likert scale and most respondents stated 4 or 5 points, the overall effect of this variable may range from 0.36 to 0.45 in terms of probability. This value is remarkable and demonstrates the organization’s (i.e., Vázapp’) effectiveness in motivating participation.

Among variables related to rural marginality, only the need related to the improvement of technical and design skills on the farm (Need_skill) is statistically significant, with a coefficient of 0.18 and a marginal effect of 0.07. This last figure, referring to the 5-point Likert scale and considering that most farmers selected 3–5 options, implies a range of 0.21–0.35 in terms of probability to become a follower. This confirms that at least one individual need has been met by the SI initiative.

Overall, the analysis shows that although the individuals exhibited a negative attitude towards becoming followers (negative constant), those who have all the statistically significant characteristics present a high probability (predicted probability to follow = 0.66) of becoming followers. In other words, these participants are not passionate for agriculture and not driven by tradition and inheritance of a family farm but express a high level of agreeableness towards farmers’ dinners and the need to improve technical and design skills.

Step 2. Moving to the interpretation of results in Step 2, the constant value $\alpha_2$ is $-5.08$, meaning followers were basically not willing to start a formal collaboration with other actors of the Vázapp’ network. By focusing on the determinants able to cover the negative value of $\alpha_2$, among socio-demographic aspects, the variable age appears to be statistically significant with a value of 0.71, which corresponds to a marginal effect of 0.0036. The direct interpretation is that the probability of signing a formal collaboration increases by about 4% for every 10-year increase in age. A possible explanation is that older farmers have more decision-making power and are more endowed with knowledge and experience than younger ones are.

Unlike the first step, the passion variable turned out to be positive with a $\beta$ coefficient of 1.02 and a marginal effect of 0.6, which means that among the farmers who participated in a second event, those who are passionate for agriculture have 6% more probability of reaching a formal agreement.

As in the first step, the $\beta$ coefficient associated with agreeableness is statistically significant with a value of 1.2, which is associated with a marginal effect of 0.06. Since this variable was expressed as a 5-point Likert scale, and most of the farmers stated 4 and 5 points, its contribution in probability terms ranges between 0.24 and 0.30.

The variable related to acquaintanceship with Vázapp’ has a positive coefficient of 1.1, with a marginal effect equal to 0.55. This implies that the probability of reaching a formal collaboration rises by 6% as they received social reinforcement to overcome the initial inertia.

Km is the only statistically significant variable with a negative value, with a $\beta$ coefficient of $-0.02$ and a marginal effect of 0.001. Even if the value is very low, every 10 km further from Foggia (Vázapp’ headquarters) reduces the probability of becoming active followers by 1%.

Surprisingly, no significant values were observed in the second phase for the farmers’ needs, probably due to the selection that occurred in Step 1. It could also be claimed that Vázapp’ meets farmers’ needs in the first phase, thus stimulating their involvement in subsequent events, which creates the basis for formal collaborations among different actors, favoured by human capital and agency determinants.

Consequently, although the individuals exhibited a generally negative attitude towards becoming active followers (negative constant), the findings revealed that those who have all the statistically significant characteristics present a high probability (predicted probability to follow = 0.98) of becoming active followers. In other words, these partici-
pants were passionate for agriculture, presented acquaintanceship with Vázapp’, exhibited agreeableness with farmer’s dinners, were closer to Foggia’s city, and were older.

5. Discussion

The results are consistent with the theoretical framework, demonstrating that the farmers’ engagement was motivated by the existence of unmet needs and the role of the agency in the case study of Vázapp’. Specifically, it played a relevant role in the first step for the mobilization of farmers and for favouring their aggregation and acquaintance. Without these determinants, farmers would not have proceeded to the subsequent step of establishing collaboration among them.

In regard to the human capital characteristics of farmers, age played a relevant role in active collaboration. This might be counterintuitive because young people are usually keen to embrace novelty and challenges. However, according to Sigei et al. (2014) and Sall et al. (2000), older farmers are endowed with higher knowledge, experience, financial sources, and decisional power over their farms [54,55]. Additionally, passion plays an opposite role in both steps, contrasting with the willingness to follow the SI initiative in the first step, while favouring the creation of collaboration in the second step [56,57].

The well-known role of geographical proximity favouring the mutual cooperation of farmers has been confirmed in the case study. In fact, its relevance is proved, at least in initiatives at an early stage of development regarding the diffusion of knowledge and information [58–60]. To some extent, it remains a case of productive districts, formed by clusters of firms operating in the same economic sector, where local actors sharing knowledge, beliefs, and habits are keen to collaborate [61].

However, the main finding of the present study is the importance of the SI initiative to stimulate cooperation among farmers. In this respect, an enabling factor is represented by the agreeableness towards farmers’ dinners as shared experiences increase willingness [55,62,63].

The rural hub represented a conceptual environment where farmers shared a common perception of the context in which they operate and where they found a favourable environment in which social reinforcement towards innovation could occur. With this purpose, Centola and Macy (2007) and Centola (2010) introduced the concept of “complex contagion” to describe the diffusion of collective behaviours [52,53]. Therefore, it is likely that during the farmers’ dinners, many behaviours spread through social contact, even though they were initially perceived as risky, costly, or controversial. In other words, the acquaintanceship with the Vázapp’ initiative, together with the positive impression regarding the shared experience, may favour complex contagion (i.e., the spreading of novel and costly behaviours favourable to mutual and active cooperation). For instance, in our experience, we found that some farmers overcame the initial distrust and started to collaborate in common innovative farming, such as the introduction of new crops.

Finally, the findings have been disseminated to the members of the project coordinators. They received evidence about their perception regarding the intangible outputs achieved by the project, and this increased their confidence in the progress of the SI initiative. The members of the rural hub became more aware of the potential impact of the initiatives proposed, enabling them to participate in more ambitious projects, at national and international levels. Currently, the SI initiative is still in progress (despite the limitations of COVID): the intention is to replicate the farmers’ dinners in other regions.

6. Conclusions

In the last decade, SI has received a great deal of interest as a local development driver for marginalised rural areas. SI initiatives are seen as a flexible method to cope with the idiosyncrasies of rural areas and have proven their capacity to select and implement relevant and effective actions tailored to local communities’ contexts. Thus, they represent a viable device for central authorities to deal with the complexity and heterogeneity of peripheral territories. However, because SI initiatives are based on the engagement of local
people, they are often confused with other participatory-based, bottom-up initiatives (e.g., local action groups) or social actions (e.g., political movements, volunteer associations, and cultural clubs). This drawback can lead practitioners and regional authorities to misinterpret and make mistakes in supporting SI processes.

The need for a clear identification of SI initiatives is at the core of this contribution, which presents a reliable approach for tracing key SI characteristics in the case of local initiatives. The study confirms the important role played by human capital, agency, and marginality as key drivers of farmers’ engagement, according to the well-established SIMRA theoretical framework. Specifically, the unmet needs of the farmers’ community, combined with the effectiveness of agency, lead to the creation of collaborations as measurable outputs.

The analysis clarified that the engagement of farmers at the early stages of the SI initiative was enhanced by the capacity of the agency to address collective unmet needs. This creates the premises for the active participation of farmers to further initiatives, enabling them to reinforce their social capital and creating the conditions for collaboration. This finding is relevant for SI developers when they design specific SI initiatives in local contexts. Furthermore, policymakers should consider these aspects when they elaborate tenders supporting SI initiatives in marginalised rural areas.

The study reveals that after an SI is well-established and members are fully engaged, different determinants (e.g., agency and human capital) play a relevant role in the development of new opportunities (i.e., new collaborations). The adoption of the quantitative tool to analyse information collected among actors may be a good practice to elaborate a clear profile of actors actually keen to participate in the collaboration creation activity, as has emerged in this experiment. This results in very relevant information for project managers who must involve the correctly targeted actors. Policymakers may introduce evaluation criteria for the eligibility of SI funding proposals to pursue an effective use of public financial resources.

The major limitation of the paper is represented by the fact that the model employed explained only the adopter behaviour, leaving unexplored the rest of the sample. This means that the model analysed the choices of only 50% and 8% of the respondents, respectively, for the first and the second step. To address this drawback, future studies should focus on the drivers of unresponsive participants. Moreover, future research may also address the extension of quantitative analysis of SI outputs to perform a cost-benefit or cost-effectiveness analysis. Second, the same study on outputs can be applied to the evaluation of SI outcomes to more comprehensively grasp the effect from a socioeconomic perspective.

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