

COMO MELHORAR A PERCEPÇÃO DOS CONSUMIDORES SOBRE A QUALIDADE DA COMIDA DE RUA?

HOW TO IMPROVE CONSUMER'S PERCEPTION OF STREET FOOD QUALITY ?

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Resumo

Em períodos de contingência econômica, impondo às famílias a perda de suas fontes de renda, ou mesmo devido a movimentos migratórios e imigratórios, o comércio de comida de rua é uma das alternativas para a recomposição da renda familiar. Nesse contexto, o comércio de comida de rua se destaca e cresce em importância por seus aspectos econômicos, sociais e culturais.

A maioria das pesquisas sobre esse tema trata de aspectos relacionados a questões de saúde e poucas exploram questões sobre os fatores que influenciam a percepção do consumidor em relação à qualidade dos alimentos ingeridos, foco desse trabalho. Os dados foram coletados por meio de um questionário impresso aplicado a 253 transeuntes em várias áreas movimentadas da cidade de Diadema, Brasil, uma cidade com intensa atividade comercial de comida de rua. A análise estatística foi realizada por técnicas multivariadas para avaliar a percepção dos consumidores sobre a qualidade da comida de rua com base no milho e em seus subprodutos. Os resultados mostraram que o serviço influencia diretamente a percepção de qualidade. Além disso, foi possível verificar o efeito mediador da saudabilidade na relação entre limpeza e percepção de qualidade. Assim, o foco dos comerciantes de comida de rua deveria estar na limpeza e polidez dos atendentes. Ambos influenciam a percepção que o consumidor desenvolve sobre saudabilidade e qualidade.

Palavras-chave: Comida de rua; percepção de qualidade; comportamento de consumidor; efeito mediador.

Abstract

In periods of economic contingency, imposing to families the loss of their sources of income, or even because of migratory and immigration movements, the street food trade is one of the alternatives for the recomposition of family income. In this context, street food trade stands out and grows in importance for its economic, social and cultural aspects. Most research on this theme has aspects related to health issues and few of them explores questions about the factors that influence the perception of the consumer in relation to the quality of food eaten, which is the focus of this work. Data were collected through a printed questionnaire from 253 persons walking around several busy areas of Diadema city, Brazil, a city with intense street food trade activity. The statistical approach was performed by multivariate data methods to evaluate the consumers' perception of street food quality based on corn and by-products sold. Findings showed that service directly influences quality perception. Additionally, it was possible to verify the mediating effect of healthiness in the relation between cleanliness and quality perception. Therefore, the focus of street food traders should be on clerk

cleanliness and politeness. Both of them influence the perception that the consumer develops regarding healthiness and quality.

Keywords: Street food; quality perception; consumer behavior; mediation effects.

INTRODUCTION

In periods of economic contingency, imposing to families the loss of their conventional sources of income, or even because of migratory and immigration movements, as observed by (BASINSKI, 2014), street food trade is one of the alternatives for recomposition of family income. Whether for its economic, social and cultural importance or for public health implications, street food is a topic that has gained relevance in the literature (ALIMI, 2016; BASINSKI, 2014; FRANKLYN; BADRIE, 2015; GRUNERT, 2010; HENDERSON, 2010).

Street food is daily consumed by 2.5 billion people worldwide. In India, it is estimated that 2.5% of the population are considered street food vendors. In Latin America, more than 30% of household budgets in urban centers are spent on street food (BELLIA; PILATO; SÉRAPHIN, 2016). According to estimates by the Instituto Foodservice Brasil - IFB (Brazilian Foodservice Institute) (DENONE, 2017), the street food segment in Brazil had revenues of 14.6 billion Brazilian reais in 2016.

The spread and influence of street food trade in society have led to many studies on this theme, focusing on issues such as healthiness, public health implications, consumer profile, food preparation and storage conditions. Authors, in general, stress the poor hygiene conditions and show health problems (ALIMI, 2016; BENNY-OLLIVIERRA; BADRIE, 2006; BEZERRA; REIS; BASTOS, 2010; CHUNG; MYERS, 1999; EKANEM, 1998; FRANKLYN; BADRIE, 2015). However, few studies emphasize the consumer's point of view in evaluating products' quality.

Therefore, there is an important discussion regarding the perception of consumers about the practices that characterize this type of activity, either in terms of handling and preparation of food, or how the vendors approach the customers. It is important to recognize the dimension of this activity and its consequences considering perception of product quality, service, cleanliness and healthiness, and how these elements are considered in the contexts that intend to evaluate this kind of trade, raising the following

research problem: "What are the relationships between the factors that influence quality perception of foods sold in street markets? "

The objective of this paper is to evaluate the dynamics of relationships between perception of cleanliness regarding the point of sale, cleanliness and politeness of those who serve the public, healthiness and quality of the food sold on the streets. The next sections present the literature review on the subject, the methodology used, the discussion on the results, and the conclusion.

LITERATURE REVIEW

Street food trading is a form of manifestation of entrepreneurship in a scenario of economic crisis, with a high rate of unemployment and exclusion in the labor market (Singer, 2002). Due to the rapid growth, street food has become a significant part of the economy of most developing countries (ALIMI, 2016).

One of the reasons for this growth, according to Chung and Myers (1999), is the lower price of this type of food when compared to prices practiced by indoor restaurants. This factor is even more relevant for low-income consumers. For Loriato and Pelissari (2017), the service is a determining attribute for consumers in making purchasing decisions at street food kiosks. For the authors, consumers are becoming more interested in how they are served when acquiring a product or service, causing the increasing importance of service over other aspects of the trade such as price.

In addition to the price – usually affordable – street food has other aspects of attraction such as satisfaction. The products sold are, in general, accepted in people's daily lives. They are part of an environment of belonging, union, and identity related to the places where they are consumed (FONSECA et al., 2013).

Street food increasingly appears in the literature with articles on food production and storage conditions, consumer perception and health threats (TAROFDER et al., 2016). Dawson and Canet (1991) indicated the economic aspect of the subject, reporting that sales of street food in Malaysia employs more than 100,000 vendors and has an annual sales volume of 2 billion US dollars.

It is hard to identify the size of the street food trade in Brazil, as governmental agencies do not quantify its activities. However, the economic importance can be observed, for

example, by the number of individuals involved in this practice in the streets of São Paulo city (FONSECA et al., 2013). Nevertheless, the informal nature and the lack of official data about the size of the street food trade makes it a subject that deserves to be better explored (ALIMI, 2016).

For the development and perpetuation of this activity, it is crucial to understand the roles of entrepreneurs and consumers, as well as the consumers' behavior, which is a fundamental element in commercialization and necessary for the success and maintenance of the business (SANTOS et al., 2012).

For a long time, street food had a negative reputation in people's imagination. Homemade food would be linked to safety, hygiene, and good manners, while the opposite of these qualities would be expected from street food. This expectation may be because common sense links a negative image to the term "street", meaning it goes beyond the conventional standards of social acceptance, such as street dwellers and street children (PERTILE, 2013).

For Fontanillas, Cruz and Ferreira (2013), people expect good service, and this affects customer satisfaction and the success of the establishment. As for Schroeder et al. (2007), consumers consider hygiene and health risks as fundamental elements, while for Oliveira et al. (2008), neither vendors nor consumers take these elements under consideration when assessing food preferences.

Morano et al. (2018) proposed that street food trade has particular characteristics. The authors analyzed the influence of some factors in the quality perception of street food. They observed the influence of service and healthiness in food quality and verified that service and cleanliness are predecessors of healthiness.

Perception of quality is dependent on the factors that consumers use to perceive and evaluate a service or product (IBÁÑEZ CASANOVA, 2003; PIMENTA et al., 2011). Regarding food consumed away from home, the perception of quality generally results from the comparison between customer expectations and perceived performance (GRUNERT, 2010). Service, organization of the point of sale, cleanliness and safety to consume, among other aspects, are determinants of perceived quality of the food consumed away from home (TINOCO, M. A. RIBEIRO, 2008).

Related literature focuses primarily on the perception of food quality consumed in traditional trades such as bars and restaurants (SANTOS et al., 2012). Studies related

to street food are scarce and do not clearly determine the antecedents of perceived quality. However, Almeida et al. (2014) proposed that the factors which determine the perception of food quality consumed in traditional trades are also applicable to the perception of quality in the street food trade.

Good service is essential to the strength of the business. In addition, with adequate service, consumers are taken and make the business to be perpetuated (FONTANILLAS; CRUZ; FERREIRA, 2013; MORANO et al., 2018). Many customers can usually build loyalty and come back to the same place to buy when they develop a kind of trust with the vendor (RHEINLÄNDER et al., 2008).

The service involves how to handle food and manipulated money, as well as how to dress and behave politely with customers (ROSSI et al., 2012). Thus, the consumer can interfere into food handling practices using his/hers purchasing power when choosing what to eat and where to buy the food, avoiding the consequences of an unsafe product (CARDOSO; SANTOS; SILVA, 2009).

Providing good service impacts the expectation of product quality (FONTANILLAS; CRUZ; FERREIRA, 2013). Thus, as the quality of the services and products provided reflect the level of consumers' demand, it is essential to guide street food consumers to play a more active role in achieving and maintaining the quality of service delivered.

Studies have identified the conditions of the location where the service is made available as the most critical point for potential street food contamination (CORTESE et al., 2016). The perception of cleanliness considers the perspective of consumers regarding their sense of hygiene in both, the point of sale and surroundings. Thus, the cleanliness is seen as a relevant criterion for the purchase of street food and as a possible factor that may mitigate the risk of consuming food in the street (CARDOSO et al., 2008; SANTOS et al., 2012). In this sense, studies that relate cleanliness with quality demonstrate the importance of this perception in the understanding of consumers regarding food healthiness (MARTINS, 2006; SCHROEDER et al., 2007).

In economic terms, health is an invisible quality, meaning it cannot be accessed directly by consumers. On the other hand, it may be related to the quality of a product or service, quality that is objectively presented through some characteristic perceived by the consumer. In a more restricted sense to street food, quality is associated with the expected health benefit after consumption (GRUNERT, 2010).

The perception of healthiness in food consumption is unconsciously associated with disease prevention and health improvement (SCHNETTLER et al., 2015). Visual elements related to wellness can positively affect consumers' healthiness perception of products and stimulate purchasing process (CHRYSOCHOU; GRUNERT, 2014).

Healthiness of a product has been inversely associated with the risk of its ingestion (VIANA, 2013). The perceived risk in domestic environments is lower than that in street food trade. Thus, it is important to verify the risk conditions to reduce the incidence of food poisoning, which invariably reinforces the perception of healthiness (PARRY et al., 2004).

There are flaws in consumers' knowledge, attitude and food safety practices when buying and consuming food sold by street vendors. The main factors of consumption of these foods are accessibility, availability and convenience. Although most consumers had no confidence in the safety of food sold, this did not affect their preference for street foods (ASIEGBU; LEBELO; TABIT, 2016).

On the other hand, the purchase of healthier foods may be associated with contexts in countries where there are changes in lifestyles, where the consumption of street foods is also influenced by the search for healthier foods, since indoors, such as fast foods, selling healthy products is not considered a recurring practice (SCHNETTLER et al., 2015).

From the literature researched, there are few studies that relate the perception of healthiness with the perceived quality by the consumer. Those which do, and show that healthiness is related and seem to precede quality, do not consider such relationship in the presence of other variables (ASIEGBU; LEBELO; TABIT, 2016; CHRYSOCHOU; GRUNERT, 2014; GRUNERT, 2010; IBÁÑEZ CASANOVA, 2003; SANTOS et al., 2012; VIANA, 2013), which will be the reason for main attention of the present paper.

METHODOLOGY

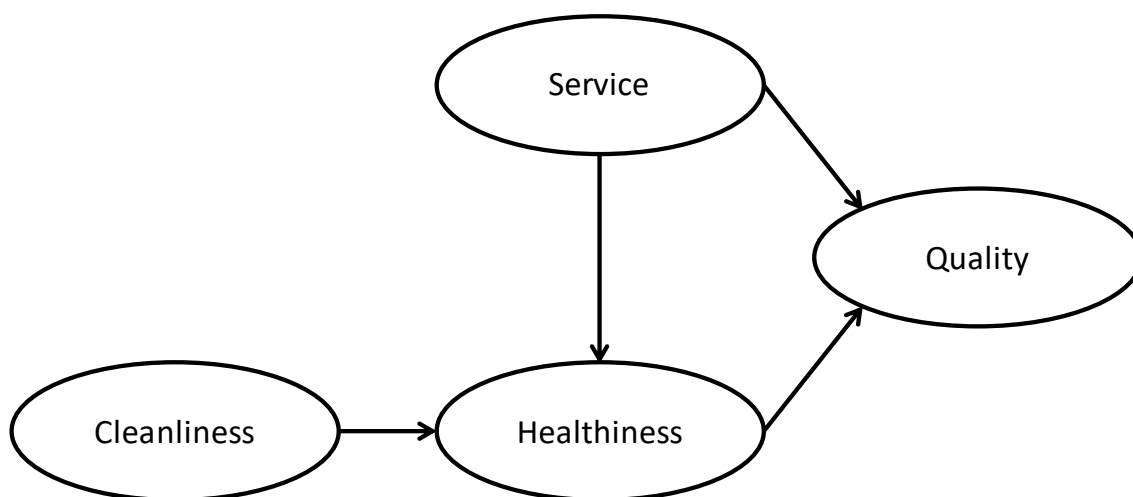
The quality of street food based on corn and by-products sold in Diadema city was evaluated using measurement scales from the literature (CARDOSO et al., 2008; FONTANILLAS; CRUZ; FERREIRA, 2013; GRUNERT, 2010; IBÁÑEZ CASANOVA, 2003; MORANO et al., 2018). Corn and by-product have a high consumption in the city

and can be considered good representatives of the street food consumed in the region as well as in several other Brazilian cities (IPEPS, 2016).

Data was collected through a printed questionnaire, applied by trained interviewers with people walking around several busy areas of Diadema city, a city with intense street food trade activity. The questionnaire presented 12 statements to be considered by the respondents in a Likert-type scale (1 = strongly disagree; 7 = strongly agree). The statements were designed to capture and evaluate respondents' opinions (DALMORO; VIEIRA, 2013) regarding the quality and healthiness of products made from corn and by-products, as well as service and cleanliness of the point of sale. Four questions were designed to characterize the profile of respondents related to gender,

Figure 1 shows the initial theoretical model proposed to study the dynamics of the relationships between the variables Quality, Healthiness, Service and Cleanliness, and achieve the objectives of this research.

Figure 1. Theoretical model



Source: Adapted from Morano et al. (2018)

In order to minimize common method bias (CASALÓ; FLAVIÁN; GUINALÍU, 2010; PODSAKOFF et al., 2000; PODSAKOFF; ORGAN, 1986), caused by the use of a single instrument for collection of information from the field, all of them gathered at the

same time, the following procedural remedies were carried out (PODSAKOFF et al., 2000; PODSAKOFF; ORGAN, 1986):

- a) Protection of the respondents' anonymity, reducing their apprehension during the information collection procedure.
- b) Assure respondents that there were no right or wrong answers and that they should answer the questions in the most honest way possible because the research was interested in their genuine opinion.

The quantitative method involved descriptive statistical analysis, exploratory and confirmatory factor analysis, and structural equation modeling. Analysis were performed using IBM SPSS Statistics® 20.0 and IBM SPSS Amos® 22.0 (HAIR et al., 2009; RIVERA et al., 2018).

RESULTS AND DISCUSSION

The research collected 253 valid answered questionnaires, a number higher than the minimum necessary (five respondents per statement) for adequate sample size (BENTLER; CHOU, 1987).

Among the respondents, there was a higher number of female respondents (56.1%). As for level of formal education, the majority completed elementary or high school. About 85% of respondents were residents of Diadema, and just over half of them work or study in the city. Table 1 shows the distribution of the respondents according to their profile.

Table 1 - Respondents profile

Residents in the city	Frequency	Percentage
Yes	217	85.8%
No	36	14.2%
Work/study in the city	Frequency	Percentage
Yes	146	57.7%
No	107	42.3%
Gender	Frequency	Percentage
Female	142	56.1%
Male	111	43.9%

Level of education	Frequency	Percentage
Elementary	89	35.2%
High-school	135	53.4%
Higher education	29	11.5%
Post degree	0	0.0%

Source: Elaborated by the authors

In exploratory factor analysis, the factor loading of each of the proposed statements was analyzed to verify the significance for a particular construct. According to Hair et al. (2009), factor loadings greater than 0.40 guarantees significance of samples greater than 200 records. All factor loadings found for the responses were higher than this minimum value, reinforcing that the sample size is suitable for the study. The results of factor analysis are presented in Table 2.

Variables resulting from the factor analysis presented adequate levels of reliability, with Cronbach's alphas higher than 0.70 (Hair et al., 2009).

Table 2 - Exploratory factor analysis

Construct	Variable	Item	Factor loading	Alpha
Quality	PQ1	Good quality products.	0.881	0.775
	PQ2	Ingredients come from reliable source.	0.784	
	PQ3	Products are hygienically prepared.	0.569	
Healthiness	PS1	Products sold are not harmful to health.	0.669	0.765
	PS2	Food sold does not cause illness.	0.701	
	PS3	Food sold does not make me ill.	0.850	
Cleanliness	LL1	Kiosks are clean and hygienic.	0.461	0.781
	LL2	The place where the kiosks are located are clean.	0.799	
	LL3	The kiosks' surroundings are appropriate to sell the products.	0.883	
Service	AA1	Vendors are kind and polite to clients. Vendors handle money and food	0.875	0.726
	AA2	adequately.	0.510	
	AA3	Vendors are clean and appropriately dressed to sell food.	0.552	

Source: Elaborated by the authors

Regarding the measure of sampling adequacy for factor analysis, KMO (Kaiser-Meyer-Olkin) test resulted in a value of 0.875, considered adequate. Also, the Bartlett sphericity test was significant (chi-square = 1349.146; df = 66; $p < 0.001$), indicating that the factor analysis is appropriate (HAIR et al., 2009).

As far as normality is concerned, studies show that even data without a normal distribution may be acceptable as long as the ordinal element used in the data collection is greater than or equal to five points and the frequency distribution approaches a normal curve, giving a continuous character for the variables, without great distortions in the adjustment (MARÔCO, 2014). Also, it is recommended that univariate kurtosis (Ku) and skewness (Sk) measures (from each statement) approach zero and are not higher, in magnitude, to 2 and 7, respectively (MARÔCO, 2014). The results of the univariate normality tests indicated that none of the variables presented $|Sk| > 2$ and $|Ku| > 7$, so there is no violation of normality.

To evaluate the sensitivity of data collection toward the common method variance (PODSAKOFF; ORGAN, 1986), Harman's single-factor test was carried out, to verify if a single latent factor would be responsible for all the statements used. The test shows whether the variance generated by the common method, derived from systematic error, represents a considerable risk to the analytical procedures developed by Podsakoff and Organ (1986). The results show that there is no risk of common method variance.

Completely, data obtained were analyzed using confirmatory factor analysis and structural equation modeling. The measurement model presented good indexes of quality adjustment (chi-square = 109.266₍₄₄₎, $p < 0.001$, GFI = 0.935, NFI = 0.921, IFI = 0.951, TLI = 0.925, CFI = 0.950, RMSEA = 0.077), which indicates the adequacy of the data referring to corn and by-products.

Theoretical model was tested to verify the causal relationships between the variables. It had good indexes of quality adjustment (chi-square = 110.295₍₄₅₎, $p < 0.001$, GFI = 0.935, NFI = 0.920, IFI = 0.951, TLI = 0.927, CFI = 0.950, RMSEA = 0.076), which indicates the adequacy of data regarding corn and by-products.

Path coefficients (β) presented in Table 3 show that the relationships between Service and Quality, between Cleanliness and Healthiness, and between Healthiness and

Quality are significant. However, no significance was found for the relationship between Service and Healthiness.

Table 3 - Path coefficients (β) and determination coefficients (R^2) - Structural model

	Coefficients (β)	Coefficient of determination (R^2)
Service → Quality	0.371***	
Service → Healthiness	-0.169	
Cleanliness → Healthiness	0.986***	
Healthiness → Quality	0.553***	
Healthiness		0.713
Quality		0.722

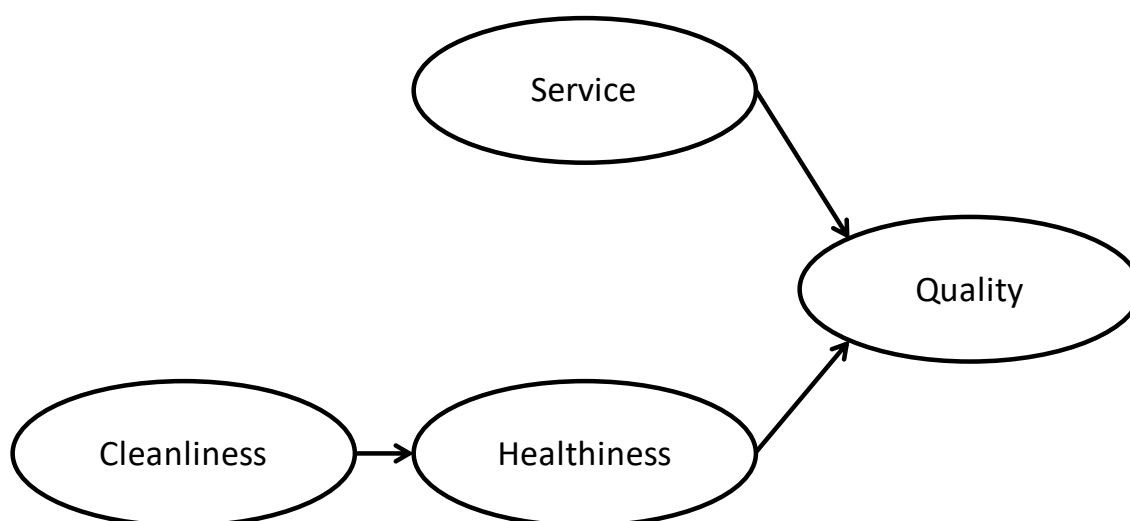
*** $p < 0,001$

Source: Elaborated by the authors

The two model-coefficients of determination (R^2) were high enough to show the intensity of the relation between the variables, that is, Quality is explained in more than 70% by Service and the Healthiness, and Cleanliness explains Healthiness by more than 70% too.

From the results observed it was elaborated model 1 (figure 2), presenting only the significant relationships verified, in comparison to the theoretical initial model.

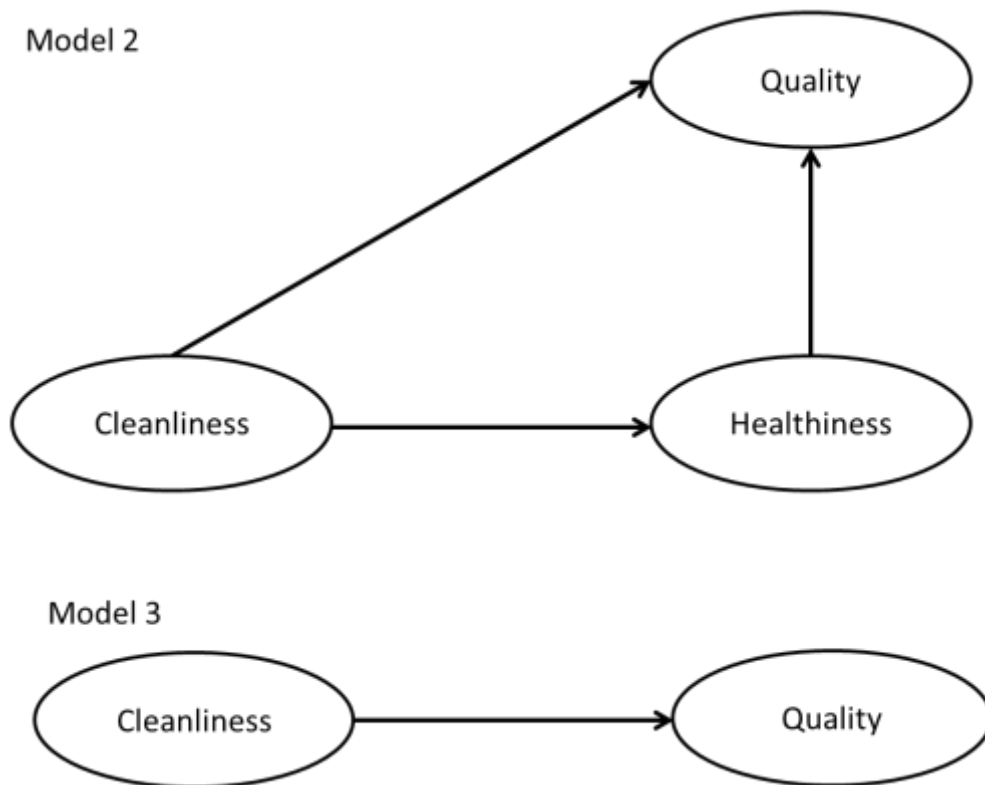
Figure 2. Model 1



Source: Elaborated by the authors

Given that the relationship between Cleanliness and Quality may be mediated by Healthiness, additional analysis was required to test this mediation effect (BOURANTA; PSOMAS; VOUZAS, 2018; TAROFDER et al., 2016). For Vieira (2009), a mediator variable, when present in a model, reduces the magnitude of the direct relationship between an antecedent variable and a consequent one. Therefore, a mediator variable influences the relation between antecedent and consequent variables, so that its insertion in the model reduces or even neutralizes the impact of the direct relation between them. Thus, to perform the mediation test, models 2 and 3 were elaborated according to figure 3.

Figure 3. Models 2 and 3



Source: Elaborated by the authors

The two models supported the mediator aspect of Healthiness according to the step-by-step procedure proposed by Baron and Kenny (1986). For the procedure, the following conditions are required:

- The antecedent construct affects significantly the mediator construct: in model 2, the regression coefficient from Cleanliness to Healthiness is equal to 0.819 and significant ($p < 0.001$);
- The antecedent construct significantly affects the consequent construct in the absence of the mediator construct: in model 3, the regression coefficient from Cleanliness to Quality, in the absence of Healthiness, is equal to 0.703 and significant ($p < 0.001$);
- The mediator construct has a significant effect on the consequent construct: in model 2, the regression coefficient from Healthiness to Quality equals 0.417 and significant ($p < 0.001$);
- The effect of the antecedent over the consequent construct weakens when there is a mediator construct: in model 2, the regression coefficient from Cleanliness to Quality, when there is the mediation of Healthiness, is equal to 0.292, less than 0.703, and not significant ($p > 0.05$);

In this way, model 1 meets all mediation assumptions (Iacobucci et al., 2007; Baron & Kenny 1986), showing that the effect of Cleanliness on Quality is stronger when it is made through Healthiness than when it acts directly. Thus, model 1 is the appropriate model to demonstrate the relations between the variables studied in this research.

In general, the model obtained proved to be valid for corn and by-products sold in the streets of Diadema city. The only difference between theoretical and obtained models is the direct relationship between service and healthiness perceptions observed. Service directly influences quality perception and does not influence healthiness.

CONCLUSION

This study aimed to evaluate consumers' perception about the quality of street food based on corn and by-products, that are sold in Diadema city, Brazil. From the results obtained a model was conceived that shows the factors that influence the consumer's perception regarding the quality of the street food. Additionally, the mediating role of

Healthiness was verified in the relationship between the Cleanliness and Quality variables.

Many by-products of corn are not prepared at the time of purchase. They are previously prepared and packaged products – such as cakes, bread, *curau*, *pamonha* – that can be bought and consumed quickly. Moreover, since the products are ready and packaged for sale, they do not raise the concern, from consumers or vendors, regarding special care of hygiene and cleanliness. These products do not promote, in general, opportunities of greater interaction between vendors and consumers, influencing the perception related to service. This characteristic possibly explains the difference found between the initial theoretical model, which considered products prepared at the time of purchase, and the conceived one, regarding the influence from service to healthiness.

The paper shows that street food vendors should focus their efforts on personal cleanliness and politeness, both linked to the service factor in the research. These characteristics give to the consumers the perception that the products are healthy, since such items are healthy-associated by customers and linked to the quality of the product sold. In a kind of mass-marketed trade where everyone is seen as equal, those who focus on what achieve consumers the most will surely be seen as different and better.

Besides that, the importance of cleanliness in this context is highlighted since it directly influences the perception of healthiness and, by mediation of this, influences the perception of quality of street food.

Future research, involving other types of street food in other locations, can contribute to the refinement of the developed models, broadening the discussions and strengthening the theory around this theme.

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