

Consumption of chicken meat in Sao Paulo: market segmentation and strategies

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Abstract

The food industry depends on the identification and measurement of the consumer needs to create and sustain competitive advantage, using it to improve the quality of its products and services as well as to develop innovative marketing strategies. Thus, studies that explain consumer behavior are important to help building strategies and tactics that enhance the competitiveness of the productive chain of all kinds of food. By shopping, consumers transmit, upstream of the supply chain, information on the attributes they want in a product category. That way, this work aims to study the consumer behavior of chicken meat in São Paulo, in order to generate information that segment this market and support marketing strategies in its productive sector. Thus, it was proposed a specific theoretical and analytical model for the consumption of meat products. Based on this theoretical framework, it was conducted a survey with 400 individuals in São Paulo. Through multivariate statistical analysis, the collected information allowed consumers to be grouped into five groups according to their explanatory variables of demand of chicken meat, and relations were established between socioeconomic variables of individuals and their preference for attributes. The results provided information to market segmentation and awareness of different consumer groups, which can be useful for companies in the production of chicken meat sector.

Keywords: *Consumer behavior, Strategic marketing, Chicken meat, Market segmentation.*

JEL: *D12*

1. Introduction and justificative

Generate and sustain competitive advantages are key goals for the survival of producers and processors of meat. Differentiate products, reduce costs, develop innovative marketing strategies and think new business models are among the main challenges to be faced and strategies to be followed to achieve these goals. Consumer behavior studies can equip the companies with vital information for right strategic decisions regarding making. Identifying the implicit and explicit needs of a given consumer market and translating this information into attributes that improve the quality of products and services are the major objectives of these studies. That said, the determination of the reactions of consumers across the products and services in a large scale can provide evidence to better serve the market.

Besides playing an important role in the food culture of the Brazilian consumer, the chicken meat agribusiness is quite relevant to the national economy. In 2014, according to USDA (2015), Brazil was the second largest producer of chicken meat in the world, behind the United States. From the over 12 million tons produced, 72% is consumed by the domestic market. Chicken meat is the meat most consumed in the country, registering annual *per capita* consumption of 43.9 kilograms in 2010 (MAPA, 2015). In twenty years - between 1984 and 2014 - chicken meat consumption has grown 846% in Brazil, against 277% for pork and 246% for beef. Given the expansion of consumption, studies exploring measures to better use of the potential market of this product become more interesting.

The increased consumption of higher value-added foods – made possible by the increased Brazilian's real income - and the uncertainties that usually involve and affect the export of meats, promote an undisputed relevance to the development of the internal market of meat in general. Developing a dynamic and robust domestic demand increases the sector's shield to the vicissitudes of the international market. However, this can only be achieved by consumer behavior analysis, leading companies to develop and place on the market products and services that reflect the needs and expectations of consumers.

Studies on the Brazilian consumer behavior of chicken meat are scarce in the academic literature. On the other hand, there is a demand by its producers and processors for structured analysis and systematic information about the habits and needs of the consumers of their products. The identification and analysis of meat attributes considered important by consumers when making purchasing decisions may favor the formulation and implementation of effective strategies for production and presentation of the product. In this sense, market

research is able to answer questions about customer's wishes and desires, as also as the view that the consumer has of companies and products (Raimundo, 2013).

2. Purpose

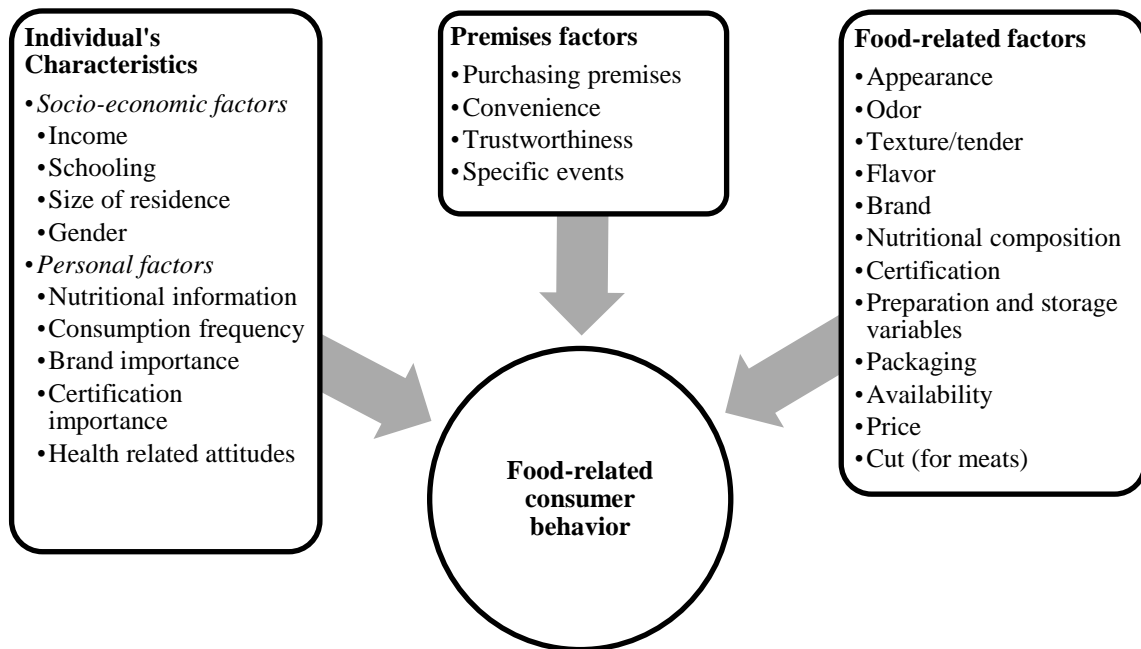
This work aims to study the consumer behavior of chicken meat in São Paulo, in order to generate information to segment this market and support marketing strategies for companies in the sector.

From a conceptual model specific to the consumption of meat products, the survey seek to identify and assess the final consumer attitudes toward quality attributes of chicken meat and its relationship with the productive trends upstream of this agro-industrial chain.

3. Construction of the theoretical and analytical model for consumption of meat products

The theoretical review of several models of food consumption behavior (Amerine, Pangborn, & Roessler, 1965; Cardello, 1999; Conner, 1999; Fischer, 2005; Furst, Connors, Bisogni, Sobal, & Falk, 1996; Gains, 1999; Grunert, Brunso, & Bisp, 1993; Khan, 1981; Oliveira & Thébaud-Mony, 1997; Randall & Sanjur, 1981; Shepherd, 1985) enabled constructing a model to represent consumer behavior of foods that takes into account the main consumption determinants related to individual characteristics, to the environment where this food is purchased and consumed and the intrinsic characteristics of the food. Figure 1 shows this model and lists the main variables considered in the current food consumer behavior models mentioned above.

Figure 1: Determinants of food-related consumer behavior.



Source: Prepared by the authors.

This model was specifically adapted to include specific variables to explain and describe meat consumption, such as “type of cuts” and “texture”, which may not explain the consumption of other food products.

4. The consumption of chicken meat in Brazil

Brazil, even being considered a developing country, holds a per capita consumption of meat at similar levels to those found in wealthier nations, i.e. more than 80 kilograms per inhabitant per year (Carvalho & Bacchi, 2007). Until the 70's, beef accounted for over 50% of the total meat consumed by Brazilians, ahead of pork and chicken, which occupied respectively the second and third places. Beef has always been preferred by Brazilians, however, from the 80's on, with the spread of the concerns about health and its direct relationship to food, there was significant increase in the consumption of white meats. Between 1984 and 2014, from all the meat consumed in the country, the meat which consumption increased more was the chicken's, passing from one million tons to 9.1 million tons in the period, an increase of 846% (USDA, 2015). The annual consumption per capita was 43.9 kg in 2010 (MAPA, 2015).

Francisco *et al.* (2007) observed that the consumption of chicken parts is bigger than the consumption of the whole chicken. That happens because the parts are easier to prepare, and that relates to social factors such as the decrease the available time for meals preparation,

the growth of women's labor force, the decrease in family sizes, among others. The same applies to the growth of consumption of breaded chicken, and the combination of its practicality of preparation, individual packaging and low cost, make them most consumed than the whole chicken. Processed chicken is the least consumed, what can be related to its high added value, which in most times make them more expensive than the fresh meat. Regarding the parts consumption, the preferred are thigh, drumstick and wing, especially without skin. The liver and the heart are still the less consumed.

By studying the final consumer of meat, Porto (2004) identified the majority of the population consumes chicken meat once or twice a week, which is mostly purchased in super and hypermarkets, and its selling price is considered fair for about 50% of respondents.

Francisco et al. (2007) inferred that the validity and the organoleptic characteristics, such as color, appearance and smell, are the most important factors when buying chicken meat, in detriment of brand, texture, price, among others, what highlights the importance of appropriate packaging and presentation to attract consumers. Nunes & Castro (2007) observed that besides the presentation and product quality attributes, the price also shows determinant upon purchase, and that the majority of consumers are satisfied with the price they pay for chicken meat.

5. Methods

The overall sample consists of the meat consumers responsible for the decision to purchase the product and which reside in the city of São Paulo. The stratified random sample included 400 consumers, representing a sampling error of 0.05 and 95% confidence, as proposed by Mattar (2008, p. 162). The strata were determined by income and gender of respondents, respecting the distribution of the local population.

The survey instrument was based on the meat consumption model created from the literature review (see Figure 1). It was used a structured questionnaire of closed questions with multiple answers, divided into five parts: filter question, socioeconomic profile characterization, personal factors, food-related factors and environment characterization. Data collection took place in São Paulo, during the months of September, October and November of 2012, made by personal interviews in which consumers were approached in crowded public places, such as squares, parks, bus stations and tourist spots.

The data were analyzed using the SPSS 19 statistics software package. First, a Univariate Analysis (descriptive statistics) was performed, followed by the Factor and Cluster

Multivariate Analysis. These allowed grouping the similar variables and investigating the dependence between variables based on the sample data.

6. Results

413 people were interviewed in São Paulo. From them, 13 declared not being consumers of meat products, what corresponds to 3.15% of respondents. The other 400 respondents comprised the sample of effective consumers, including 209 women and 191 men.

Most respondents declared to consume chicken meat once or twice a week, just as observed Porto (2004). Among those who declared a consumption of three or more times a week, women accounted for 60% of the total, as shown in Table 1.

Table 1. Frequency of chicken meat consumption by gender.

% Line		Never	1 time a month or less	2 or 3 times a month	1 or 2 times a week	3 or more times a week	Total
% Column							
Women		0%	2%	11%	49%	39%	100%
		0%	44%	49%	49%	60%	52%
Men		1%	3%	12%	56%	29%	100%
		100%	56%	51%	51%	40%	48%
Total		0%	2%	11%	52%	34%	100%
		100%	100%	100%	100%	100%	100%

Source: Survey data, 2012.

Most respondents declared to prefer buying the chicken cuts rather than the whole chicken, just as observed Francisco et al. (2007). Chicken meat products are mostly purchased by women, which may be related to the low presence of fat in these products, while the whole chicken is preferred by men. Regarding the income of consumers, it can be stated that the purchase of chicken cuts, such as wings, breast, legs, among others, is well distributed across all income ranges. The whole chicken is mostly bought by those who hold the lowest income of the sample. Of the respondents who reported an income above US\$ 2010,00, more than 95% buy chicken cuts instead of the whole chicken.

For 67% of the consumers, beef is the best substitute for chicken meat, while the opposite is also true (66%). The second alternative is fish (20%), followed by pork (7%). This reinforces the idea that if it is believed that consuming a certain food has beneficial effects, such as white meat, it is presumed that it might be purchased and this purchase is then repeated.

23 variables were considered for the formation of the factors that supported the determination segments of chicken meat consumers, as shown in Table 2.

Table 2. Variables for segmenting consumers.

Product Attributes	Place of purchase	Attributes of place of purchase
Expiration date Appearance Price Color Softness/texture Quality certificate Odor Flavor Packaging and presentation Brand	Butcher shop Supermarket Grocery store Meat boutique Other locations	Premise location Payment method Quality of products sold Service Hygiene of food premises Price Confidence in the manufacturer Variety of products sold

Source: Survey data, 2012.

These variables were reduced by eight common factors, which explain 64.63% of the total variability of the data. In order to group consumers according to their response pattern in relation to the factors raised by the Factor Analysis, we proceeded to the Cluster Analysis. By the method of Ward (partial semi-R-squared = 0.045), it was determined the creation of five clusters. Based on the non-hierarchical k-means, method individuals were distributed in five groups (45% Economic (1), 36% Conventional (2), 8% Demanding (3), 3.5% Moderated (4) and 7.5 % Well-informed (5)). Two outliers were removed to a better fit of the analysis.

Through variance analysis performed for each of the factors, it was observed that all of them have significant differences between clusters, indicating a clear separation between group behaviors. Table 3 shows the socioeconomic distribution of sample components (398), subdivided into the five clusters and the distributions related to personal factors and preferences regarding chicken meat.

Table 3. Descriptive Frequency of chicken clusters.

		1	2	3	4	5
		(179)	(144)	(31)	(14)	(30)
Age	18 to 20 years	5%	8%	7%	7%	0%
	21 to 30 years	26%	29%	42%	42%	23%
	31 to 40 years	34%	31%	13%	13%	17%
	41 to 50 years	20%	24%	16%	16%	23%
	51 to 60 years	13%	5%	23%	23%	27%
	Above 61 years	3%	4%	0%	0%	10%
Family income (month)	Under US\$ 212	16%	16%	0%	21%	0%
	US\$ 213 to US\$ 423	40%	43%	7%	57%	3%
	US\$ 424 to US\$ 637	18%	16%	16%	14%	17%
	US\$ 638 to US\$ 1061	16%	15%	29%	0%	7%
	US\$ 1061 to US\$ 7900	7%	8%	23%	0%	40%
	More than US\$ 7900	3%	1%	26%	7%	33%
Education	Didn't study	1%	1%	0%	0%	0%
	Incomplete elementary education	11%	11%	3%	14%	0%
	Elementary education	13%	14%	0%	29%	7%
	Incomplete high school	16%	16%	0%	21%	0%
	High school	32%	23%	19%	14%	0%
	Graduated	13%	15%	36%	7%	30%
	Incomplete college	12%	17%	26%	14%	17%
	Postgraduate studies	2%	3%	16%	0%	47%
Household size	One person	6%	10%	13%	7%	0%
	Two	22%	19%	23%	14%	17%
	Three	41%	32%	19%	50%	30%
	Four	22%	33%	32%	21%	40%
	Five or more	8%	5%	13%	7%	13%
Consumption frequency	Never	1%	0%	13%	0%	0%
	1 time per month or less	3%	0%	23%	7%	7%
	2 or 3 times per month	11%	14%	19%	0%	3%
	1 or 2 times a week	51%	61%	32%	79%	30%
	3 or more times a week	34%	25%	13%	14%	60%
Perceived impact of consumption on health	Very bad	1%	0%	0%	0%	0%
	Bad	2%	1%	3%	14%	7%
	Indifferent	10%	17%	13%	7%	20%
	Good	48%	39%	29%	43%	47%
	Very good	40%	43%	55%	36%	27%
Declared nutritional knowledge	Fully unaware	34%	24%	7%	36%	10%
	Partially unaware	16%	22%	13%	29%	7%
	Not aware or unaware	26%	25%	23%	29%	10%
	Partially aware	19%	24%	52%	7%	57%
	Fully aware	6%	5%	7%	0%	17%
Most purchased cuts	Whole chicken	25%	31%	0%	43%	13%
	Chicken cuts	70%	60%	94%	57%	87%
	Chicken meat products	5%	8%	7%	0%	0%
	Others	0%	1%	0%	0%	0%

Source: Survey data, 2012.

Group 1 – Economic

In this group the consumption of chicken meat occurs mostly once or twice a week, and in 70% of cases the cuts are preferred over the whole chicken or chicken products. It

predominates the total ignorance of the nutritional composition of the product, however, it's the consumption is considered good for health by most respondents.

For these consumers the price the most important factor determining purchase as, in general, they don't hold high income levels. However, they care about the organoleptic characteristics of meat, validity, brand and quality certificate.

The Economic consumers prefer to buy chicken meat on butcher shops instead of other places (like supermarkets), and these are chosen regarding the quality of the products and the hygiene of the place. The point of sale's location and the service provided is not decisive for consumer's choice, and the same goes for the variety of products and the trust on the manufacturer.

For raising awareness among these consumers and influence their consumption, one must invest in improvements in features that stimulate their senses (packaging, texture, odor, color) and especially in sales promotions.

Group 2 – Conventional

Most of these individuals consume chicken meat once or twice a week, and in 60% of cases the cuts are preferred over the whole chicken. It predominates an average knowledge on the nutritional composition of the product, and its consumption's impact on health is considered very good by most respondents.

Conventional consumers are influenced by price thanks to their relatively low purchasing power. However they do not value the organoleptic characteristics of the product, brand, validity, certification or appearance as determinants for purchase. About the purchasing point, they value a facilitated payment, the confidence in the manufacturer, the product's variety offered, the location and the service. They prefer to buy in supermarkets instead of butchers, but also frequent grocery stores or boutiques less frequently.

These consumers hold a traditional purchase pattern of, in other words, they attend establishments that they're used and there's a degree of trust involved on the buying. Thus, to meet their needs, tactics such as sales promotions or as increasing the variety of the offered products can be relevant.

Group 3 – Demanding

This group consumes chicken meat mostly three or more times a week, and in 93% of occasions the cuts are chosen over the whole chicken or chicken products. Most individuals

declare to have a good knowledge of nutritional composition of the product, considering its consumption good for health.

They are in general the most careful consumers regarding meat organoleptic characteristics, appearance, brand, validity and certification. In contrast, price doesn't influence their purchase, mainly because they're in general more affluent than the other groups.

These consumers buy in supermarkets more often, avoiding butcher shops, grocery stores and boutiques. The choice of the purchasing point is done mainly considering the point localization and service, but quality of products sold and hygiene are seen in a lesser degree of importance. They care even less with the confidence on the manufacturer and with the variety of offered products.

Demanding consumers are very concerned about the appearance of the products they buy, thus, they can be widely influenced by investments in new packaging, certification labels of quality, organic farming and animal welfare, as well as certifications of good practices in the establishments.

Group 4 – Moderated

In this group, chicken is mostly consumed once or twice a week, and its consumption is considered good for health. It predominates total ignorance about the nutritional composition of the product. Between all, this group is the one that most consume the whole chicken, probably in reason of the price which is often more attractive than the cuts.

These individuals are primarily affected by the price of the products, as they have the lowest purchasing power in relation to other groups. Intrinsic and extrinsic characteristics of the products do not influence their purchases, made in places that provide facilitated payment. For them, the confidence on the seller, the variety of offered products, the quality or the hygiene does not determine the purchase.

Moderated consumers prefer to purchase chicken in butchers, avoiding supermarkets, but they are also attend groceries and other places like market-places. To choose the purchasing point, they consider its localization and service.

To sensitize them, strategies as sales promotions can succeed.

Group 5 – Well-informed

In this group it's observed a consumption frequency of mostly three or more times a week, and in 87% of cases the cuts are preferred over whole chicken. Most of these

consumers claim themselves as familiar with the nutritional composition of the product and considers their consumption good for health.

Well-informed consumers hold, in general, high levels of education and income. As a result, as well as the Demanding group, they're not influenced by the prices of products. Sometimes they attach importance to organoleptic characteristics, validity, and certification labels, but do that in a lesser extent. The biggest difference between these groups is that the Well-informed consumers look for purchasing places that they trust and that offer greater variety and quality, at the expense of better localization or better service.

These consumers choose to purchase mainly in boutiques and grocery stores, but also do it in butcher shops and in supermarkets when convenient.

Well-informed consumers may show interest in advances in nutrition, health, food safety, packaging and convenience, so the investment in these activities can positively influence their consumption.

7. Conclusions

This work aimed to study the consumer behavior of chicken meat in São Paulo, the largest consumption center in Brazil, in order to obtain information that supports marketing strategies for companies in the productive sector.

The descriptive sample analysis indicated that in São Paulo the meat preferred by most respondents is beef (52%), followed by chicken (35%), with pork in third place (13%). This result is in accordance with the findings of (Bezerra et al., 2007; Buso, 2000; Francisco et al., 2007; Mazzuchetti & Batalha, 2004; Porto, 2004; Velho, Barcellos, Lengler, Elias, & Oliveira, 2009).

Overall, chicken meat is mostly consumed once or twice a week. For all income groups above US\$ 213/month, over 90% of individuals consume the product one, two, three or more times in the one week. Most consumption above three times a week is declared by women.

The chicken meat consumers were divided into five different groups: 45% Economic, 36% Conventional, 8% Demanding 3.5% Moderated and 7.5% Well-informed.

The study contributed with an overview of the behavior of consumers of chicken meat in São Paulo, where could be characterized different consumption profiles. Knowing these profiles becomes important since the consumer is the financial maintainer and directing agent trends of the entire production chain.

Production and retail companies in the sector can use the resulting information to better knowledge of consumers profile and their priorities when choosing food, as well as their value perception, vital factors in establishing chicken meat production policies and marketing.

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