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From Cocoa Producers to Chocolatiers? Developing an Entrepreneurial Model for Small-scale Producers in Honduras

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ABSTRACT

Purpose - The cocoa value chain exemplifies the imbalances often seen in the global trade of commodities. The purpose of this paper is to evaluate the likeliness of cocoa growers to become entrepreneurs and chocolatiers and to reflex about the impact this would have in their socioeconomic context.

Design/Methodology/Approach – This research studies the possibility of entrepreneurial endeavors using the concepts of the Theory of Planned Behavior (TPB) developed by Ajzen (1991). This way, a quantitative model based on the findings from Liñán and Chen (2009) was created, in which the Personal Attitude (PA), Subjective Norm (SN), and Perceived Behavioral Control (PBC) along with other personal and social variables -in this case the Readiness to be an Entrepreneur (RE)- affect directly the Entrepreneurial Intention (EI).

Findings – Findings suggest that 75% of the farmers showed Entrepreneurial Intention and other entrepreneurial characteristics such as knowledge of the market, technology and regulatory framework. The existence of an organization of social capital in the same village, run by the wives of the farmers, also adds to the entrepreneurial intention of the village, since the main goal is to add value and produce chocolate.

Originality/Value – This research provides insight of the mindset shared by Honduran cocoa growers about performing in the chocolate industry. At the same time provides a raw image of the living conditions these individuals face and how their view of the chocolate industry is affected by their need to escape poverty.

Keywords: Entrepreneurial intention, cocoa value chain, chocolate, Honduras

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1 Introduction

For most cocoa producers in Honduras, it is difficult to see where and how the raw material they produce is processed and transformed into chocolate, which is mostly sold and consumed in Europe. Of course, both are linked, and the first steps of agricultural production make the latter possible[1]. Cocoa cultivation has had a long tradition in Honduras and the Mesoamerican region (Da Silva and Rankin 2013).

The Honduran tradition of growing cocoa has been documented since the beginning of the 80's and it can be said that it played a key role in the economy of Honduras at the end of the 20th century. It continued growing at a very fast pace until 1998 when Hurricane Mitch destroyed all the plantations, leaving behind just a memory of such activity. By 2008 some initiatives had already taken place to invest in re-establishing plantations, but with a new focus on sustainable production. Particularly Swiss-funded projects invested in Agroforestry projects, encouraging producers to plant cocoa with hardwood trees for shade, thus diversifying the economy of cocoa producers by not only relying on cocoa but also on timber as an additional source of income.

A Swiss private firm, "Chocolats Halba",[2] chose Honduras as one of its providers of cocoa beans hoping to obtain fine-flavor cocoa while paying producers a fair price and an additional incentive for quality standards met. The result has been the reactivation of the sector and the emergence of new stakeholders across the Honduran cocoa value chain as more and more producers get together in business organizations to trade directly with "Chocolats Halba". Chocolate produced from Honduran cocoa beans is usually produced abroad (Askinosie, 2016; Duffy's, 2016; Friis Holm, 2017; Valrhona, 2017) and worldwide counting the ones in Honduran soil, only 18 companies commercialize the product.

Two categories of upgrading inside Value Chains (VCs) are addressed in this paper; functional upgrading refers to a change in the mix of the product features and implies a value-adding approach; meanwhile, process upgrading refers to improvements in one or more specific processes (Kaplinsky and Morris, 2001).

This study has focused on defining if there are some entrepreneurial behaviors among these actors which would fortify the cocoa industry in Honduras by functionally upgrading from primary agricultural activity to an agribusiness model where some of the semi-processing (for export), processing and marketing can take place in the country. Entrepreneurship and social capital are bound to it; collective entrepreneurship is essential, meaning that this is not a one-man endeavor, but instead a cooperative effort, for which the literature provides the term "Entrepreneurial Social Capital" (Westlund and Bolton, 2003; Johannisson, 2003) and which has as strongest features the reciprocity, cooperation, and trust among the group, such essential feature is better explained in the DACHOJ case. Roxas and Azmat (2014) make emphasis on the relationship of these aspects by implying that the local community can foster and support entrepreneurship, but subsequent research has not entirely studied such aspects (Roxas and Azmat, 2014).

The research was conducted with Honduran chocolatiers to understand this industry and to set a start point for new enthusiasts willing to take the journey of chocolate entrepreneurship. So, the problem is the poverty levels in which the cocoa farmers live and the pursuit of business opportunities in finding solutions to it. The research question at the beginning of this research parted from the assumption that, the solution to this problem is that farmers become entrepreneurs in the chocolate industry:

Can cocoa producers be turned into world-class chocolatiers in the Honduran cocoa value chain?

Furthermore, to understand the complexity of the cocoa value chain, other research questions drafted were made:

- What do Honduran cocoa farmers need to become chocolate entrepreneurs?
- What is the environment in which the chocolate enterprises perform in Honduras?
- Which are the requirements that farmers need to comply with to leave the levels of poverty they face nowadays?
- Is advancing in new echelons of the value chain needed to upgrade the life of farmers?

[1] By 2015, Guatemala was the destiny of 40% of Honduran Chocolate. In smaller proportions El Salvador, United States, Canada, Switzerland, United Kingdom, Netherlands and Japan filled the exports of this product.
[2] Swiss Enterprise in the Chocolate industry.

Even though Honduras produces one of the finest cocoa beans in the world, it has been under-represented in the chocolate industry. As the cocoa sector is growing in the country, it is to be assumed that entrepreneurial activity is also growing. Nevertheless, cocoa farmers live in extreme poverty, according to our calculations an average cocoa grower has the possibility to earn only € 231.56 per month, while Kupferschmied et al. (2018) found a similar value of € 238.57. Functional upgrading (Kaplinsky and Morris, 2001) in the VC plays a key role from the economic point of view on this subject because it entails the transformation of a product by adding value and thus, going up on the VC ladder and eliminating the barriers established by its echelons (te Velde et al., 2006). Therefore, in the context of cocoa production, a reference to chocolate as a "final product" must be made. The cocoa value chain, in particular, relies on the production from millions of small-scale producers to sustain the chocolate industry (ICCO, 2017), along with other derivate industries (i.e. Cosmetics), so functional upgrading in this VC means better chances for people who today live in extreme poverty.

Until now, most of the research has focused on process-upgrading (Kaplinsky and Morris, 2001) the conditions of these farmers' production environment, to get better and fair deals between them and their biggest customers and to teach them sustainable production practices (Brugger, 2014; APROSACAO, 2014; Escoto, 2000; Batista, 2009; Helvetas, 2011) while few have been related to evaluating the current situation of the sector (Chávez et al., 2009; Martínez, 2008).

A thorough analysis must be done not only at the primary production part of the value chain, but also on a retail end to find entry points in the chocolate industry. This can lead to a whole new approach to entrepreneurs already in the business, such as internationalization, standardization, and competence development. At the same time, lessons showed by chocolate entrepreneurs can serve as a blueprint for the associations of farmers eager to take this next step, learning about the challenges and how to overcome them to survive in this new industry.

The objectives of the study focus on three issues.

- To analyze the Honduran chocolate industry and show current trends and potential development
- To find if there is evidence of entrepreneurial behavior among cocoa farmers
- To take the concept of social capital to the field by analyzing the improvement in the cocoa value chain

2 Methodology

The research approach was a mix of qualitative and quantitative research. This research followed the model to build case studies provided by Eisenhardt (1989), the approach of theory of planned behavior (TPB) developed by Ajzen (1985), the appraisal of entrepreneurship in the value chain (Kaplinsky and Morris, 2001; te Velde et al., 2006) and concepts of social capital (Roxas and Azmat, 2014; Westlund and Bolton, 2003).

The research propositions and hypotheses for the study were:

- **RP1:** Honduran Chocolatiers are in the initial phases of VC entrepreneurship.
- **RP2:** Cocoa Farming Associations are fostering entrepreneurial social capital initiatives and self-sustainable policies.
- **RP3:** Some Honduran cocoa farmers present hints of entrepreneurial behavior.
- **H1**: The personal attitude (PA) has a significant relationship with the entrepreneurial intention (EI).
- **H2**: The subjective norm (SN) has a significant relationship with EI.
- **H3**: The perceived behavioral control (PBC) has a significant relationship with EI.
- **H4**: SN has a significant relationship with the PA and PBC.
- **H5:** The RE has a significant relationship with EI.

The first stage of the research was the definition of the qualitative study, the operative definitions were established in this part and were as follows:

1-Cocoa grower/farmer/producer: individual producing cocoa beans as his main income source who can but doesn't need to be part of a cooperative organization. Living in the countryside of Honduras and usually having a household on average of 5 members.

2-Chocolate Entrepreneur: individual producing chocolate, usually living in urbanizations who can but doesn't need to be a cocoa grower.

3-Bean to the Bar Chocolate entrepreneur: is an individual part of the group of chocolate entrepreneurs who produces his/her own cocoa beans and makes chocolate out of them. In the context of this study only one chocolate entrepreneur was fulfilling this criterion and thus no need for extra categorizations was foreseen, is also clear that a farmer producing chocolate with his own harvested cocoa beans would enter in this category in a future research of this type.

It was also in this first stage when in-depth interviews were conducted with chocolate entrepreneurs to get insight about their echelon in the VC, this was the first study on its type in the country. Out of 8 companies found in the second-hand preparatory research only 6 chocolate entrepreneurs or "Chocolatiers" were found active; 4 of them were found in the main city of Honduras; Tegucigalpa in the south/center region of the country, meanwhile the last 2 were in the north in the island of Roatan. Questions about their origins/history, knowledge of the market, technology, financing, and regulations were part of the script.

The second stage was the TPB tool. Already validated by Liñán and Chen (2009), this tool was applied to cocoa farmers to identify their willingness and possibilities to become chocolate entrepreneurs. The tool consisted of a 7-point Likert Scale approaching the constructs of Entrepreneurial Planned Behavior and Readiness to be an Entrepreneur. The operative variables and a brief example of each one are presented[3]:

-Personal Attitude (PA): this aspect refers to the individual's perception of the desirability and positive or negative value of such activity along with the evaluation of feasibility (Liñán and Chen, 2006).

Personal Attitude: Indicate your level of agreement with the following sentences from 1 (total disagreement) to 7 (total agreement).							
Question	1	2	3	4	5	6	7
I have been thinking about becoming an entrepreneur.	☐	☐	☐	☐	☐	☐	☐
Being an entrepreneur implies more advantages than disadvantages to me.	☐	☐	☐	☐	☐	☐	☐
A career as entrepreneur is attractive for me.	☐	☐	☐	☐	☐	☐	☐

Developed by the Authors, based on Liñán and Chen (2009)

Figure 1. PA Sampling

-Subjective Norm (SN): this attribute refers to the weight of the expectations and opinion of important people in the life of the subject towards the performed action. In other words, how the social circle of the individual perceives the fact that the individual effectuates such activity (Krueger et al. 2000).

-Perceived Behavioral Control (PBC): it's the measure of the individual's confidence in being successful by performing the action under study (Ajzen, 1991).

-Readiness to be an entrepreneur: was formed by three of our own criteria; Knowledge and ideas of the market, technology and financing and regulations, these acting like fillers that could be useful in future research and examined a posteriori, they were the link between the in-depth interviews conducted in the qualitative study with the chocolatiers and the results from this quantitative study.

-Entrepreneurial Intention: is the sum of the three parts of the TPB in the study of Liñán and Chen (2009) and to the extent of this study also affected by the readiness to be an entrepreneur in which the orientation reinforces the intention.

[3] The complete questionnaire can be requested from the first author under: ariascortez@campus.tu-berlin.de

Entrepreneurial Intention: Indicate your level of agreement with the following statements from 1 (total disagreement) to 7 (total agreement).							
Question	1	2	3	4	5	6	7
I am ready to do anything to be an entrepreneur.	☐	☐	☐	☐	☐	☐	☐
My professional goal is to become an entrepreneur.	☐	☐	☐	☐	☐	☐	☐
I will make every effort to start/run my own firm.	☐	☐	☐	☐	☐	☐	☐

Developed by the Authors, based on Liñán and Chen (2009)

Figure 2. EI Sampling

The arrangement for the 7-Point Likert Scale was presented as follows:

Table 1.
Scale applied in the TPB tool

Number	Legend
1	Totally disagree
2	Quite disagree
3	Slightly disagree
4	Neither agree nor disagree
5	Slightly agree
6	Quite agree
7	Totally agree

Developed by authors.

Results as gender and education level served as demographic data but had no implication in our model although showing interesting trends.

Out of 24 cocoa farming organizations, the one participating in the quantitative study was COPRACAJUL located in the north of the country (Fig. 3), and 31 farmers took part in the study. COPRACAJUL is the biggest organization (in terms of No. of members) taking part in a second-level organization called APROCACAHO from which its representative was interviewed as closure to the qualitative study.

The third stage consisted of evaluating the data from the TPB tool to determine how the entrepreneurship should be approached in the context of the Honduran cocoa value chain. This was done mixing the TPB compatible profiles and the information obtained from the chocolate entrepreneurs so it can fit both things under a model obtained with the methodology of Kaplinsky and Morris (2001) and Roldan et al. (2013) to finally evaluate the results with the literature of social capital.

It's important to mention that a small economic analysis involving the international price of cocoa beans, along with the harvest yield and comparing it with the cost of living in Honduras was undertaken to identify until which extent cocoa farmers are the prey of extreme poverty. This was done by doing secondary literature research evaluating standardized cocoa yield per plant (EC 2014) and calculating the amount of hectares (Ha) that cocoa farmers in Honduras have to their disposition to later extrapolate the international price of cocoa (ICCO, 2017; APROSACAO, 2014) with the Honduran yield historically achieved (Sánchez et al., 2013) and finally checking the cost of living presented in figures from local newspapers (Redacción, 2016) and secretariat of statistics in the country (INE, 2016).

A big amount of information on the cocoa industry came from the qualitative side with the interview of the representative of the cocoa-farming association APROCACAHO and presented among the results of the quantitative research due to be closely connected. Such collection of information was compiled during the month of December 2016 and January 2017.

Figure 3. Location of the Research
Source: http://google.com/maps

3 Results

As explained before 6 chocolate producers were found in the country. They took part in in-depth interviews in which they were asked to share their history and make a testimonial account of the challenges they needed to overcome to survive in the business context of Honduras.

The main findings from the Chocolate Industry are displayed in Table 2. As discussed before, only one of them; "Chocoschá" has a "Bean-to-the-bar Process", the rest of them buy the cocoa beans from different producers or organizations.

Table 2.
Attributes of the Honduran Chocolate Industry

Enterprise						
Attribute	*Chocoschá*	*McCormick*	*Flor de Cacao*	*Galería de Cacao*	*Mayak*	*Roatán Choc. Fact*
Innovativeness	Drip Irrigation System for Cocoa Crops	High-level chocolate presentation	Several Designs and Handcrafted packages	Differentiated and Unique chocolate product with corn mix.	Chocolate Museum Tour.	First Chocolate enterprise in the international tourists' market
Proactivity	Unique Whole Process production with cocoa beans grown in-house.	Emphasized production on Chocolate diminishing other products already sold in their catalog	Development of specific and unique flavors. Like chocolate with pork rind.	Development of drinkable products and innovative business model mixing art and chocolate.	Adding to free samples, packing problem solved with a normal printer.	Creation of TV advertising on the island's channel.
Risk-Taking Behavior	Bean to the Bar Process.	Huge Investment and Flexibility. Exports First Phase	Strategic Locations Training Abroad.	Higher Flexibility in concern to Business Model and Trademark	Strategic Location near the Marine Road	Strategic Location, Self-funded, First Phase of Exports (Europe)

Developed by authors.

3.1 Entrepreneurial Orientation Evidence

In accordance with Covin and Slevin (2009) the entrepreneurial orientation of the research subjects will be shown under three pre-set parameters in an attempt to revalidate the already existing theory.

Concerning this feature, the lesser risk-taker enterprise is Galería de Cacao which is taking a normal operative risk but shows a moderate approach to it, Santa Lucía is a growing micro-economy in the department of Francisco Morazán. The biggest fact of risk-taking behavior is shown by The Roatán Chocolate Factory with 5 locations and a clear path of internationalization.

Table 3.
Summary of Results

Feature	Description	Cronbach's Alpha Index	Results
RP1: Honduran Chocolatiers are in the initial phases of VC entrepreneurship.			Mostly Small-sized enterprises with two strong exponents of development. Private investment and little access to financing.
RP2: Cocoa Farming Associations are fostering entrepreneurial social capital initiatives and self-sustainable policies.			DACHOJ - Founded: April 2014 - Legalised: July 2017 - Beneficiaries: 29 families - Members: wives of Cocoa farmers, 2 members being single mothers - Value of Assets: $2,000,000.00 - Origin of Investment: Mostly donated by the Japanese cooperation - Processing Capacity: 55,21 Tons/year
RP3: Some Honduran cocoa farmers present hints of entrepreneurial behavior.	36 farmers, members of 1 first-level cocoa production organization		- Males: 30 - Females: 6 - Entrepreneurial Intention: 75% - No Entrepreneurial Intention: 25% Schooling: - No Schooling 8.3% - Elementary School 30.6% - Second Grade Elem. School 11.1% - Secondary School 22.2% - Started College 8.3% - University/Faculty 19.4%
Entrepreneurial Planned Behavior		0.97	
Personal Attitude		0.961	Central Tendency: Median: 6, Mode: 6, Std. Deviation: 1.78

Developed by Authors.

Table 4.
Summary of Results (Cont.)

Feature	Description	Cronbach's Alpha Index	Results
H1: The personal attitude (PA) has a significant relationship with the entrepreneurial intention (EI).	Correlation Coefficient: 0.529		Significant
Subjective Norm		0.935	Central Tendency: Median: 5.50 Mode: 4 Std. Deviation: 1.45
H2: The subjective norm (SN) has a significant relationship with EI.	Correlation Coefficient: 0.565		Significant
Perceived Behavioral Control		0.961	Central Tendency: Median: 5 Mode: 5 Std. Deviation: 1.79
H3: The perceived behavioral control (PBC) has a significant relationship with EI.	Correlation Coefficient: 0.374		Significant
H4: SN has a significant relationship with the PA and PBC.	Correlation Coefficient: 0.465 and 0.521		Significant
Readiness to be an Entrepreneur		0.9	
H5: The RE has a significant relationship with EI.	Correlation Coefficient: 0.512		Significant
Entrepreneurial Intention		0.946	Central Tendency: Median: 5.50 Mode: 6 Std. Deviation: 1.90

Developed by Authors.

3.2 The Cocoa Value Chain

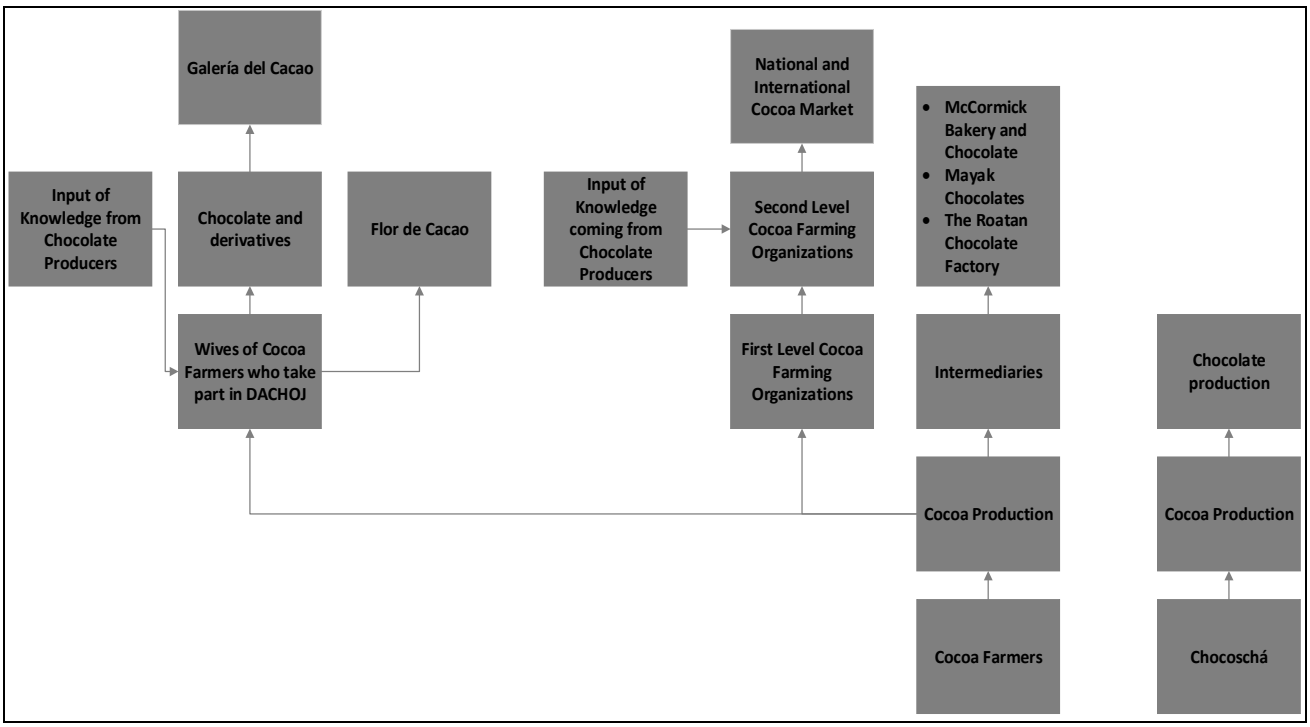
Fig. 4 shows how the cocoa industry is assembled in Honduras including the information of chocolate producers and cocoa farmers.

In their Supply chain diagram Sánchez et al. describe how the echelon of production is formed by first level organizations of producers who deliver their product and get paid. The product then goes through the Sourcing echelon to finally get to the Primary transformation echelon from which out of 16 organizations, only one; “APROSACAO” is in a close relationship and transfer of knowledge initiative with their main buyer, “Chocolats Halba” this is addressed in the sustainability reports of Brugger (2014) and APROSACAO (2014).

In Fig. 4 can easily be seen how after the production echelon, the ones making the commercialization process are organizations of the first or second level. Following the trend of the findings of Sánchez et al. (2013). Another evidence about the lack of interaction between the producers and final markets is the fact that out of 850 Metric Tons of cocoa processed between 2012 and 2013, intermediaries traded 640 of them, this representing the 75% of all the yearly cocoa production. Finally, the local market doesn’t favor cocoa and chocolate, in accordance with Cortez Arias (2017), in an interview with the main representative

of APROCACAHO, less than 1% of the produced cocoa beans in the country is consumed locally, the acceptance of the general public is instead overturned to coffee (Cortez Arias, 2017).

An interesting trait in the cocoa VC is the fact that Honduran Chocolate entrepreneurs have expressed to having provided feedback and transferred knowledge concerning chocolate production to cocoa farming organizations and their members (Cortez Arias, 2017); however in the sustainability reports of Chocolats Halba, the main buyer from Switzerland, the only input provided has been concerning production improvement (Brugger, 2014). The big majority of Honduran chocolatiers are however buying cocoa beans from intermediaries, which shows a not so positive relationship with cocoa production organizations.



Developed by Authors.

Figure 4. Dynamics of the Honduran Cocoa VC.

Following the criteria of previous scholars (Hair et al., 2012), the reliability of the tool for quantitative research was tested. It was important to evaluate not only the constructs but also the sections composing them to avoid discrepancies (Hair, 2017) during the field research that would end up in the wasted potential of exploration.

The Cronbach's Alpha index shows that consistency in the internal constructs was achieved without major changes needed (Saunders et al., 1997) with values almost entirely reaching the 0.9~, which indicates high reliability. The technology section is the lowest with a 0.79 which is already acceptable and thus, it can be concluded that information obtained in the field research is reliable (Pallant 2013). When analyzed according to the assumptions of normality, the results showed that the data was not weighted and thus, not normally distributed; for this reason, nonparametric tools were used to analyze the data and the correlation of the indicators and in this way, test the hypotheses.

As shown in Table 3, the cocoa industry in Honduras is predominantly male, with most of its individuals having achieved an elementary and secondary education. Entrepreneurial behavior is present in 75% of the sample as depicted in Table 3. The level of education was asked to know to what extent is the operation in the cocoa industry carried out by highly-skilled workers with technical or empirical knowledge.

Table 3 shows that while 8.3% are people who never attended school, the biggest percentage of people in the cocoa industry has at least undertaken the courses offered by the elementary school with an outstanding 30.6%, 22.2% have finished the secondary school and a 19.4% have finished the university. Contrasting these figures are the ones of the Chocolatiers, among which the 83.33% have completed university undergraduate programs and being mostly males.

The correspondent measure of central tendency was deemed towards a positive attitude concerning entrepreneurship in the chocolate industry.

PA: A seven-point Likert Scale was used resulting in a higher punctuation for a positive perception of entrepreneurship and a lower punctuation to reluctance towards it. The results show a clear positive trend towards entrepreneurship in the chocolate industry being number 6 "Quite Agree" the most common answer (33.3%) with a very small standard deviation of 1.78 and followed in percentage by number 7 "Totally agree" with 19.4% of the respondents. With this information, the trend shows a clear inclination to Entrepreneurship, the median of the indicators is higher or equal to 5 in each case, special mention must be assigned to the statement of "If I had the opportunity and resources, I'd like to start a firm." Which scores 6.0 as the highest Median, being this a proof of positive attitude undermined by the uncertainty of financing.

SN: To analyze the SN, the question; "If you decided to create a firm, would people in your close environment approve that decision?" was applied to different groups of the social environment of the subjects, the scale again resulted on in a higher punctuation for a positive path to entrepreneurship and a lower punctuation to rejection towards it. The results show moderate acceptance of the idea by having a median and a mode oriented to the center of the scale which means "Some Approval"; an answer relying on several cases on the fact of never having discussed the topic with the described social groups, as verbally expressed by the subjects during the sampling process.

PBC: This section addresses the idea of the subject to be able to deal with everyday facts of the studied behavior, in this case, entrepreneurship. The resulting scale shows a higher punctuation for a positive mindset to control and a lower punctuation to doubt about the uncertainty of this activity. The results show a big confidence from the side of the sample subjects with 5 "Slightly Agree" being the most common answer (16,7% of the respondents).

EI: The entrepreneurial intention is the result of the interaction coming from the PA, SN, and PBC and according to the results shown previously is understandable that this sample evidences a high EI with the most common answer being "Somewhat Agree". The first indicator of the EI meant to determine how serious is the wish to be an entrepreneur between the participants. 30.6% of them answered slightly agree and none of them answered to completely agree.

3.3 Inferential Results

All the hypotheses were accepted due to the correlation analysis conducted. Because of the nature of the data, not normally distributed, the proper tool to apply was the Spearman's Correlation coefficient.

In the case of the H1 he Correlation was found significant with a 2-tailed Significance level of 0.001 and the relationship between PA and EI is a positive 52.9% which is considered statistically "Large". As for the second hypothesis, the sig. 2 tailed level is of 0.000 and its correlation coefficient showing 56.5%, being the strength once again large.

In the case of the PBC, the significance was lower with 0.025 and the correlation coefficient is 37.4% and counting as PBC correlating with the EI with medium strength. In the case of H4, the SN affects directly the PA and the PBC with Sig. 2-tailed levels of 0.004 and 0.001 respectively. Their correlation coefficient shows a medium strengthened level of 46.5% and 52.1%, indicating that, as the SN grows, it will affect both, PA and PBC. In the case of H5, the RE affects directly the EI with a 2-tailed Significance level of 0.001.

The correlation coefficient shows a medium strengthened level of 51.2%, indicating that, as the aspects of knowledge and ideas on the market, technology and Financing/Regulations grow, it will affect also the EI.

3.4 Towards Process Improvement

According to the information provided by APROCACAHO, around 95% of the cocoa farmers live in poverty, however, the numbers calculated with the information of Sánchez et al. (2013) are not easy to confirm due to lack of data and a proper census. According to international standards, each Ha must produce a yearly amount of 2 metric tons (t) of cocoa, which on the international value of cocoa per ton should be sold at € 1,974.58 (ICCO, 2017).

Table 5.

Poverty Conditions for Honduran Cocoa Farmers

Honduran standard		**Expected Standard**	
Average Amount of Ha	1.50	**Average Amount of Ha**	1.50
T/Year	0.85	**T/Year**	3
T/Year/Ha	0.57	**T/Year/Ha**	2
Value	€ 3,269.03	**Value**	€ 3,269.03
Value per Farmer (y)	€ 2,778.68	**Value per Farmer (y)**	€ 9,807.10
Value per Farmer (m)	€ 231.56	**Value per Farmer (m)**	€ 817.26
Average Cost of Food on a regular diet (family of 5)	€ 315.89	**Average Cost of Food on a regular diet (family of 5)**	€ 315.89
Difference	-€ 84.33	**Difference**	€ 501.37

Developed by authors, Adapted from Sánchez et al. (2013), ICCO (2017) and EC (2014).

This difference indicates that cocoa farmers in Honduras are living in extreme poverty with no means to pay normal expenses. This also means that they live in scarcity and rationing food and supplies. However, according to Sánchez et al. (2013), "Chocolats Halba"- who happens to be the most important buyer of Honduran cocoa- buys cocoa at an average price of € 3,269.03. This could be a very good income for farmers, but the yield of cocoa in their plantations is deficient and even if on average, they have 1.5 Ha of arable land, their yield is only 0.85 t per year. Table 5 shows the Honduran standard of cocoa production in comparison to the expected one in accordance with the international standard.

3.5 The DACHOJ Case

DACHOJ is a micro association of women, who happen to be the wives of farmers in the community of Jutiapa, Atlántida. The acronym stands for: "Chocolatier Ladies from Jutiapa"[4]. On its own, DACHOJ is part of the first-level cocoa-farming Association "Limited Cooperative Organization of Agricultural Production *Cocoa Growers from Jutiapa (COPRACAJUL)*".[5] This new finding took place when the TPB tool was applied to cocoa farmers in Jutiapa; DACHOJ is an organization of social capital which promotes value addition in cocoa. At the moment of the preliminary research there was no information concerning this organization, and after screening some of its associates and their president, and comparing it with some news from digital newspapers (Lemus, 2015; Padilla, 2014), some data emerged as shown in Table 3. Recently, new members have incorporated in the association, even women who are wives of farmers from another organization in the region, this showing the advance in the social approach shown by the organization.

In 2015, they received funding from the Japanese International Cooperation for Development, which provided machinery, general tools, and equipment, an investment around the $ 2,000,000.00. such amount of investment shows just how essential collective entrepreneurship initiatives are, for the attempt of a single individual would mean an impossible endeavor.

[4] DACHOJ: Damas Chocolateras de Jutiapa.
[5] COPRACAJUL: Cooperativa de Producción Agrícola "Cacaoteros de Jutiapa" Limitada.

Less expensive options are of course available, however, the amount of investment needed still goes ways higher than what a farmer can hope to earn in a year. According to the chocolatiers of the region, the average invested sum would be around $ 3,000.00 (Cortez Arias, 2017).

DACHOJ has held several workshops on fine-chocolate production with the cooperation of Honduran chocolatiers, and they have reached a decent level of quality selling chocolate bars, pralines and ice cream made of chocolate, however, DACHOJ products have not reached supermarket shelves. This organization is a clear example of what Coleman (1988) argues when he says that the SN works as a manual of behavior for the individual and also shows that social capital is a public good (Putnam et al. 1994), but ultimately, the best empirical proof coming from DACHOJ is that entrepreneurial social capital is alive and local social capital within a community taking trust into new levels by associating familiar, entrepreneurial and organizational linkages into a common effort. Entrepreneurship has been nurtured in the community of Jutiapa and inside COPRACAJUL to add value and advance in the value chain, however, results are still to be evaluated in future research.

To date, DACHOJ has delivered a new income source for families living in extreme poverty levels, a community context, a structure for entrepreneurship and a space for innovation, but all these things have not been enough to position DACHOJ products in supermarkets and retail shops. Honduran chocolate doesn't have fame around the world and thus, it's complicated even for well-established entrepreneurs to export, being this the goal of any entrepreneurial effort, inside communities and even more of this association which has a lot at stake. Mainly, they have a goal of promoting economic growth, social entrepreneurship, and gender equality in society, questioning the pre-existing model of cocoa business as being a "man's activity" and converting the situation into a chocolate industry with production mainly as a male-activity and chocolate-manufacturing as an activity for women. This final is favorable for women, who would have the possibility to make an even greater income than men.

DACHOJ is a proof that the transformation of cocoa production into an industry, at least indirectly through the work of women in a processing plant, is possible, but the clear link to exports and thus, world-class markets is yet to be made.

Before DACHOJ, there was no initiative for the wives of farmers to work. In Honduras, the rural areas are still traditional and that also means only the man works as the wife does the house tasks. As a matter of fact, taking into account that inputs of DACHOJ come from the farmers, possible profits would also be indirectly linked to the man. Finally, initiatives about the empowerment of women in rural areas are taking place (FAO).

From the information compiled from the interview with the representative of APROCACAHO it's realistic to say that, chocolate production is not vital to these farmers because their welfare doesn't need to rely on advancing in the value chain, but on upgrading systematically the process performed in their original echelon, whether they choose the chocolate industry path or not is on them (Kaplinsky and Morris 2001). However, leaving their primary activity unattended while trying to enter another activity can seriously affect their main source of income.

The DACHOJ case is a clear and unique example of social capital in action; according to Putnam (1995) social capital has two stages; Bonding and Bridging. Bonding refers to the social networks established inside a group, while bridging is the connection established among members of heterogeneous groups. DACHOJ shows bonding in the relationship achieved by women bringing their product to the organization to produce chocolate without putting their individual interest over the commonwealth. Bridging is achieved while letting women of which their husbands are part of other cocoa farming organizations, DACHOJ presents an advanced proof of these concepts and at the same time shows how SN conditions the entrepreneurial behavior of a collective, and while not representative in number of affiliates, it does represent a model of entrepreneurship for cocoa producers, the first one in its kind at least in Honduras.

4 Discussion

4.1 Education as a factor of entrepreneurship performance

RP1: Honduran Chocolatiers are in the initial phases of VC entrepreneurship.

In their paper *"Measures and Determinants of Export Success in Agribusinesses,"* Fromm and Dornberger (2005) argue that export intensity is strongly affected by the education and international exposure of managers. In these results, the same trend is evident, but this time concerning the whole body of the chocolate industry as almost a "must" for becoming a chocolatier. The chocolate industry in Honduras is run by individuals with higher education mostly abroad with 50% of them being married couples and the other 50% representing single individuals with a representation of women of 33%. Only one of them expresses not to have EI by the time he was an employee and the new one has 3 years of experience in the industry. Only one of these entrepreneurs has experience as a cocoa grower and it can be said that he's the only one who can really state that his chocolate has the feature of "Bean to the Bar". On the other side, they all buy their product from cocoa farmers directly or through an intermediary who works under fair-trade rules. As a rule of thumb, the expected investment for a chocolate company would be around € 3,000.00 as seed capital.

The cocoa and chocolate industries are not separated and perform very closely, but the promotion efforts from the government are focused on primary production. All the chocolatiers seek funding sources for machinery and working capital. The amount of profit and revenue is not formally stated due to lack of data from the chocolatiers, however, with knowledge of the price of cocoa nibs per Kg and taking into consideration the normal weight of a chocolate bar being 80 grams (g) the most expensive component of a chocolate bar would count for € 0.37, with a sales price of € 4.66 per bar, the gross profit would be around 92%. This percentage, however, is not to be taken as the net profit as taxes and miscellaneous costs are unknown to the extent of this research.

It's important to mention the trend of entrepreneurial orientation shown by the chocolatiers, according to Covin and Slevin (2009), who states that the measure of innovativeness, proactivity, and risk-taking behavior are not achieved completely by any of the test subjects, instead, as collective, they accomplish these three features without a clear winner in all of them, but more or less with modest trends of individual efforts of self-differentiation. "McCormick Bakery and Chocolate Factory" and The Roatan Chocolate Factory figure as the most promising business models and enterprises, their entrepreneurial orientation goes beyond necessity as they develop new ways of expanding.

Finally, when analyzing the chocolate industry, according to the measure of knowledge suggested by Kaplinsky and Morris in their celebrated "*Handbook for Value Chain Research"* (2001) "McCormick Bakery and Chocolate Factory" scores an astonishing 41 in comparison with almost all of the rest operating below 20.

In this sense, it can be clearly seen that by connecting this measure with the one of entrepreneurial orientation, the theories are valid and represented in this study with real actors.

4.2 Entrepreneurial Intention among cocoa farmers

RP2: Cocoa Farming Associations are fostering entrepreneurial social capital initiatives and self-sustainable policies.

RP3: Some Honduran cocoa farmers present hints of entrepreneurial behavior.

There are around 4000 cocoa farmers in Honduras. Several of them are part of first-level cooperative organizations which at the same time are part of second-level organizations like APROCACAHO. About 2000 farmers are part of this association. According to the information provided by APROCACAHO, around 95% of the farmers live in poverty.

There are no restrictions coming from the international buyers to the local transformation of cocoa into chocolate, however, to do so, the volume of cocoa production must be higher, so each farmer can contribute a few cocoa beans to the organizations to build social capital of it and new initiatives of chocolate can be implemented. According to the information gathered in the interview, several cocoa farmers would like to get in the chocolate industry. APROCACAHO was the organization leading the process of the approach to the Swiss market, however, it doesn't hold any interaction of it nowadays since first-level organizations are trading directly with the Swiss buyer to avoid reductions in the payment perceived by the producers. The representative of this organization considers that cocoa farmers must focus on improving the productivity of their lands and to increase their amount of arable land.

4.3 The holding of the presented hypotheses

H1: The personal attitude (PA) has a significant relationship with the entrepreneurial intention (EI).

H2: The subjective norm (SN) has a significant relationship with EI.

H3: The perceived behavioral control (PBC) has a significant relationship with EI.

H4: SN has a significant relationship with the PA and PBC.

As expected from the design of the model, the SN proves to be strongly related to the PA and the PBC, what really catches attention is the way these factors are related to each other; while PA and SN show a large correlation with EI, PBC shows a medium one, thus implying that cocoa farmers are eager to perform in the chocolate industry more by a determination of optimism and positive perception among peers than by knowledge or planned solutions to overcome obstacles. SN doesn't show a strong influence over the PA and PBC as expected, according to the results of Liñán and Chen (2009), however at least the medium strength is enough to validate their model as reliable in this aspect too. This accomplishes the second objective of the research.

H5: The RE has a significant relationship with EI.

Finally, the RE is also related to an influence of "medium" strength which points out that EI in cocoa farmers don't rely on data, business plans or clear understanding of the industry's dynamics, but on emotions and social recognition; this gap can be filled with helping these farmers interested in the chocolate industry by sharing knowledge from inside the value chain and next echelons. Approaching the third objective of the research; *"To take the concept of social capital to the field by analyzing the improvement in the cocoa value chain"*.

Social Capital spread across the cocoa industry shows a big acceptance towards chocolate entrepreneurship, but still, endeavors like DACHOJ need time and fostering to create a strong impact at a macro level in regional and intraregional economy, to the extent of this research, however, a small impact on the lives of its associates has been generated.

5 Conclusions

The Chocolate industry in Honduras is young and relatively small, at the moment of the study the oldest chocolate companies were McCormick Bakery and Chocolate Factory and The Roatan Chocolate Factory both founded in 2010, both in the stage of small-sized enterprises and still the most prominent ones. Apart from the 6 companies participating in the study, no other chocolate company was found. The investment is high, the risk of poor performance as well, and the market is not yet developed. With this landscape, the chocolate industry can internationalize or survive on local demand. Thus, new research must be conducted through time to measure its development. The high amount of investment and the necessary knowledge, make it unlikely for an average cocoa farmer to perform as a chocolatier.

After analyzing the data set delivered as an outcome from the TPB tool, is a fact that, at the behavioral level, the cocoa farmers can be taught and trained to become chocolatiers and considering the high quality of the Honduran cocoa, it can be argued that, at product level, they can be of world class; however, that's only one dimension of the whole phenomenon. For them to become world class chocolatiers, financing and regulation, technology, ideas and knowledge about the market would be determinant parameters to success stories and economic growth of interested parties.

Following the trend of social capital depicted in the Dachoj Case and definition of Putnam et al. (1994) the public good and collective strength in the communities producing cocoa must be fostered and developed following the intentions of creating chocolate enterprises shown in the outcome of the TPB tool.

Furthermore, the entrepreneurial social capital shown in the community of Jutiapa is a clear example of complex-state societies moving on from the pre-established parameters of their perceived destiny to new stages of development starting most of the times with just an idea and a leader inside the social circle, something not that easy to dilute in nowadays structures as depicted by Kotter and Rathgeber (2005). By 2016 no official census had been conducted and it was estimated that in the whole country there were around 3,400 cocoa producers divided into the different zones across the country's territory; this research was conducted in the north of the country where COPRACAJUL is the organization in which the DACHOJ case took place.

The regional social capital igniting the PA, SN, and PBC and directing them to entrepreneurship is defined by the so-called cultural capital, according to Light and Dana (2013) and in these cocoa-grower communities, the entrepreneurial activity is part of it.

It is understood that the sample of DACHOJ is too small and would be unrealistic to generalize its outcome as the "rule of thumb" in any chocolate-production endeavor, however, is also unique in social complexity and success. At the end of the day, economic growth will happen through the economic activity of commercializing chocolate products; if that will create economic development and finally world-class commerce is still to be evaluated through the years.

References

Acs, Z. J., Audretsch, D. B. (Eds.) (2005). Handbook of Entrepreneurship Research. An Interdisciplinary Survey and Introduction. The Cognitive Psychology of Entrepreneurship. With assistance of Norris F. Krueger, Jr. Kluwer Academic Publishers. New York: Springer Science +Business Media, Inc.

Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior: Springer Berlin Heidelberg. Available online at http://link.springer.com/content/pdf/10.1007%2F978-3-642-69746-3_2.pdf.

Ajzen, I. (1991). The theory of planned behavior. In *Organizational Behavior and Human Decision Processes* 50 (2), pp. 179–211. DOI: 10.1016/0749-5978(91)90020-T.

APROSACAO (2014). Progress Report November 2014.

Askinosie (2016). 70% Dark Chocolate Bar | Askinosie Chocolate. Available online at https://www.askinosie.com/70-cortes-honduras-dark-chocolate-bar.html, checked on 8/3/2016.

Bateman, Th. S., Crant, J. M. (1993). The proactive component of organizational behavior. A measure and correlates. In *J. Organiz. Behav.* 14 (2), pp. 103–118. DOI: 10.1002/job.4030140202.

Batista, L. (2009). Guía Técnica, El Cultivo del Cacao. Edited by Nazario Rizek. FUNDESYRAM.

Brugger, K. (2014). Second inform of sustainability chocohalba.

Cámara de Industria Hondureño-Alemana (2014). Misión HN-SCHOKO: Chocolate 100% hondureño! Available online at http://honduras.ahk.de/newsletter-system-v2/newsletter-es/mision-hn-schoko-chocolate-100-hondureno/, checked on 8/3/2016.

Chávez, A., Oscar E. Chafla, G., and Jorge, L., (2009). Plan de negocios para la exportación de cacao (Teobroma cacao) orgánico al mercado europeo, producido bajo un sistema agrofore.

Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure 94.

Cortez Arias, R. A. (2017): Can Suppliers in the Value Chain be turned into Competitive Entrepreneurs? A Study of Cacao Farmers and Chocolatiers in Honduras. Master Thesis. Universität Leipzig, Germany.

Covin, J. G.; Slevin, D. P. (2009). A Conceptual Model of Entrepreneurship as Firm Behavior, 11/17/2009.

Dominguez, E. (2016). Una pequeña fábrica de chocolates - Diario El Heraldo. Available online at http://www.elheraldo.hn/alfrente/566503-209/una-pequena-fabrica-de-chocolates, checked on 8/3/2016.

Duffy's (2016). Honduras "Indio Rojo" 72% - Duffy's Chocolate. Available online at http://www.duffyschocolate.co.uk/shop/chocolate-bars/honduras-indio-rojo-72, checked on 8/3/2016.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. In *The Academy of Management Review*, **14** (4):532. DOI: 10.2307/258557.

Escoto, J. (2000). 15 AÑOS DE GENERACION Y TRANSFERENCIA DE TECNOLOGIA AGRICOLA. FHIA. Available online at http://www.fhia.org.hn/dowloads/15agenytransftecnologia.pdf, checked on 2/16/2016.

Friis H. (2017). Friis Holm - Award-Winning Chocolate Using Premium Quality Cocoa Beans. Available online at http://cocoarunners.com/maker/friis-holm/, checked on 1/24/2017.

Fromm, I. (2007). Upgrading in Agricultural Value Chains. The Case of Small Producers in Honduras. In *SSRN Journal. DOI:* 10.2139/ssrn.1071669.

Fromm, I. (2008). Is Upgrading in Agri-Food Chains Possible? The Case of Small and Medium-sized Producers in Honduras.

Fromm, I., Dornberger, U. (2005). Measures and Determinants of Export Success in Agri-Businesses: A firm-level analysis of small and medium-sized enterprises in Honduras.

Gereffi, G. (1994). The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape *Overseas Production Networks*: 95–122.

Gereffi, G., Humphrey, J., Kaplinsky, R., and Sturgeon*, T. J. (2001). Introduction. Globalisation, Value Chains and Development. In *IDS Bulletin*, **32** (3): 1–8. DOI: 10.1111/j.1759-5436.2001.mp32003001.x.

Giuliani, E., Pietrobelli, C., and Rabellotti, R. (2005). Upgrading in Global Value Chains. Lessons from Latin American Clusters. In *World Development*, **33** (4): 549–573. DOI: 10.1016/j.worlddev.2005.01.002.

Helvetas, Honduras (2011). INFORME ANUAL HELVETAS 2011.

ICCO (2017): ICCO Daily Prices of Cocoa Beans. Available online at https://www.icco.org/statistics/cocoa-prices/daily-prices.html, checked on 2/1/2017.

Jamieson, S. (2004). Likert scales. How to (ab)use them. In *Medical education*, **38** (12): 1217–1218. DOI: 10.1111/j.1365-2929.2004.02012.x.

Johannisson, B.(2003). La modernisation des districts industriels. In *Revue internationale P.M.E.*, **16** (1): 11. DOI: 10.7202/1008431ar.

Kaplinsky, R., Morris, M. (2001). A Handbook for Value Chain Research.

Kotter, J. P., Rathgeber, H. (2005): Our iceberg is melting. Changing and succeeding under any conditions. New edition. New York, New York: Portfolio/Penguin.

Lemus, L. (2015). Jutiapa producirá el mejor chocolate de Centroamérica. Edited by La Prensa. La Prensa. Available online at http://www.laprensa.hn/economia/829437-410/jutiapa-producir%C3%A1-el-mejor-chocolate-de-centroam%C3%A9rica, checked on 5/24/2017.

Light, I., Dana, L.-P.(2013). Boundaries of Social Capital in Entrepreneurship. In *Entrepreneurship Theory and Practice*, **37** (3): 603–624. DOI: 10.1111/etap.12016.

Liñán, F., Chen, Y.-W. (2009). Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. In *Entrepreneurship Theory and Practice*, **33** (3): 593–617. DOI: 10.1111/j.1540-6520.2009.00318.x.

Martínez, I. (2008). Diagnóstico sobre la situación actual del Cacao (Theobroma cacao L.) y perspectivas sobre la producción de Cacao fino de aroma en Honduras.

Mitchell, J., Coles, Chr.(2011). Markets and rural poverty. Upgrading in value chains / edited by Jonathan Mitchell and Christopher Coles. London: Earthscan.

OEC: The Observatory of Economic Complexity. Available online at http://atlas.media.mit.edu/en/, checked on 8/30/2016.

Padilla, G. (2014). El cacao, oxigeno para nuestras montañas y nuestra economía. Edited by HRN. Available online at http://radiohrn.hn/l/noticias/el-cacao-oxigeno-para-nuestras-monta%C3%B1as-y-nuestra-econom%C3%ADa, updated on 6/5/2017, checked on 6/5/2017.

Putnam, R. D., Leonardi, R., and Nanetti, R. Y. (1994). Making democracy work. Civic traditions in modern Italy. 5. print., 1. Princeton paperback print. Princeton, NJ: Princeton Univ. Press.

Roldan, M., Fromm, I., and Aidoo, R. (2013). From Producers to Export Markets: The Case of the Cocoa Value Chain in Ghana.

Roxas, H., Azmat, F. (2014). Community social capital and entrepreneurship. Analyzing the links. In *Community Development* 45 (2), pp. 134–149. DOI: 10.1080/15575330.2014.880495.

Sánchez, S.,Escobedo, A., Villalobos, M., and Somarriba, E. (2013). Uso actual y oferta de tecnologías sostenibles en las cadenas de valor del cacao en Honduras para mejorar la seguridad alimentaria.

Shapiro, H.-Y. (2016). MARA P. SQUICCIARINI AND JOHAN SWINNEN (eds.). The Economics of Chocolate. Oxford University Press, Oxford, 2016, 496 pp., ISBN 978-0198726449, $45.00. In *J Wine Econ*, **11** (03): 471–475. DOI: 10.1017/jwe.2016.34.

te Velde, D.W., Rushton, J., Schreckenberg, K., Marshall, E., Edouard, F., Newton, A., and Arancibia, E. (2006). Entrepreneurship in value chains of non-timber forest products. In *Forest Policy and Economics*, **8** (7): 725–741. DOI: 10.1016/j.forpol.2005.06.010.

Valrhona: Tasting Bar | Valrhona GUANAJA 70%. Available online at https://www.valrhona-chocolate.com/valrhona-guanaja-70.html, checked on 1/24/2017.

Westlund, H., Bolton, R. (2003). Local Social Capital and Entrepreneurship.