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An initial exploration on the drivers for integrating small-farmers in supply chains and networks: Propensity to collaborate

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Abstract

Supply networks are increasingly complex networks of interdependent organisations. In the case of food supply networks, globalization seems to be one of the main drivers for change. Agricultural producers have to deal with longer and more complex supply and value chains. However, globalization has resulted in both winners and losers among small farmers. This research looks at drivers for collaboration that may support small farmers' integration to successful food supply chains.

Even though cooperatives are a prominent form of farmer organization, there is little evidence that suggests that these have served as frameworks for successful integration of small-farmers into global supply chains. Hence, this paper focuses in an alternative Mexican legal figure for land collective ownership ('ejido') and explores their members' propensity to collaborate. An exploratory research is conducted and initial findings are provided.

As an initial outcome, this paper suggests the need for a complementary research approach to increase small farmers' propensity to collaborate and work together. Areas for further research are identified.

Keywords

Business integration, drivers for collaboration, 'ejido', food supply chain, sustainable development

1. Introduction

It has been suggested that supply networks are becoming increasingly complex due to globalization [1]. This has had implications in business practice. For instance, in the case of Latin America, changes in supply relationships have manifested themselves in the development of parallel procurement systems, an increasing reliance on distribution centers, direct procurement from primary producers, and the use of quasi-formal contracts [2]. In the agri-food industry, globalization has also changed supply networks; agricultural producers now supply longer complex value chains [3]. Furthermore, there is evidence that suggests there is the trend for multiple retailers to develop exclusive relationships with fewer, favored, single source or dedicated partnerships [4]. In this context, the majority of small producers still rely on intermediaries to sell their produce, this meaning that their transactions are not as effective considering the power imbalance that characterize these relationships [5]. Against this backdrop, in recent years there is a re-emerging interest in farmer organizations and their capability to integrate small-farmers. These organizations are seen as appropriate institutions for building capacity among small-farmers and for helping them to participate in more competitive and globalized market environments [6].

Extensive research in this direction has focused on whether agricultural cooperatives can facilitate small-farmers access markets [7, 8, 9]. Supporters of this idea suggest that one way for small-farmers to overcome challenges presented by unfavorable policy and market conditions is through their integration into farmer groups or producers organizations [9]. The rationale behind being that by acting collectively small-farmers would be able to compete more effectively with larger farmers and agribusiness. In the same lines, it has also been suggested that cooperative selling institutions are potential catalysts for reducing transaction costs, stimulating entry into the market and promoting growth in rural communities [10]. Some research aimed at determining factors influencing farmers' participation in agricultural cooperatives has been conducted in South Africa, where agricultural cooperatives play a

prominent role both historically and in terms of the volume of trade [11]. However, there is little evidence that suggests that cooperatives have served as frameworks for successful integration of small-farmers into global supply chains. Furthermore, there is relatively little research aimed at investigating drivers for collaboration outside the cooperative framework. For instance, engaging with small-farmers and make them active participants in a research to explore their individual preferences and motivations about what would motivate them to work with others is limited.

Hence, the objective of this paper is to conduct an initial exploration about the drivers for integration between small-farmers, and to develop a tool for discussing its relevance in terms of global supply networks. In order to conduct this exercise, we will focus on the role that a particular collective land-ownership structure in Mexico (*Ejido*) plays to support the integration of small-farmers. The reason for this selection is twofold: on one hand, it shows the collective dimension as it involves a set of small-farmers inside a legal figure that collectively owns one or more plots of land; on the other hand, it considers the individual dimension as *ejidos* allow their members to act as independent business entities for producing and selling according to their own preferences and relationships.

The structure of this paper includes first a background, where we describe some characteristics of rural communities in Mexico, with special emphasis on the municipality of Mazatlán. Second, we propose a methodology for exploring small-farmers integration. Third, several findings from the application are presented. Fourth, an initial exploration on these findings is developed. Finally, conclusions are drawn and future research identified.

2. Background

Agricultural cooperatives, a prominent form of farmer organization [6], have been defined as groups of farmers who combine their resources together in certain area of activity to facilitate optimal production through efficient use of these resources [11]. This pooling of resources may include joint purchase of farm inputs like seed, farm machinery, aiding members morally and financially during cultivation and seeking marketing channels for farm products to ensure better and fair prices [11].

When researching on agricultural cooperatives, two broad categories concerning the formation and functioning of farmer groups have been proposed [9]:

- 1) Characteristics of the produce and markets. Because small-farmers can access local markets more easily, these markets are suggested to offer low gains from organizing since each farmer can sell individually. However, collective action may offer significant benefits in allowing small-farmers to reach larger markets. The choice of market depends on the type of products that small-farmers grow, and vice versa. Agricultural products can be categorized into three main groups: staples, perishables and cash crops. Staples are relatively easy to store and transport and therefore a good portion of such crops is destined for local markets. Perishables require more sophisticated storage and transport thus precluding small-farmers from successfully marketing due to lack of funds, capital and technical expertise. Cash crops usually require processing, so small-farmers are often left with no choice but to sell to larger farmers who can afford processing costs.
- 2) Characteristics of the user groups. It has been proposed that smaller marketing groups have higher internal cohesion because it is easier to monitor other members. Most cases of successful collective marketing efforts report a group size in the range of 20-40 members. However, larger groups are more likely to achieve economies of scale.

In considering requirements for the success and sustainability of agricultural cooperatives in developing areas, four pre-requisites have also been suggested [7]:

- 1) A shared recognition by members of the advantages to be gained by cooperation, such as scale economies and/or increased bargaining power. It is difficult to keep members engaged if they do not perceive immediate benefits from working together.
- 2) Strong leadership among cooperative members. Community leaders should fully understand cooperative principles and respect the views of potential members, who would have the power to make or influence decisions in a cooperative.
- 3) Basic business skills for all members so that they can be informed participants in strategic decisions and management oversight. (A general lack of education among potential members in rural areas could be a major constraint at present.)
- 4) Access to a labor market for capable managers. As cooperatives grow, it is often necessary to hire managers with experience and expertise beyond that which can be provided by cooperative members.

Previous categories and pre-requisites are founded on at least two assumptions. First, the presence of a ‘central authority’ that monitors and controls interactions between participants and their environment – i.e. customers and regulators. Second, members follow a rational decision-making process that shows the undeniable advantages of working with others. However, when observing small-farmers’ business behavior, none of these assumptions can be taken for granted. In the following section we will illustrate a situation where (a) there is an organization with a central authority, but it does not regulate external commercial relations, and (b) it is not through a rational decision-making that small-farms are run, there are other reasons such as lifestyle, family, and peer and local recognition to name a few. This illustration is based on a Mexican legal figure for collective land ownership, the *ejido* – expropriated plots of land handed over to communities as collective holdings for cultivation in 1917 during the Mexican Revolution. The selection of this case in Mexico is because communal effort is already deeply rooted in their rural communities [12]. Evidence of these can found in the configuration and functioning of *ejidos*.

2.1 Characteristics of rural communities in Mazatlán, Mexico

It is by law that the *ejido* structure is constituted from three main elements. *Asamblea*, supreme authority integrated by all members of the *ejido* – some sort of direct democracy. Situated below that level are *Comisariado ejidal* and *Consejo de Vigilancia*. The former is an executive organ integrated by a president, a secretary and a treasurer. The latter is integrated by a president, a first secretary and a second secretary and is responsible for auditing the *Comisariado ejidal*. This structure provides small-farmers with legal representation and allows them to manage communal land but it does not necessarily encourage collaboration in terms of production and commercialization.

According to the rural census, *Censo Ejidal 2007*, there are 31,514 *ejidos* in Mexico [13]. These are distributed along 105,948,306 hectares (261,803,966 acres) of the country’s territory, with 30% of the area divided into plots of land. A small fraction is assigned to human settlements (1.3 %). The rest of the territory belongs to *uso comun* – undivided area that belongs to and can be exploited by all members of the *ejido*, very much in the tradition of English Commons. Collaboration among small-farmers has also been documented by the *Censo Ejidal 2007*. According to the census glossary, small-farmers’ organizations are associations which are formed by at least two small-farmers and its objective is to coordinate productive, commercialization and mutual assistance activities. The results related to this topic show that only 4% of Mexican *ejidos* have attempted to collaborate in this way [13].

In order to conduct an initial exploration on the drivers for collaboration between small-farmers, we focused our study in an *ejido* located in Mazatlán, Sinaloa. Sinaloa is the most prominent state in Mexico in terms of agriculture and is administratively divided into 18 municipalities. 43% of the State’s territory follows the *ejido* legal figure. Mazatlán is one of those municipalities, where 44 out of its 45 *ejidos* are dedicated to agriculture and none of them has reported working collectively. This result is consistent with Sinaloa’s trends that suggest only 5.76% of *ejidos* (that are dedicated to agriculture) work collectively. The *Censo Ejidal 2007* also shows that 40% of the *ejidos* in Mazatlán struggle with access to credit and 20% to irrigation water [13]. The census also reported that courses aimed at providing small-farmers with knowledge and skills on commercialization have been delivered, but only 8.9% of the *ejidos* in Mazatlán benefited from this.

3. Methodology

As indicated before, the intention of this exercise is to build a conceptual framework useful to identify drivers and barriers for small-farmers’ cooperation and small-farmers’ propensity to cooperate and to develop a tool for discussing its relevance. To this end, we chose to conduct in-depth interviews which are useful when conducting intensive individual interviews with a small number of respondents to obtain detailed information about their thoughts and behaviors [14]. The selected interviewees were small-farmers, entirely dedicated to farming at the time of the interview. This providence took place because there are many members of rural communities that are no longer dedicated to agriculture but still own land. We also selected potential interviewees based on their location and availability.

The initial plan was to interview no more than 10 small-farmers, with the possibility to stop if we noticed that questions were clear and understandable to any of the interviewees. We assumed that this would indicate enough clarity for an extended application of the questionnaire, and would suggest the achieving of closure.

It was in December, 2015 when a questionnaire and its relevance were tested. In-depth interviews were conducted during two weeks. The participants were small-farmers from San Francisquito, a rural community of approximately 820 inhabitants and 96 small-farmers, situated in Mazatlán in the State of Sinaloa, Mexico. Nine open-ended questions, based on the frameworks described in the previous section, considered small-farmers' background, characteristics of their products and markets and their views on collaboration. One of the authors traveled to the community and carried out the interviews face-to-face. Each interview lasted about 30 minutes.

Table 1 – Questionnaire

Question	Rationale
1. How long they had you been dedicated to farming?	In order to identify if there was any relation between experience and propensity to collaborate with others.
2. Characteristics of your products?	It has been suggested that the choice of market depends on the type of product that small-farmers grow and vice versa [9]
3. Which are your markets and customers?	Are they selling their products individually or collectively? We also wanted to know whether the respondents (small-farmers) have access to global markets.
4. Do you receive fair prices for your products?	To identify if economic drivers are the main reason to collaborate. It has also been suggested that small-farmers have a low bargaining power [8]
5. How do you set a price for your products?	These can be done individual or collectively, being the former case usually weaker than the latter.
6. Are small-farmers interested in accessing other type of markets?	To identify their views about growing from local to regional, national or international markets, and what they thought about others' views.
7. Have you thought about organizing in order to compete more effectively?	To explore their propensity to collaborate and to identify if they were able to recognize any benefits from collaborating with others
8. Are you interested in organizing with other farmers in order to sell their products collectively? If yes, what would motivate you to participate?	To identify potential drivers for collaborate. Is there any shared rationale to collaborate?
9. Can you identify factors that you consider important for having access to better prices for your products?	To check other approaches that do not necessarily relate to collaboration.

4. Findings

Interviews revealed that most participants were interested in collaborating and organizing with others in order to commercialize their products. Several drivers for collaboration were identified; “access to better prices” and “access to credits and training” stood out as important factors. Other factors such as “more bargaining power” and “access to technical training” were also cited by some participants. When asked whether they had previously thought about organizing themselves in order to compete more effectively, most of the participants suggested they had discussed the idea but no further action had been taken. The prevalent feelings were that they did not know how to organize themselves and that they needed a leader. One of the participants commented that a small-farmer's organization had formed before but had failed to progress and consolidate due to the sudden death of their leader – it was integrated by small-farmers from different *ejidos* of Mazatlán to commercialize papaya.

All participants said that they cultivate maize and beans. Other products are occasionally grown (such as tomatoes and pepper) but most of them agreed that they usually stick to maize and beans since the production inputs are much cheaper and they are more experienced in growing such staples. In terms of markets and customers, they all agreed that ‘coyotes’ are the primary customer. In Mexico, *coyote* is the nickname for an intermediary purchaser and according to the respondents they are the most common customer around the area. *Coyotes* usually pay immediately after buying the product and sometimes even provide small-farmers with production inputs (such as seeds and

fertilizer) when they struggle with access to credits. However, the prevalent feeling of interviewees was an interest in accessing other markets in order to receive better prices for their products.

Finally, when asked to identify factors that they consider important for having access to better prices, most participants agreed that they need access to other markets, better production inputs (in terms of quality) and technical training. Only a couple of the respondents identified the need to organize themselves as an important factor for improving their commercialization.

5. Initial exploration

Findings from San Francisquito case suggest a shared interest between the interviewees to find new opportunities for better commercialize their products – e.g. better price and trustworthy customers. They also show certain aversion to risk illustrated by their preferences to cultivate more resilient products (i.e. staples) – e.g. maize and beans. However, few of them recognize the advantages for collective efforts in improving their commercialization channels by adding value through new products and sharing the associated risks. This surprised the researchers as all the participants are members of an *ejido* and it was expected that collaborative practices were more spread.

Some answers suggest the importance of leadership as a pre-requisite to organize collectives. This indication deserves additional research as there is a well-developed body of literature that builds on self-organizing processes as a way to develop and maintain collaboration. For instance, Axelrod [15] recognizes that propensity to cooperate between individuals relates to their expectations on having future interactions. This might indicate that being a member of an *ejido* does not involve interactions with others inside the organization, but as no more evidences are available this requires additional research for a better understanding.

Another possibility why the interviews resulted in such unexpected outcomes could be the way the research was conducted. Collecting data about individuals' preferences by means of interviews, does not necessarily provide high-quality observations. When doing interviews, answers are dependent of what is asked, and questions are usually more relevant to the interviewer rather than the interviewee. In this context, when using interviews, researchers use particular rules in order to develop descriptive outcomes that usually involve no improvement or effect in the interviewees' situations. The resulting knowledge lies with the researchers and not the researched.

In the particular case of aiming at increasing the propensity to collaborate, it seems that we need to conduct a research exercise of different nature. As mentioned above, in order to develop such propensity Axelrod [15] proposes developing initial links and to strengthen these by ensuring future interactions. This suggests an active participation of the involved in the process of doing the research [16]. Hence, to explore alternative research approaches to increase propensity for collaboration seems worth to develop in future explorations.

6. Conclusion

The aim of this document was to conduct an initial exploration on which are the drivers for integration between small-farmers, and if such integrations would be relevant in terms of global supply networks. At the current stage of this investigation, we recognize that both data sets, from interviews and *Censo Ejidal 2007*, point toward the same direction. Currently, there is no propensity to collaborate between small-farmers. Interviewees' answers show interest on participating, mainly because of the advantages in terms of better prices and stronger positions to negotiate. However, the main reason why this is not done is the need for others' direction – i.e. leadership. This contradicts current research literature that shows the advantages of linking 'collaboration' and 'self-organization' – e.g. community operational research.

This might be interpreted in a different way. Usually, this kind of research exercise involves linking sets of observations with other data structures; for instance if researchers want to measure certain responses, they would link observations with a set of numbers by means of a particular rule. Accordingly, to do research would imply looking at current examples and collect observations about them. The different sets of observations can be linked by comparing similar scales, for instance by identifying the relations between the observations and the common scale – i.e. statistical analysis. However, what can we do if such observations cannot be collected, because there are no current examples? In this case we need to build the object of study; we need to create the propensity for collaboration. This implies a different research approach, which have been explored in other contexts [16] with

promising results. In summary, to increase propensity to collaborate between small-farmers, they need to become active participants in the research process.

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