



## Consumer Preferences for Local Chocolate Consumption. Implications from Market Segmentation at Ecuador

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### ABSTRACT

In this paper, we present a study of consumer preferences for chocolate consumption at Ecuador. The objective of the study was to identify consumer preferences for the following attributes of chocolate: organic, origin, composition, flavour, packing, recognized brand image. A self-administered questionnaire was used with the possible combinations of the aforementioned attributes as a preference elicitation method. Conjoint analysis procedure facilitated the identification of customers' preferences on product attributes, predict the optimal combinations of product attributes and show which attributes are the most important considering when they evaluating product alternatives. A cluster analysis with the preferred option was employed to identify distinct clusters that reflected respondents' different product preferences. The results shows that the type of chocolate that will most satisfy consumer preferences is the organic, locally sourced, combined with nuts, bitter, and packaged with plastic cover with a recognized brand image. Four different groups of consumers were identified. The results obtained facilitate the future behavior of producers and marketers of chocolate in the Ecuadorian market to boost the consumption of locally produced chocolate.

**Keywords:** Consumer preferences; chocolate; conjoint analysis; consumer segmentation.

**JEL Codes:** M, M3, M31.

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### 1. Introduction

Ecuador is historically and economically linked to the production and export of cocoa (Jácome, 2012; Naranjo Chiriboga, 2010). Ecuador has an added value compared to other countries with respect to the production of domestic chocolate; its cacao National Arriba, has a designation of origin. It also covers 70% of the global production of Fino de Aroma, recognized for its unique organoleptic characteristics such as floral and fruit (Cordovez Gómez, 2014; Erazo Castro & García Chang, 2016; Molina Vivero, 2017).

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Despite being the country producing the finest cocoa, is not recognized as the producer of the best chocolates in the world. The reality is that a good part of the domestic consumption of chocolate comes from countries like Switzerland and Italy made precisely with the fine Ecuadorian cacao (Alianza para el Emprendimiento e Innovación, 2014; Naranjo Chiriboga, 2010). In the last decade, the country has considered generating an import substitution strategy, in particular with the cocoa-related agro-industry.

The strategy has been giving concrete results. Sales of the Ecuadorian chocolate industry have increased in 2016 with sales around USD 123, compared to USD 118.3 million in sales in 2015 and USD 84.1 million in 2010. Trademarks have also increased, in 2004, in the Institute of Promotion of Exports and Investments (Pro Ecuador), there were two companies registered and currently 30 compete in the country. These brands have already obtained important international awards which ratifies the quality of the cocoa and the innovative capacity that exists in Ecuador to generate products of international quality (Andrade & Flores, 2008; Córdova, 2016; Reyes, 2016; Zambrano, 2016).

However, despite the fact that there are 143 establishments in Ecuador where chocolate is sold, annual per capita consumption in Ecuador is around 300 grams, well below its Latin American neighbours (Córdova, 2016). Ecuadorian per capita annual spending rose from USD 5.8 in 2008 to USD 7.5 in 2016 (Andrade & Flores, 2008; Reyes, 2016).

These data reveal the need and challenge of boosting local consumption in Ecuador. In this sense, it becomes necessary to know the preferences of consumers to develop products that encourage consumption. The popularity of cocoa products resides mainly in their sensory properties, such as taste and flavour and the demand for chocolate has become more sophisticated in recent years (Córdova, 2016; González, Pérez, & Palomino, 2012; Torres-Moreno, Tarrega, Costell, & Blanch, 2012; Zambrano, 2016).

Previous research have focused on consumer preferences for chocolate using diverse attributes and consumer-specific characteristics such as demographic and social information, as well as attitudes and purchasing habits, to distinguish segments (Cordovez Gómez, 2014; Dian & Dedy, 2015; Erazo Castro & García Chang, 2016; Norhayati & Ayob, 2014; Rodrigues, Condino, Pinheiro, & Nunes, 2016; Rodrigues et al., 2016; Rousseau, 2015; Sune, Lacroix & Huon de Kermadec, 2002; Torres-Moreno et al., 2012). However few studies have addressed the analysis of consumer preferences incorporating attributes such as the geographical origin and preference for the organic or products with certifications of social and environmental responsibility (Cordovez Gómez, 2014; Erazo Castro & García Chang, 2016; Molina Vivero, 2017; Mugerá, Burton, & Downsborough, 2017; Torres-Moreno et al., 2012). All the mentioned attributes are of vital importance to reach the goal of increasing consumption of local chocolate. On the other hand, to the best of our knowledge no known study has identified real consumer segments based on preferences for chocolate attributes.

By using conjoint analysis the objectives of this study is two-fold. First, identify those relevant attributes of chocolate and the importance of these attributes to the consumer, second, identified consumer segments with different product preferences. A novelty of this paper is then empirically investigate de most important attributes in determining consumers' preferences when selecting chocolate for their consumption at Ecuadorian market.

The organization of this paper article is described below. The following is the literature review in relation with the importance of consumer preferences studies and the experience at Ecuador in this field, remarking the utility of conjoint analysis for this porpoise. This section also present two main hypothesis out of the review. Section 3 describes the method used to carry out the study. Section 4 shows the main findings in the context of the hypothesis we try to prove. The final section presents discussion and limitations of the study.

## 2. Literature review

The need of improve existing products and to develop customized new ones require information on consumers' preferences in order to be able to meet their needs (Maldonado, Montoya, & López, 2017; Wang, Chen, Huang, Contractor, & Fu, 2016). The analysis of consumer preferences is the subject of research in a variety of fields, such as telecommunication, transportation, tourism, clothing, engineering, design and food (Confraria, Ribeiro, & Vasconcelos, 2017; Meeran, Jahanbin, Goodwin, & Quariguasi Frota Neto, 2017; Liao, Molin, & van Wee, 2017; Ramos, Ramos, & Ramos, 2004; Millan & Mittal, 2017; Wang et al., 2016; Aprile, Caputo, & Nayga, 2016; Bernabéu, Díaz, Olmeda, & Olivas, 2011; Mugerá et al., 2017; Ryu,

Shin, Kim, & Kim, 2017; Sandvik, Nydahl, Marklinder, Næs, & Kihlberg, 2017; Shan et al., 2017; Wang et al., 2017). The above demonstrates that the knowledge consumers' preferences remains an important topic in marketing research and consumer behavior.

Consumer preference is substantially vital to comprehend the level of interest of the consumer on product offering. Studies for locally produced and processed products have been used to justify the introduction of new products and improve the existing (Gumirakiza, Curtis, & Bosworth, 2017; Jones, 2016; Mehra, & Singh, 2016; Millan & Mittal, 2017; Muger et al., 2017; Shu, Zeithammer, & Payne, 2016).

Consumer preference is important in the current study because it provides an important insight in order to improve supply and increase consumption of local chocolate successfully at Ecuador and to predict consumer demand on local chocolate products. Chocolate is considered a product of national pride in Ecuador and has been the subject of multiple investigations trends in production and consumption (Alianza para el Emprendimiento e Innovación, 2014), cocoa processing and sub-processing (Jácome, 2012), preferences based on local chocolate (Molina Vivero, 2017), local dark chocolate acceptability (Torres-Moreno et al., 2012), consumption of chocolates in millennial (Erazo Castro & García Chang, 2016) and consumer choices (Cordovez Gómez, 2014). Despite the significant attention to consumers' interest toward local chocolate, there is still demand for research investigating the consumer preference and segmentation based on it.

These Ecuadorian researches adds to the great worldwide interest in the study of chocolate: quality of milk chocolate bars (Dian & Dedy, 2015), temporal dominance of sensations of chocolate bars (Rodrigues, Condino et al., 2016), role of organic and fair trade labels when choosing chocolate (Rousseau, 2015), consumption of chocolate, cocoa and substitutes (Martín Cerdeño, 2007) and comparison of sensory attribute use by children and experts to evaluate chocolate (Sune et al., 2002), sensory quality of chocolates (Norhayati & Ayob, 2014).

The aforementioned have proven that investigating consumer preference for chocolate could contribute to the improvement of the local supply of chocolate at Ecuador and promote its consumption. It is the authors' opinion that the studies carried out before do not contribute to this objective.

In previous researches it is generally accepted that the products among which the consumer must make an election have different attributes, offered at different levels (Aprile et al., 2016; Bernabéu, Díaz, & Oliveira, 2016; Millan & Mittal, 2017; Muger et al., 2017; Ryu et al., 2017; Shan et al., 2017). These attributes and their levels allow the products to differentiate themselves from their competitors and gain the preference of some segment of consumers (Martins Menck & Oliveira, 2014a).

Consumers consider combinations of attribute levels when they develop preferences and select products according to the perception of the utility they provide. This is object of interest for decision makers since it allows determining the contribution of each of the attributes and their levels to consumer preferences and using the results obtained to (1) design new products or improve existing ones, (2) determining consumer segments and (3) estimating market shares for products with different combinations of attribute levels.

To achieve these goals, some of the consumers' preferences studies employed Conjoint analysis (Chowdhury, Salam, & Tay, 2016; Meeran et al., 2017; Ryu et al., 2017; Shan et al., 2017). In these studies, conjoint analysis is considered adequate for assessing consumer acceptance and preferences for existing or new products and its acceptance and level of use has been remarkable since its appearance in the early 1970s (Aribarg, Burson, & Larrick, 2017; Meeran et al., 2017; Shan et al., 2017; Martins Menck & Oliveira, 2014b).

Conjoint analysis has proven to be an effective procedure for identifying customers' preferences on product attributes, predict the optimal combinations of product attributes and show which attributes are the most important considering when they evaluating product alternatives (Aribarg et al., 2017; Maldonado et al., 2017; Ryu et al., 2017). Concerning consumers' preferences, the aforementioned is vital because increases the chances of improving or developing the most attractive product attributes that influence a consumer's product selection process. More importantly, conjoint analysis allows the prediction, through the analysis of the preferences of an individual consumer for the attributes of a product, of a potential market share (Aribarg et al., 2017).

The attributes and levels used to determine chocolate consumption preferences are varied (Aribarg et al., 2017; Fálder Rivero, 2005; Farías & Fistrovic, 2016; Rodrigues, Condino et al., 2016; Rodrigues, Souza et al., 2016; Rousseau, 2015; Dos Santos Navarro da Silva et al., 2013). This research will

focus on geographical origin and preference for the organic or products with certifications of social and environmental responsibility. This is so because about these attributes there are only presumptions about the preferences of the Ecuadorian consumer (Andrade & Flores, 2008; Córdova, 2016). Existing figures and interviews with producers in Ecuador show that the consumption of Ecuadorian chocolate grows (Reyes, 2016; Zambrano, 2016). Thus, the first hypothesis is:

H1. The attribute local production has a direct effect on consumer preferences.

It also said that Ecuador is one of the countries with the highest consumption of organic chocolate (Andrade & Flores, 2008; Córdova, 2016). Hence, it is hypothesized that:

H2. The attribute organic has a direct effect on consumer preferences.

### 3. Method

#### 3.1 Sample

The study was carried out in April 2017 with a sample of 1,600 participants from Santo Domingo de los Tsáchilas, Ecuador. A quota sampling developed, taking into account the limitations of time and budget.

The concerned population was the buyers of four supermarkets (very high prices, high prices, medium prices and low prices). This allow dividing into mutually exclusive subgroups. Since the amount of buyers at these supermarkets has no big difference, a 400 quota was assigned by judgment. All buyers who included chocolate in their purchases were surveyed until the quota was reached. In relation to the research instrument, apart from the conjoint study, the questionnaire included six questions concerning sociodemographic characteristics. Table 1 provides a summary of the sample's profile.

Table 1.

*Sample's sociodemographic profile*

Characteristics	Percentage	Characteristics	Percentage
<i>Monthly income</i>		<i>Marital status</i>	
Minimum living wage	26.9	Single	38.5
2 Minimum living wage	38.4	Married	17.5
3 Minimum living wage	23.6	de facto	13.2
3 Minimum living wage +	11.2	Divorced	30.8
<i>Employment status</i>		<i>Age</i>	
Self employed	42.7	- 20	9.2
Employed	21.0	21–35	28.6
Student	15.9	36-50	39.2
Unemployed	9.9	51-60	14.6
Retired	10.5	60 +	8.4
<i>Education</i>		<i>Gender</i>	
Primary	34.8	Male	47.7
Secondary	42.8	Female	52.3
Tertiary	22.5	<i>Total</i>	100.0

#### 3.2 Design of investigation

The current study selected the rating-based conjoint analysis for two reasons. First, this method can generate utility scores at the individual-level, which was desirable for the subsequent consumer segmentation (Aribarg et al., 2017; Bernabéu et al., 2016; Meeran et al., 2017; Shan et al., 2017).

Based on previous studies (Aribarg et al., 2017; Cordovez Gómez, 2014; Erazo Castro & García Chang, 2016; Farías & Fistrovic, 2016; Rodrigues, Condino, et al., 2016; Rodrigues, Souza, et al., 2016; Rousseau, 2015; Dos Santos Navarro da Silva et al., 2013; Sune et al., 2002; Torres-Moreno et al., 2012) and focus group discussions with 25 consumers, six chocolate attributes and its levels were identified for use in the choice scenarios. The combinations are organic (yes or no); Origin (local or foreign); Composition

(just chocolate, milky, combined with tropical fruits or combined with nuts); Flavour (bitter, semi bitter or sweet); Packing (box or plastic cover) and Recognized brand image (yes or no).

In total, 192 product profiles were generated from the full-profile design. In order to reduce the number of questions required of a given respondent, an orthogonal design was performed using the IBM Statistical Package for the Social Sciences version 23. Table 2 shows the cards of hypothetical 20 product profiles generated.

Table 2.  
*Cards of hypothetical product profiles*

Card ID	Organic	Origin	Composition	Flavour	Packing	Recognized brand image
1	Yes	Foreign	Combined with nuts	Bitter	Box	No
2	No	Foreign	Just chocolate	Semi bitter	Box	No
3	Yes	Foreign	Combined with tropical fruits	Sweet	Box	Yes
4	Yes	Local	Milky	Sweet	Plastic cover	No
5	Yes	Foreign	Combined with nuts	Bitter	Plastic cover	No
6	No	Local	Combined with nuts	Sweet	Box	Yes
7	Yes	Local	Just chocolate	Bitter	Box	Yes
8	No	Foreign	Just chocolate	Sweet	Plastic cover	No
9	No	Local	Combined with tropical fruits	Bitter	Box	No
10	No	Local	Combined with tropical fruits	Bitter	Plastic cover	No
11	No	Foreign	Milky	Bitter	Box	Yes
12	No	Foreign	Milky	Bitter	Plastic cover	Yes
13	Yes	Foreign	Combined with tropical fruits	Semi bitter	Plastic cover	Yes
14	Yes	Local	Just chocolate	Bitter	Plastic cover	Yes
15	No	Local	Combined with nuts	Semi bitter	Plastic cover	Yes
16	Yes	Local	Milky	Semi bitter	Box	No
17 <sup>a</sup>	Yes	Foreign	Combined with tropical fruits	Bitter	Box	No
18 <sup>a</sup>	Yes	Local	Combined with tropical fruits	Sweet	Box	Yes
19 <sup>a</sup>	Yes	Foreign	Just chocolate	Bitter	Box	Yes
20 <sup>a</sup>	No	Foreign	Combined with nuts	Semi bitter	Box	No

a. Holdout

In addition to the normal cases of the plan, four reserved cases (17 to 20) were created. Reserved cases are judged by subjects, but are not used in the conjoint analysis procedure to estimate utilities. They are used later to estimate the validity of the estimated utilities.

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### 3.3 Instruments and procedure

The method used to implement the survey was face-to-face interviews showing cards to the respondents and asking for an order of preference between them. The data collected is analysed supposing that the order chosen by the respondents expresses utility maximization. The utility  $U_{ijn}$  that consumer  $i$  can gain by choosing the  $j$ -th product ( $j = 1, 2$  or  $3$ ) in the  $n$ th choice situation ( $n = 1, 2, \dots, 6$ ) can be displayed as a linear equation in the form:

$$U_{ijn} = X_{ijn}\beta + e_{ijn}$$

Where  $\beta$  is a vector of unknown marginal utilities that are to be estimated for the products attributes, and  $e_{ijn}$  is an error term that represents that random component of the utility function. In this study we estimate the following basic model for chocolate:

$$U_{ijn} = \beta_0 \text{Organic} + \beta_1 \text{Origin} + \beta_2 \text{Composition} + \beta_3 \text{Flavour} + \beta_4 \text{Packing} + \beta_5 \text{Recognized brand image} + e_{ijn}$$

A cluster analysis with the preferred option was employed to identify distinct clusters that reflected respondents' different product preferences.

## 4. Result and discussion

The information provided by the 1,600 participants in the study was the input to build the necessary data matrix to perform the Conjoint analysis. All the attributes were consider LINEAR taking into account that the data obtained are expected to be linearly related to the attribute in question. It is also expected a high preference for all attributes for this reason MORE is used. The specification of this relation does not change the sign of the coefficients that will be found nor does it affect the estimation of the utilities of the attributes. Table 3 show the model description.

Table 3.

Model Description

Attributes	Number of Levels	Relation to Ranks or Scores
Organic	2	Linear (more)
Origin	2	Linear (more)
Composition	4	Linear (more)
Flavour	3	Linear (more)
Packing	2	Linear (more)
Brand image	2	Linear (more)

Note: All factors are orthogonal

Table 4 shows the utility (part-worth) scores and their standard errors for each factor level. Higher utility values indicate greater preference.

Table 4.

Utilities scores

Attributes	Levels	Utility Estimate	Std. Error
Organic	Yes	-0.375	0.931
	No	-0.750	1.862
Origin	Local	1.700	1.862
	Foreign	0.850	0.931
	Just chocolate	0.770	0.416
Composition	Milky	1.540	0.833
	Combined with tropical fruits	2.310	1.249
	Combined with nuts	3.080	1.665
Flavour	Bitter	-0.864	0.561
	Semi bitter	-1.727	1.123

Attributes	Levels	Utility Estimate	Std. Error
Packing	Sweet	-2.591	1.684
	Box	0.550	0.931
	Plastic cover	1.100	1.862
Brand image	Yes	-1.075	0.931
	No	-2.150	1.862
(Constant)		8.161	3.172

As expected, there is a relationship between Organic attribute and utility, with product organics corresponding to higher utility because smaller negative values mean higher utility. The Local Origin of chocolate corresponds to a higher utility, as anticipated. This results support the hypothesis raised and the presumptions presented in the revised literature. Table 5 summarized the linear regression coefficients for the analysed attributes.

Table 5.

*Coefficients*

Attributes	$\beta$ Coefficient Estimate
Organic	-0.375
Origin	1.700
Composition	3.080
Flavour	-0.864
Packing	1.100
Brand image	-1.075

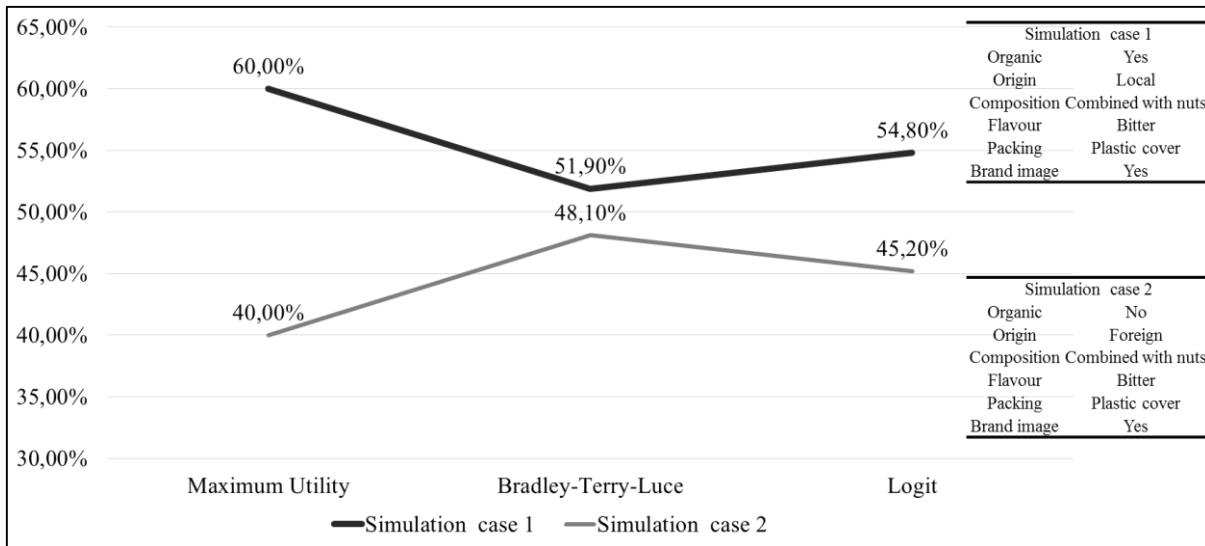
The type of chocolate that will most satisfy consumer preferences is the organic, locally sourced, combined with nuts, bitter, and packaged with plastic cover with a recognized brand image. Since the utilities are all expressed in a common unit, they can be added together to give the total utility of any combination is possible to say that the total utility of the most preferred chocolate (mpch) can be expressed as follow:

$$U_{mpch} = -0.375 + 1.700 + 3.080 + (-0.864) + 0.550 + (1.100) + 8.161 = 13.35$$

The range of the utility values (highest to lowest) for each factor provides a measure of how important the factor was to overall preference. Factors with greater utility ranges play a more significant role than those with smaller ranges: Composition (27.700), Flavour (23.109), Brandimage (13.737), Origin (12.417), Packing (11.901) and Organic (11.137). The previous information provides a measure of the relative importance of each factor expressed in percentages.

The results show that Composition has the most influence on overall preference. This means that there is a large difference in preference between product profiles containing a combination of chocolate with nuts and those containing just chocolate (the least desired Composition). Flavour is the second most important attribute prevailing bitter as preferred flavour. The results also shows that, although consumers prefer an organic chocolate this attribute does not have great weight in determining overall preference. A similar interpretation is applicable to the attribute origin of chocolate. The aforementioned adds a nuance to the expressed about the fulfilment of the hypotheses raised. In this point, it is important to analyse two statistics that provide measures of the correlation between the observed and estimated preferences: Pearson's R (0.896)\*\*\* and Kendall's tau (0.850)\*\*\*.

It is also interesting the Kendall's tau for the four-holdout profiles (0.670)\*\*\* that were rated by the subjects, but not used by the conjoint procedure for estimating utilities. Correlations between the observed and predicted rank orders for these profiles were computes as a check on the validity of the utilities. Although holdouts will always produce lower correlation coefficients, in many cases, the correlations for the holdout profiles may give a better indication of the fit of the model. That is because in this kind of analyses, the number of parameters is close to the number of profiles rated, which will artificially inflate the correlation between observed and estimated scores.



Using the power of conjoint analysis to predict preference for product profiles that were not rated by the subjects, two simulation cases were added to the plan file for the chocolate study. Note that the difference between two cases lies in attributes Organic and Origin than are the one of our interest. Figure 1 shows the predicted probabilities of choosing each of the simulation cases as the most preferred one, under three different probability-of-choice models.

Across the 1,600 subjects in this study, all three models indicated that simulation profile 1 would be preferred. This result makes clear that, maintaining the attributes Composition, Flavour, Packing and Brand image at their preferred levels, the attributes Origin and Organic are determinants in the preference of the chocolate consumers in the analyzed context. Based on preferred choice derived from the conjoint analysis four clusters of respondents were identified. Based on preferred choice derived from the conjoint analysis four clusters were identified (Table 6). The socio – demographic variable that predict better the belonging of a respondent to one cluster or another are gender (100%), education (96%), preference (84%) and age (54%).

Table 6.

Socio - demographic characteristics of the consumer segments

Figure 1. Simulation cases and preferences

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Size	32.0%	24.5%	24.0%	19.5%
Gender	Female (96.3%)	Female (69.8%)	Male (100%)	Male (77.2%)
Education	Secondary (36.1%)	Secondary (83.9%)	Secondary (44.5%)	Primary (97.4%)
Preference	Card ID 14 (48.0%)	Card ID 4 (92.1%)	Card ID 14 (36.7%)	Card ID 4 (44.6%)
Age	30 – 40 (36.7%)	41 – 50 (43.5%)	30 – 40 (45.1%)	+60 (53.5%)

The highest number of consumers (32% of the total sample) belongs to the first cluster. Consumers in this group are mainly young adult female, with secondary degree, with preference for organic with local origin and bitter pure chocolate in plastic cover and with predilection by recognized local brand image.



The second cluster, which accounts for 24.5% of the sample, is characterized by a high percentage of median adult women mainly with secondary degree with preference for organic with local origin and sweet milky chocolate in plastic cover and without predilection by recognized brand image.

The third cluster, accounting for 24.0% of the sample classified young adult man with secondary degree with preference for organic with local origin and bitter pure chocolate in plastic cover and with predilection by recognized local brand image.

The fourth cluster accounts for only 19.5% of the sample and consists mainly of mature man with primary education with preference for organic with local origin and sweet milky chocolate in plastic cover and without predilection by recognized brand image.

The results of this study suggest that consumer preferences for chocolate is more influenced by Composition and Flavour of the product than the Packing employed and the Organic precedence and elaboration. Composition and Packing positively influenced preferences, and Flavour and Organic precedence negatively affect preferences. The findings advises that there will be a potential market for chocolate combined with nuts, bitter, organic, locally sourced, and packaged with plastic cover with a recognized brand image. Therefore, producer and marketers should focus on chocolate with such characteristics.

The results also provide knowledge on consumer segments that could be useful for marketing strategies. A four-cluster solution based on the socio – demographics characteristic and the preference for ideal product explaining consumer orientation toward chocolate consumption. Valuable practical repercussions for producers and marketers can be drawn from our findings that, as we point out before, need to adopt strategies aimed at strengthening the consumption of the local chocolate. The four segments identified could be consider to face the diversity of consumers' attitudes toward the more valuable attributes of local chocolate.

## **5. Conclusions and implications**

The study of consumer preferences have been received great attention in the literature. Several studies have been dedicated on consumer preferences related to chocolate (Dian & Dedy, 2015; Erazo Castro & García Chang, 2016; Martín Cerdeño, 2007; Torres-Moreno et al., 2012). Nevertheless, not many studies have investigated chocolate preference consumption of Ecuadorian consumers taking into account attributes that validates popular opinions about it. In most of the cases, those studies are not able to show a market segmentation analysis and use basic statistics to reach their results.

The study has some limitations. Generally choice studies assume that preferences are stable, and this is not an exception, but we recognize that consumer preferences for different attributes in both functional and innovative products vary significantly over time (Liao et al., 2017; Meeran et al., 2017; Wang et al., 2017). Is true that the chocolate production at Ecuador is changing and new flavours in combination with many other attributes are entering the market.

The present study does not try to exhaust the subject and recognizes that the attributes identified here can be susceptible to be avoided or displaced by others depending on the supply. The assumption of static consumer preference for different attributes can lead to inaccurate market share forecast and lack of perception of the need improvement (Meeran et al., 2017). It is recommended to replicate the study over time and to appreciate the changes in the preferences of the consumers of chocolate in Ecuador.

Our study contributes to the empirical literature on chocolate by investigating consumer preferences at the Ecuadorian context (Alianza para el Emprendimiento e Innovación, 2014; Andrade & Flores, 2008; Dian & Dedy, 2015; Dogan, Aslan, Aktar, & Goksel Sarac, 2016; Efraim et al., 2013; Harwood, Loquasto, Roberts, Ziegler, & Hayes, 2013; Torres-Moreno et al., 2012). The obtained results contribute to the comprehension of Ecuadorian consumers' general perceptions of chocolate consumption and the attributes that influence their purchasing decision.

With the findings obtained, it is possible to guide the marketing activity in terms of market segments and the relevant attributes for them. In particular, the findings found could be relevant for entrepreneurs. The results provide an orientation of where to focus the marketing efforts and insert more correctly in the market. It is recommended to extend the research to

other provinces of Ecuador. This would allow to create a more accurate knowledge about the consumption of chocolate and how to market it both inside and outside the country.

When identifying attributes to study, is usually assume that consumers will use all of the attributes when facing product evaluation tasks (Maldonado et al., 2017). However, we admit that some of these attributes may be ignore by consumer when they are choosing their preferred option. The final sample was not a perfectly representative of the Ecuadorian population but this was expected given that the study focused only at one city of the country.

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