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Producers supplying strategic network, value creation and exporting SME growth

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Strategic networks of agricultural suppliers for the creation of value added are an interesting field of research in the developing countries. Indeed, various scientific works were interested with social networks as well as on their members’ relationship and on their management. However, social networks as strategic suppliers are able to solve SME’s supply credit problems; the need to analyze networks with a view to creating added value for members of these networks remains less examined in literature. To understand the place of the networks in SMEs, a method of content analysis was used to analyze the data collected which included five focus groups of 8 people and twelve interviews. Most participants are producers / suppliers of cassava and shea nuts. The results show that supplier networks allow members to increase their revenues and also improve their skill level.

Key words: Supplier networks, added-value, income, welfare.

INTRODUCTION

Export increases income and the development of regional trade (Binti, 2011, 2010; Swinnen and Maertens, 2007). In 2011, African regional exportation rate was 3.3% while Asian regional trade rate was 31.1% (WTO, 2013). According to World Bank (2001, 2008), the simple increase for 1% of export market share may explain an expansion of one-fifteenth of sub-saharan African mean incomes, which generated yearly incomes in foreign currency of around 70 billion dollars. Therefore, researches on how to increase sub-Saharan African countries share at world trade were getting priority for this part of the world.

In 2008, Benin's exports represented 19.78% of GNP (World Bank, 2009). Despite Benin's presence on the international market, it is clear that its participation in international trade is very insignificant for several reasons. Indeed, Sotindjo (2014) shows that Benin's exports to the rest of the world are very rigid and mono-produced (Before 1894, the slave trade, between 1894-1975 Oil and palm kernel - Exports of cotton fibers and...
seeds, and finally from 1975-1990, some oil and soap factories).

This uncomfortable situation explains the importance of the scientific thesis on export. In fact, in the absence of large exporting companies, some small and medium-sized enterprises are involved in the country’s export activities. However, the current concern concerns the access of smallholders to the market. In addition, market access for smallholders is an instrument to reduce poverty (Maertens and Swinnen, 2009), stimulate economic growth (Dolan and Humphrey, 2000; Kirsten and Sartorius, 2002; Govereh and Jayne 2003) and strengthen their means of sustainable livelihoods (Omiti et al., 2009; van Braun 1995; Swinnen and Maertens, 2007). But the access of smallholders to the markets of small and medium-sized enterprises (SMEs / SMIs) in the perspective of a dynamic supply chain in order to create added value remains a concern in the literature on relations with social networks suppliers (Humphries and Mena, 2012). The arable land resources available in Benin are estimated at 8,300,000 ha of source. Located in an intertropical zone, the precipitation recorded in the various regions varies between 750 and 1200 mm. This rainfall is very favorable for all agricultural crops including cassava and shea.

Despite Benin’s agricultural potential, it is very paradoxical that there is no integrated production chain for added value which may be supplied by small producers as their market is accessed.

The central research question, in this context, is how networks of agricultural suppliers can create more value to better meet their living needs. The ultimate goals of this works were thus to improve the understanding of functioning of the small farmers’ difficulties to supply SME firms and to suggest possible ways of strengthening their efforts to supply by their networks SME firms and livelihood. To better answer this question, we used literature on supplier social networks and theories of value creation. The present work is presented in three parts. The first part synthesizes the literature to extract the theoretical analysis framework. The second one describes the methodological approach used and the last part presents the results with their discussion.

LITERATURE REVIEW

Social networks and information sharing

Humphries and Mena (2012) explain how actions are constrained or facilitated because their social networks allow it. For them, social capital is the sum of resources, current or virtual, which increases for the individual or the group, the virtue of the possession of a sustainable network of more or less institutional relations formed of links and mutual recognition. In fact, a social network consists of a set of actors and relations (“ties” or “edges”) between the actors.

The network’s nodes can be individuals or groups, organizations or companies (Aydin, 2018). Relationships can enter the levels of analysis (relationship of individuals to individuals) or can be through levels of analysis (relationships of individuals to groups) (Mekonnen et al., 2018; Humphries and Mena, 2012). Social networks have several links expressed by information flows and materials flux. Literature on the social networks of suppliers has shown that knowledge is an important productive resource (Koliba et al., 2016; Humphries and Mena, 2012). The challenge of exchanging information in social networks for the purpose value has become a concern in the literature. Koliba et al. (2016) show in their work that the exchange of information between network members improves the production of value. Similarly, Mekonnen et al. (2018), in their work on agricultural innovation in Ethiopia, conclude that the sharing of information and knowledge among network members influences agricultural innovation.

Wang and Hu (2017) recently conducted a study on the mediating role of information exchange in social networks between collaborative innovation activities and the innovative performance of enterprises in China. Yan et al. (2017) share the same perspective when they demonstrated that the internal resources of supplier networks are a source of competitive advantage for the client companies of these suppliers. However, studies of social networks from a dynamic supply chain perspective as a source of supply for SMEs need scientific insight, especially for the purpose of value creating and reducing poverty.

Social network and competence strengthening

Many livelihood markets appear to be characterized by cultures that place high value in social relations (norms, continuation, affective, and normative commitments) and kinship networks (Viswanathan et al., 2010; Wang and Hu, 2017). These markets, most of which are in developing or emerging countries, are micro-enterprises that manage their relationships and commitments with consumers and use their families as they struggle for survival. According to the theory of industrial marketing and purchasing, social networks engage in a long-term process that emphasizes the mutually beneficial relationships to network members in the provision of industrial goods (Humphries and Mena, 2012). Small producers, not really in a context of the industrial market with large quantities sales, thrive with difficulties to produce and sell individually products on the industrial market (Adekambi et al., 2015; Garnett and Godfray, 2012). Thus, social networks can constitute a secure supply chain of raw materials for exporting SMEs to solve two problems, namely strategic supply group to African SMEs’ markets and earning of incomes to face life needs
and to reduce poverty in Africa. Adekambi et al. (2015) enlightened producers’ information use and sharing. Contribution of social networks of agricultural producers in a value creation perspective remains a field to explore especially when its effect can reduce poverty.

Social networks a mechanism for creating added value

Network is beneficial to agricultural producers. It constitutes information and knowledge exchange context especially international market knowledge (Aydin, 2018). In addition, the notion of customers’ added value arises in the marketing literature, particularly market orientation. Indeed, market orientation (OM) is defined as the set of organizational activities that are related to the generation and dissemination of information and good reaction to market demands (Kohli and Jaworski, 1990). Market orientation has a positive influence on firms’ performance (Kirca et al., 2005; Narver and Slater, 1990). The small sales, in an informal context, of activities and the search for the well-being of small producers force them to develop an opportunistic behavior where they sell their products to better requesters (NEPAD, 2013). It is therefore necessary to recognize the need to coordinate networks to make them a source of supply. Trust, commitment and dynamism of networks can shed light on the relationship between small producers and SMEs. Since some decades, smallholders in Africa practice early sale to solve daily problems. Indeed, when small-producer is in financial difficulty, he sells his products even if he will later suffer from this behavior in lean times. In this way, small producers organized within supplier networks may profit from SME’s markets not only by selling their products (earning revenues) but also to have financial credit they need to better cope with survival charges.

SMEs, because of their inability to access credit, need strategic networks of suppliers to increase their skills and advantages in competitive and changing markets (Xu and Lin, 2010). With strategic networks of suppliers, SME can select the most suitable suppliers. While the selection of strategic supplier networks is recognized for their importance in meeting market requirements in developed countries, there is a need for more refined knowledge about the influence of supplier networks on SME exporters’ success and agricultural suppliers’ livelihood.

MATERIALS AND METHODS

According to Cropley (2019), qualitative research is a non-experimental design in a real-life setting, involving collection of verbal reports describing respondents’ construction of the situation in question, and content-based analysis of these reports. Data collection took place from November to December 2016 and covered all departments of southern and central Benin for cassava, and central and north for shea. Cassava and shea are concerned as products. This choice is justified because these products are joined in added value chains which are sustainable added value chains in Benin. Indeed, our exploratory research revealed that these products are used in two ways of added value industries such as distillery and oil factory. They are raw materials established in secure strategic supply-chain for SME firms. This methodology treated three points, first intervention zones and interviewees; second interview guides; and finally data analysis and interpretation tools.

The data collection area and the study sample

Analysis of potential sources of supply includes the organization’s mechanism of the supply chain that ensures the sustainability of the raw materials used in the manufacture of distillery (alcohol) in Benin, both qualitatively and quantitatively. Three areas emerged from the literature as the most potential for the availability of raw materials used in the production of alcohol. They are the departments of Zou-Collines, Oueme Plateau, Mono-Couffo. But only cassava producers in Hills department are retained because they use cassava as incomes products. People who composed our interview database are the producers of raw materials, especially those who produce cassava used by two alcohol factories in Collines (Hills) department. Afterword women’s groups in Borgou, Alibori, Atacora, Donga and Collines department, who collect and transform shea nuts into shea butter and sell to the FLUDOR SA, are concerned. Five focus groups of 8 people were organized to obtain the opinions, comments or their motivations to produce these raw materials. Similarly 12 interviews were conducted (Figures 1 and 2).

The interview guides

For the focus group discussions, the interviews with cassava producers focused on the structure of the raw materials market, commercial practices, customer relations, producer organizations, storage decisions, traceability importance, information sharing, acquisition of skills in networks and value creation. As for the alcohol factories, the maintenance concerned the quantity and quality of the alcohol, the existence of the markets of flow, the quantities produced, the problems related to the industrial production of the alcohol, and then the durability of this production.

Data analysis and results interpretation

Cropley (2019) explains that qualitative analysis aims to reveal data meaning. Data were recorded and transcribed. This transcript is 127 pages long. The content analysis was the method of understanding the corpus of the speeches of our focus group and interviews conducted. Similarly, summary tables of speeches were used. Interpretation of the results relates to the importance of networks in the exchange of information, the acquisition of skills, and the network members’ increasing of incomes. The prospect of securing the supply chain for raw materials by exporting SMEs and SMIs was examined in order to ensure the sustainability of revenues and partnership relations with them.

RESULTS

Market accessibility

Results suggest that producers are looking for markets
Figure 1. Map of shea production areas in Benin.
Figure 2. Map of cassava production and industrial use areas in Benin.
for their raw products because they do not have technologies for processing and/ or lack facilities for storing their crops. In fact, in the absence of adequate transport infrastructure, small producers face great difficulties in accessing markets (Mkenda and van Campenhout 2011; Ismael et al., 2015; Garnett and Godfray, 2012). Cassava growers have some possibilities for processing cassava into finished products, marketed in national and regional markets, namely gari, tapioca, lafu etc. Cassava ships selling is a new opportunity for them because its transformation requires less effort compared to other finished products. Similarly, it is paid in cash, which limits the risk of unpaid payments that small producers in Africa often face when they sell their other finished products especially gari which is delivered to intermediaries on credit to be paid when they have sold the product. This is what a group member in Bantè suggests: "We are looking for markets where we will have the opportunity to sell our products faster in order to obtain such a large amount of income". Income idea is also decisive through the comments of a member of the group settle at Ouessè in the village Laminou "We are used to transform cassava into gari, but any calculation done, the sale of cassava chips in alcohol factories in either Savé and Savalou gives us more income than the other transformations".

Information sharing in network

Cassava is an unorganized agricultural speculation. The distilleries industry market is an opportunity to review how to support producers to better respond to market requirements, especially since the sale is done in cash. Thus the networks of providers exchange experiences on types of varieties that have high productivity. All of them recognize that the variety “ODOHOUNGBO”, not only, does it have a very high productivity compared to other varieties, but also does not turn into a stalk (deteriorate) because it has lasted in the field before being uprooted. Information exchange is very useful in producer networks. They demonstrate this through the fact that they have popularized a more interesting variety of cassava. At Tchogo in the district of Savalou, a member of a group affirms: "The variety of cassava Odohoungbo, remains by far the one we all appreciate, because it gives us time to make the others harvests; it is also of short cycle, a year to eighteen months maximum for a good performance. We had the information by other members of the network who received training which we did not take part". The same remarks are observed at Bantè on the sharing of information between networks. A producer of a network in Bantè says: "Through our networks of friends of producers, not only do we exchange information about varieties, but we also benefit from mutual support from members of our networks. Once programmed the day of the sale, to save the time to the carriers, we form teams to accompany the loading of the trucks. Group sales are more considered in the factories".

Skills and competencies importance

As for the production of cassava chips, the processing techniques of this product are learned between members of supplier networks. Compliance with international standards that increase the quality of the product is the goal pursued by the networks. The chips should be sliced obliquely to be easily dried; they should be clean, free from leaf and shrub debris and without sand grains. To respect these conditions, it is necessary to have equipment to cut the cassava, and the carpets to dry the chips. Unfortunately, small producers do not have the resources to individually respect these standards, so they use networks to gain the skills from the experience of network members. They exchange skills on the process leading to the product value added. Speaking of exchange of skills, a producer from a group of Ouessè confesses "I do not know that, to make cassava chips, still requires competences. My first sale served as a lesson. I delivered it at 85F per kilogram while the normal price was 105F. These Chinese refused to pay me at the market price. It was after this mishap that my cousin showed me the horizontal cutting technique of cassava chips. This skill has been of great use to me. Indeed, my second sale was twenty tons, the gain obtained for this skill is around 20F times 20 000kg or 400 000F. It is very important". The same misadventure was also made by a producer of Bantè. He says "Today we have understood that staying alone in one’s corner is very earnest. I learned a lot from the members of my network, they share their expertise to help us increase the quality of the products. In addition, we also share the costs of transport which was also crazy to sell the products".

Networks have bargaining power

Once the production has been completed, the issue of product transporting from farms to the SME markets is a major concern for network members. Producers come together to divide transport costs by pooling crops to sell on the markets. They agree not only to distribute the expenses but also to distribute the resources obtained from sales according to the productions of the various members of the network. Finally, industries recognize the importance of chips as the only raw material needed to run their industries. The managers of these companies recognize the quality of purchased cassava chips that has a yield of up to 95%. The continuity of supplying of the raw material made it possible to produce alcohol for a period of 10 months out of twelve on the one hand and 4 and a half months on the other hand for the two existing
Table 1. Synthesis of the four themes derived from the interview and focus group data analysis.

<table>
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<tr>
<th>Themes</th>
<th>Statements</th>
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<tr>
<td>Market access need</td>
<td>(i) &quot;We are looking for markets where we will have the opportunity to sell our products faster in order to obtain such a large amount of income&quot;. (ii) &quot;We are used to transform cassava into gari, but any calculation done, the sale of chips in alcohol factories in either Save and Savalou gives us more income than the other transformations&quot;.</td>
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<td>Information exchange is very useful for network producers</td>
<td>(i) &quot;The variety of cassava Odohoungbo, remains by far the one we all appreciate, because it gives us time to make the other harvests, it is also of short cycle, a year to eighteen months maximum for a good performance, we had the information by other members of the network who received training which we did not take part&quot;. (ii) &quot;Through our networks of friends of producers, not only do we exchange information about varieties, but we also benefit from mutual support from members of our networks. Once programmed the day of the sale, to save the time of the carriers, we form teams to accompany the loading of the trucks. Group sales are more considered in the factories&quot;.</td>
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<tr>
<td>Market skills and competencies influencing profit</td>
<td>(i) &quot;I don't know that to make cassava chips, you still need skills. My first sale was a lesson. I delivered it at 85F per kilo when the normal price was 105F. These Chinese refused to pay me at the market price. It was after this mishap that my cousin showed me the technique of horizontal cutting of cassava chips. This skill was of great use. Indeed, my second sale was twenty tonnes, the gain obtained for this skill is about 20F times 20,000kg or 400,000F. This is very important. Today, we have understood that it is very serious to be alone in one's corner. I learned a lot from members of my network, they share their expertise to help us increase the quality of products. In addition, we also share the shipping costs which were also crazy to sell the products&quot;.</td>
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<td>Network bargaining power</td>
<td>(i) &quot;When I used to sell alone my product, they pay it back with many difficulties and they told me regularly that the quantity is too low, but since we start selling in network group, we are considered with respect. It is very easy to sell and we do not waste time&quot;. (ii) &quot;When we sell in network group, they do not complain about the product quality. But, in the same condition, single seller can pay less than a kilogram; the buyers may explain it by the bad quality of the product. Network sellers are appreciated and buyers take care with them&quot;.</td>
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Source: Interview data collected and analysed, from Novembre-December 2016.

distilleries. All their productions are sold on both national and regional markets (notably Togo and Ghana). However, the absence of an organization of the sector is exploited by those responsible for these industries who abuse the suppliers, especially those who are not in networks and who have small quantities to sell. For this category, they are entitled to arbitrarily set sales prices or reject the product for low quality. In this last condition, the producer loses all his production (whose tonnage can be from one ton to three tons) because he did not seek the adequate information to better present his product according to the requirements of the market. All these efforts are worthless.

Then, importance of network is shown. Networks constitute the bargaining power of producers. It is what one member, of Ouesse cassava ships producers, explains: "When I used to sell alone my product, they pay it back with many difficulties and they told me regularly that the quantity is too low, but since we start selling in network group, we are respected by them. It is very easy to sell and we do not waste time". Other member based à Bantè expressed this reality "When we sell in network group, they do not complain about the product quality. But, in the same condition, single seller can be pay less than a kilogram; the buyers may explain it by the bad quality of the product. Network sellers are appreciated and buyers take care with them".

This raises network bargaining power and it influences group sale. SME firms are the institutional context for producers to learn about international market. As they have contract with export market, the respect of international market standard is an obligation for them to entertain commercial relation. The study limits are relative to the number of agricultural sectors such as cassava producers and shea nut collectors and transformation we have integrated in this study. All the results are synthetized in the Table 1.

DISCUSSION

Our results reveal that small producers’ market access remains a worrying issue. The need to sell their products in creditworthy markets is a puzzle to the producers. These results are consistent with those obtained by Ismail et al. (2015) and Garnett and Godfray (2012) who argued that small producers are in need of markets access. WFP (2015)’s work supports these results and
the author argued that when market access is not matched with appropriate pre and post-harvest handing, storage and transportation facilities, there may be food loss and quality issue that may affect the nutrition quality food. Adekambi et al. (2019) command smallholders’ market learning as one of the keys factors to satisfy their market integration requirements. For these authors, market learning enables smallholders to select the customers, and as such marketing channels that are most suitable for their situation and seize the opportunities provided by these customers.

Social networks constitute the sources of informal information exchange. Our result stated that network members exchange information related to crops varieties, market days and transportation fees. This finding is consistent with Viswanathan et al. (2010) and Koliba et al. (2016) whose studies support information exchange between network members. Moreover, sharing skills and experiences between network members improves quality practices in product processing. Our finding is also consistent with those of earlier studies of Mekonnen et al. (2018) and Humphries and Mena (2012) that stated that skills and competences are exchanged in network teams. Skills, competences and experiences exchanges in our work provide revenues for network members. Then, the more the network members have competences, the more the team will benefit from his market integration.

The finding revealed that networks have bargaining power. The producers highlighted the importance of network in supporting the integration process of small producers with markets. They justified this power through facilities, such as transportation cost reduction, they obtain when selling in network teams. To limit waiting lines, SMIs appreciate group sales because they save time.

This result is supported by the results of some earlier works (Yan et al., 2017; Humphries and Mena, 2012) who stated that networks have bargaining power in business negotiations. Our results pointed out that the team power is more remarkable than the network negotiation power. Future research can be directed towards strategic partnerships that can lead to the development of industrial fabrics where small producers will be supplying SMI. Similarly, longitudinal studies must be conducted to better shed light on supplier networks with SMI relationships in developing business relations between producers’ networks and SMI.

Conclusion

The extant literature has largely analyzed market access for small producers as a way of reducing poverty (Mearstens and Verhofstadt, 2013; Romalis, 2007). However, small producers are organized into strategic networks of suppliers of SME exporters to increase the presence of African countries in foreign markets. The present work aims to better understand market access for small producers through markets of exporting SMEs.

The results showed that supplier networks have the capacity to engage in a process of value creation to improve their standard of living. For cassava growers, the formation of supplier networks is forged or imposed by the industrial client units to make small producers group their productions and enhance the buying price which increases from 25 to 45 francs CFA per kg. This constraint of being members of networks before attempting to sell to SMEs allows producers to exchange experiences about the required standards by industries in order to increase the added-value to products on one hand and to secure the supply of the raw material on the other hand. As for shea producers, supplier networks are formed for training purposes to improve skills in the collection of nuts and to deliver nuts of superior quality, leading to increase in the per kilogram price. The motivations of the suppliers are the improvement of skills, the increase of the revenues and the creation of the added value.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES


