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Standards: An Imperative for Integration in Value Chains? Evidence from Agricultural Producers in Honduras

Ingrid Fromm[a] and Utz Dornberger[b]

a Universität Leipzig, Small Enterprise Promotion + Training, Beethovenstr. 15, 04107 Leipzig, Germany. Email fromm@uni-leipzig.de.
b Universität Leipzig, Small Enterprise Promotion + Training, Beethovenstr. 15, 04107 Leipzig, Germany

Abstract

The body of literature and research related to standards and the value chain analysis has increased in recent years. Producers from developing countries participating in value chains are increasingly required to conform to standards. These standards can be set by international bodies (i.e. EurepGAP, ISO14000, SA8000 and HACCP) or private sector lead firms. Because of the changes in food consumption patters in industrialized countries, standards have a greater role in international trade and can accelerate or impede the integration of small producers in value chains. There is evidence that the enforcement of standards leads to learning processes along the chain. Small-scale producers, in their interaction with local processors or exporters and international retailers, have the possibility to acquire new skills and knowledge while complying with standards. The type of trust relationship and power dependence among the actors can determine the successful integration of firms in value chains. For this purpose, 102 agricultural producers in Honduras were analyzed. These producers belonged to the coffee sector (n=42), the horticultural sector (n=38) and the oil palm industry (n=22). The research focused on determining whether the compliance with standards had led to upgrading of internal processes and products in the firm in order to secure a better position in the value chain. It appears that the implementation of standards has an effect on the upgrading activities of the firm, but only product upgrading was significant. Furthermore, the role of standards in the integration process of the firms was studied. The results indicate that firms that had complied with standards were more likely to have higher sales than firms that had not adopted any type of standards. Firms implementing standards could also expect a positive impact on the productivity and profitability. There was also a significant effect on the knowledge gain and the position of producers in the chain. In the case of Honduras, the implementation of standards appears to be a critical factor in the integration of agricultural producers in value chains.

Key Words: Compliance, upgrading, power dependence.

Introduction

Producers participating in global value chains are increasingly required to conform to a number of standards (Kaplinsky, 2004). These standards can be set by international bodies (i.e. ISO9000,

ISO14000, SA8000 and HACCP) or private sector lead firms[1]. Reardon et al. (2001) point out that in developing countries these changes have tended to exclude small producers from participating in market growth, because of the implied investments. According to Humphrey (2005) the enforcement of standards leads to learning processes along the chain and as a result, increased upgrading opportunities are present. The body of literature on upgrading opportunities for firms in developing countries addresses buyer-supplier relationships and coordination as a mechanism for access to global markets and upgrading. Humphrey (2004) states that insertion into value chains can facilitate the entry of developing country firms into export markets as they can specialize in production and do not have to be concerned about such issues as product design, logistics or market requirements in importing countries because these issues are already addressed by the buyers and their agents. Furthermore, the increasingly stringent requirements (i.e. standards) of global buyers in areas such as quality and delivery may offer firms opportunities to add value to products.

Methodology

A systematic sample of agricultural producers in Honduras was taken. Producers were pre-selected from list complied by different institutions[2] and then randomly chosen to be interviewed. Producers belonging to three different types of value chains were examined. These were the traditional primary commodity chain (coffee, n=42), the plantation product chain (palm oil, n=22) and fresh produce chain (n=38). These chains were chosen because they are representative of the situation in which Honduran producers find themselves. Furthermore, most of the agricultural production of the country can be divided into these groups. Fewer producers find themselves in organic chains, for example. Therefore, this schematisation seemed resonant with the current situation of the agricultural sector throughout the entire country. The field research was conducted from May to August 2006 in northern Honduras. Some producers were located in San Pedro Sula, while others were located in the surrounding Sula Valley. A total of 102 producers were interviewed. A questionnaire or statistical survey was used to collect information about subjects or cases in the population. Expert interviews were also conducted. In order to reduce bias, the questions were structured and standardized so that one response did not influence the subsequent questions. All respondents received the same questionnaire with the same order of questions to guarantee reliability and validity. The questionnaire included 78 questions divided into 6 sections: General Information, Firm Characteristics, Performance, Relationship with Buyers and Suppliers, Upgrading, and Standards.

Results and Discussion

The enforcement of standards is becoming increasingly relevant in the value chain analysis and the discussion on integration of developing country firms in global value chains. As a matter of fact, the firms studied – no matter the size – are aware of the importance of standards. This is reflected in the number of firms that had implemented standards, a total of 81 firms, representing 79.4% of the sample. Although a few firms had not complied with standards, they were aware of the importance of standards and knew that this could be a determining factor in their success in

[1] These are known as private sector standards. These standards enable lead firms to determine quality, delivery schedules and traceability of pesticide use, for example. Many of these standards are arguably also entry barriers for small and medium-sized businesses in developing countries because of the high cost of compliance or the lack of knowledge or resources needed to comply with these requirements.

[2] The institutions include: the Honduran Coffee Institute (IHCAFE), the Federation of Oil Palm Producers (FENAHPALMA), the Honduran Foundation for Agricultural Research (FHIA), and Fintrac, CDA Technical Assistance Program.

the business or better yet, in their survival in a competitive market. Agricultural producers have become more aware about these issues since talks began in 2000 on the Central America Free Trade Agreement. Although not all firms export directly, many of them have to comply with lead firm standards because in the end, their products could be exported. This is particularly true in the coffee chain, since most of the coffee production is exported.

There are numerous standards a producer can comply with. More often than not, producers had to comply with more than one standard (Table 1). There is also a greater variety of standards because this study was conducted across different production sectors and thus different standards are required.

Table 1: Type of Standards

	Frequency	Percent
No Standard	17	16.7
1 standard:		
Quality	31	30.4
Environmental	15	14.7
Organic	4	3.9
Fair Trade	2	2.0
Food Safety	1	1.0
Origin	1	1.0
More than 1 standard:		
Quality, Origin	18	17.6
Quality and Environmental	7	6.9
Quality, Environmental, Origin, Best Practice	6	5.9
Total	102	100.0

Out of the 85 firms that did comply with standards, about half have implemented international standards such as ISO9000, ISO14000, SA8000 and HACCP (Table 2). This is more evident in the case of the coffee producers because their product is mostly exported. Among the other international standards implemented, it is worth mentioning that some coffee farmers have Rainforest Alliance and Utz Kapeh certifications. In the case of palm oil production, most of the standards implemented were private, lead firm standards. The palm oil producers participate in a chain where most of their output is sold to the local processors and therefore there is a need to comply with the standards and requisites imposed by these firms. Horticultural producers sell to local supermarkets that are enforcing private standards, and those that export have to comply with international standards.

Most of the firms stated that the regulating body promotion or sometimes even imposing the standards is the customer (94.1%). In few instances the government agencies or public institutions, be it local or foreign, had anything to do with standard imposition or promotion (1.2% and 3.5% of the cases). Whether or not a buyer can impose standards gives an idea about the coordination mechanism of the chain. The other options were added because of the fact that certain compliance with standards must be met before exporting to the EU or USA. This regulatory mechanism was not deemed as relevant by the firms; it appears that the real coordinating body is the buyer.

Table 2: Compliance with Lead Firm or International Standards

	Lead Firm	International
Horticultural	16	17
Coffee	10	20
Palm Oil	17	5
Total	43 (50.6%)	42 (49.4%)

Firms cited different reasons for implementing standards. The answers are equally divided among those firms that believe this is the best strategy to remain in the market (45.9%) and those who think they do this out of competitiveness (48.2%). Firms were asked if the implementation of standards has led to a gain in new knowledge and 82% of those firms asked agree that they have acquired new knowledge (Table 3). They were also asked if they have acquired new technology because of these changes and if they feel that they have a more secure position in the chain as a result of the implementation of standards and upgrading. More than half of the firms (66.7%) have not acquired new technology and over half (64%) also feel that their position in the value chain is more secure.

Table 3: Gains from Standard Implementation

	New Knowledge	New Technology	Secure Position Chain
Yes	84	34	66
	(82.4%)	(33.3%)	(64.7%)
No	18	68	36
	(17.6%)	(66.7%)	(35.3%)
Total	102	102	102

A logistic regression was used to test whether the implementation of standards has an effect on upgrading. This analysis was used because the dependant variable (i.e. position in chain) is a categorical dichotomy and the predictor variables are continuous or categorical. The logistic regression finds an equation of the form:

$$\log[Y/(1\text{-}Y)] = b_0 + b_1X_1 + b_2X_2 + ... + b_nX_n + \varepsilon_i$$

where b_1 is the partial regression coefficient of $\log[Y/(1\text{-}Y)]$ on X_1, or what the slope of the regression line of $\log[Y/(1\text{-}Y)]$ on X_1 would be if all the other X variables could be kept constant. The predictor variable used was the presence of R&D activities.

Table 4: Regression Position in Chain

		95.0% C.I.for EXP(B)			
	B	**S.E.**	**Exp(B)**	**Lower**	**Upper**
Standards	4.447**	1.0.64	0.011	0.001	0.091
Constant	-1.482	0.286	4.4		

Note R^2 = 0.38 (Hosmer & Lemeshow), 0.36 (Cox & Snell), 0.497 (Nagelkerke). Model χ^2 (1) = 45.53, $p < 0.001$.
* $p<0.01$, ** $p<0.001$

The producers were asked if they perceive that the position they have in the chain is more secure as a results of their compliance with standards. Over half of the producers agreed that they had achieved a secure position in the chain. The results of the second logistic regression (Table 4) indicate that the implementation of standards makes a significant contribution in the prediction of the outcome, in this case, a secure position in the chain.

Table 5: Regression Knowledge Gain

				95.0% C.I.for EXP(B)	
	B	**S.E.**	**Exp(B)**	**Lower**	**Upper**
Standards	5.829**	1.149	0.003	.000	.020
Constant	4.382	1.006	80.00		

Note R^2 = 0.67 (Hosmer & Lemeshow), 0.465 (Cox & Snell), 0.767 (Nagelkerke). Model χ^2 (1) = 63.84, $p < 0.001$.
* $p<0.01$, ** $p<0.001$

According to Humphrey (2005) the enforcement of standards leads to learning processes along the chain. The results of the logistic regression (Table 5) confirm this hypothesis. The implementation of standards makes a significant contribution in the prediction of the outcome, which was gain in knowledge in this case.

Conclusion

In the case of agricultural producers in Honduras, compliance with either international or private-sector, lead-firm enforced standards seems to be the only way to participate in value chains. Firms not implementing any standards clearly were profiting less than those firms that had implemented standards. Competition in international markets is not possible if producers do not comply with the required standards. At the local level, private lead firm standards are increasingly becoming the norm. Furthermore, the implementation of standards resulted in learning and the acquisition of new knowledge and thus a more secure position in the chain. Integration in value chains depends largely on the ability of the firm to upgrade its products, processes or functions and to comply with standards.

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