

Decision Making and Regret in Food Consumption in Fast-Food Chains

Tomada de Decisão e Arrependimento no Consumo de Alimentos em Cadeias de Fast-food

La Toma de Decisiones y el Arrepentimiento en el Consumo de Alimentos en las Cadenas de Comida Rápida

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Abstract

The article reports the results of a study that aimed to understand the relationship between cognitive and affective aspects in the post-purchase period and to identify which attributes are capable of reducing consumer regret. This research used a quantitative approach based on the application of a questionnaire composed of the regret measurement scale proposed by Nicolao and Rossi (2003) and the identification of decision-making attributes inspired by the work of Loriato (2015). In all, 657 questionnaires were obtained. The data were analyzed by means of Regression Analysis. At the time of pre-purchase, consumers tend to evaluate the smell, look/appearance, good service, staff appearance and hygiene, location, temperature, taste, and physical structure of the place. The use of such attributes is relevant in almost 80% of the cases. After consumption, it is common for the feeling of regret to appear, reaching an overall average of almost 50% of the points, which is quite relevant in a food scenario. The article contributes to advancing a deeper understanding of the issues of regret when assessed in the context of fast-food consumption. This is relevant to the literature related to consumer decision processes, but also to the field of consumption and marketing in general.

Keywords: decision-making, regret, food consumption, fast-food.

Resumo

O artigo relata os resultados de uma pesquisa cujo objetivo foi compreender a relação dos aspectos cognitivos e afetivos no pós-compra e identificar quais atributos são capazes de reduzir o arrependimento do consumidor. Esta pesquisa utilizou uma abordagem quantitativa a partir da aplicação de um questionário composto pela escala de mensuração de arrependimento proposta por Nicolao e Rossi (2003) e pela identificação de atributos decisórios inspirada no trabalho de Loriato (2015). Foram obtidos 657 questionários, e os dados foram analisados por meio de Análise de Regressão. Constatou-se, então, que, no momento da pré-compra, os consumidores tendem a avaliar o cheiro, o visual/aparência, o bom atendimento, a aparência e higiene dos funcionários, a localização, a temperatura, o sabor e a estrutura física do local. A utilização de tais atributos é relevante em quase 80% dos casos, e, após o consumo, é comum o aparecimento do sentimento de arrependimento, atingindo uma média geral de quase 50% dos pontos, o que é bastante relevante em um cenário alimentar. O artigo contribui para o avanço de uma compreensão mais profunda das questões do arrependimento quando avaliadas no contexto do consumo de fast-food. Conclui-se então, que esse fato é relevante para a literatura relacionada com os processos de decisão do consumidor, mas também para o campo do consumo e marketing em geral.

Palavras-chave: tomada de decisão, arrependimento, consumo alimentar, fast-food.

Resumen

El artículo presenta los resultados de un estudio cuyo objetivo era comprender la relación entre los aspectos cognitivos y afectivos en el período posterior a la compra e identificar qué atributos son capaces de reducir el arrepentimiento del consumidor. Esta investigación utilizó un enfoque cuantitativo basado en la aplicación de un cuestionario que comprende la escala de medición del arrepentimiento propuesta por Nicolao y Rossi (2003) y la identificación de atributos de decisión inspirados en el trabajo de Loriato (2015). Se obtuvieron 657 cuestionarios. Los datos se analizaron mediante análisis de regresión. En el momento de la pre-compra, los consumidores tienden a evaluar el olor, el aspecto/apariencia, el buen servicio, la apariencia e higiene del personal, la ubicación, la temperatura, el sabor y la estructura física del lugar. El uso de estos atributos es relevante en casi el 80% de los casos. Tras el consumo, la sensación de arrepentimiento es común, alcanzando una media global de casi el 50% de los puntos, lo que es bastante relevante en un escenario alimentario. El artículo contribuye a avanzar en una comprensión más profunda de las cuestiones de arrepentimiento cuando se evalúan en el contexto del consumo de comida rápida. Esto es relevante para la literatura relacionada con los procesos de toma de decisiones del consumidor, pero también para el campo del consumo y marketing en general.

Palabras clave: toma de decisiones, arrepentimiento, consumo de alimentos, comida rápida.

The habit of eating out of home has been an increasingly present option in people's lives. The main reasons for this fact is the lack of time to prepare food and the exhausting routine of daily chores (Amaro, 2018). Thus, it is possible to observe the emergence of several options for consumption outside the home, purchase of ready meals or the delivery of meals through intermediary platforms such as Ifood, Uber Eats and Rappi (Amaro, 2018). According to the Brazil Food Trends 2020 survey conducted by the Federation of Industries of the State of São Paulo (FIESP, 2020), 19% of Brazilians prefer to consume in fast-food chains (19%).

The abundance of choice options for consumption has contributed to the complexity of the consumer's decisionmaking process. In the decision-making process, consumers bring to the surface their styles, their desires and, included to this, the rational awareness about the attributes that will take into consideration when making a decision about what to consume (Nicolao, 2002).

However, one cannot think that only the rational aspects are present at the moment of decision making, which leads Steiner et al. (2005) to mention that decision making is formed by affective and cognitive aspects.

The researches that approach the emotional aspect during the decision making process are focused on issues such as the search for information, evaluation and choice of alternatives in the pre-purchase moment. In the post-purchase moment, the focus is mainly on consumer satisfaction (Steiner et al., 2005). However, when consumers choose to make a consumption decision, they are seeking satisfaction by choosing an option that will not cause them future negative emotions (Inman & Zeelennberg, 2002). Thus, the post-purchase evaluation process needs explanations that go beyond satisfaction evaluation (Nicolao & Rossi, 2003). That is, what seems to be important is related to the idea that the influence of anticipated emotions on consumer decision has raised interest by consumer researchers (Bagozzi et al., 2016), however, there is still a lack of further progress in one of the decisions to which the consumer is averse: regret.

Bringing the discussion to the context of fast-food consumption, it can be said that, currently, most individuals suffer with the pressure and the loaded routine and, therefore, opting for fast foods has become common due to practicality and speed (Costa & Ferreira, 2009). Thus, the fast-food industry stands out for being a model adapted for larger cities and for presenting a different way of selling food, when compared to the traditional food trade (Lima, 2011; Messias et al., 2007).

According to Messias et al. (2007), the fast-food model consists of a strict standardization of operational procedures, working with lower sales prices, higher sales volume at lower profit margins, which reveals a commercial appeal to the triad: efficiency, quality and price. The fast-food industry, as any sector of the economy, is subject to the theory of regret (Steiner et al., 2005). Succinctly, regret can be conceptualized as a negative emotion that is cognitively determined that individuals experience when they realize that a certain decision could have been made differently (Sarwar, Awang & Habib, 2019; Tsiros & Mital, 2000). It is in this aegis that understanding the importance of the study on regret becomes fundamental to elaborate explanations of the post-purchase evaluation process taking into account the fast-food decision process (Inman & Zeelemberg, 2002; Tsiros & Mital, 2000).

Thus, this study aims to investigate the emergence of affective and cognitive aspects of post-purchase regret in fast-food chains and the product attributes that would minimize these effects. To answer the research objective, this work used a quantitative approach based on the application of a questionnaire composed of the regret measurement scale proposed by Nicolao and Rossi (2003) and the identification of decision-making attributes inspired by the work of Loriato (2015). The main findings of the study indicate that in the pre-purchase period, consumers tend to evaluate the smell, look/appearance, good service, staff appearance and hygiene, location, temperature, taste, and physical structure of the

place. The use of such attributes is relevant in almost 80% of the cases. After consumption, it is common for the feeling of regret to appear, reaching an overall average of almost 50% of the points, which is quite relevant in a food scenario.

In the academic sphere, there is a lack of studies addressing regret in the consumer decision-making process in Brazil, observed in searches conducted on the platforms Spell, Scielo, Google Academic, CAPES journals and EnANPAD (the most important management event in Brazil) the last ten years. The studies found on the intersection of the theme between regret and decision making focus on investigating the role played by regret in decision making in a moral judgment context, especially in terms of investigating the relationship between self-esteem and regret (Andrade, 2019), which is when the individual regrets whether or not to make a decision (Muniz, 2018). Cross-referencing the term regret and food, along with variations of the English terms, finds fifteen recent studies, all of which are unrelated to the fast-food market. Some of these studies can be reviewed in Fu, Lin, and Wang (2021); Kose and Cizer (2021); Hadjisolomou and Simone (2021); Vosgerau, Scopelliti, and Huh (2020) and Lyons, Wien and Altintzoglou (2019).

Thus, studying decision making and the emergence of regret in its cognitive and affective aspects in the post-purchase in the fast-food market presents itself as a potentially under-explored gap worked on in this paper. In addition, the study contributes to the understanding that regret is a feeling present in the consumption of foods from the fast-food market (Biondi, 2019), which supports managerial actions that seek to improve the perception of the healthiness of these foods.

The conduct of the present research is justified by the economic-social relevance, since the fast- food sector presents continuous growth, is highly competitive and has significant importance for consumers, researchers, health professionals, managements and entrepreneurs (Loriato, 2015; Pigatto & Nishimura, 2012; Zeithaml & Bitner, 2003). Finally, due to the importance that the subject has taken in recent years and the key role it plays in the consumer decision-making process (Andrade, 2019; Nicolao, 2002), this paper believes that it may contribute to studies on the intersection of the themes decision-making, regret and fast-food, which contributes to the growth of the body of knowledge in the field of marketing.

In emerging economies such as Brazil, the results of the study can serve as a basis for comparisons with research from other countries that have experienced the same challenges in this context. In sum, the article contributes to advancing a deeper understanding of the issues of regret when assessed in the context of fast- food consumption. This is relevant to the literature related to consumer decision processes, but also to the field of consumption in general, culture and consumption, macromarketing, and public policy in food and nutrition.

Literature review

The important role of regret in understanding the post-purchase evaluation process was highlighted in the scientific community when Loomes and Sugden published, in 1982, the "Theory of Regret" (Steiner et al., 2005). According to this theory, consumers, when making a consumption decision, are already aware that they may experience feelings of regret or comfort depending on the option chosen (Nicolao, 2002). When regretful, consumers tend to feel totally responsible for the decision made, eliminating other factors (Walchli & Landman, 2003).

For Oliver (1997), regret can be defined as the possibility that something better would have happened if the consumer had made a different choice. It is an unpleasant feeling of comparing what is with what could have been (Inman & Zeelemberg, 2002). Such a definition encompasses two aspects of regret, the cognitive and the affective (Nicolao & Rossi, 2003).

Regret is linked to the idea of a mistake made or an opportunity missed by the individual, which provokes the desire to correct and resolve the situation (Inman & Zeelennberg, 2002; Nicolao, 2002; Tsiros & Mital, 2000). For Tsiros & Mittal (2000), regret is a negative emotion that arises from a comparison between the result obtained with the chosen option and the possible result of the options chosen. This emotion arouses feelings of sadness, anger, frustration, guilt and shame, evidencing the affective aspect of regret (Kahneman, 1995; Roseman et al., 1994).

Regret is a judgment, a comparison of outcomes made by the consumer when he perceives that his choice did not perform as expected (Inman & Zeelennberg, 2002). The cognitive aspect of regret is present when the consumer compares the options and perceives or imagines that his/her current situation could be better if he/she had made a different decision (Nicolao, 2002; Steiner et al., 2005).

When the individual goes through the regret experience, he/she recriminates him/herself seeking actions that will diminish the negative effects of the decision that was made and, mainly, tries to correct the mistakes made. One option to reduce the negative feelings of the regret experience is to have a positive view of such experience. Thus, the individual sees the situation as a learning experience, removing the previous negative feeling so that such experience can even become positive (Zeelenberg et al., 2000).

Associated with the affective aspect, regret is a cognitively more elaborate emotion that the consumer experiences when realizing or imagining that the present situation could be better if he or she chose another option (Nicolao, 2002). Thus, when consumers experience regret, they judge the choice alternatives and compare their performances. It is from this that the cognitive aspect of regret is understood (Steiner et al., 2005).

However, it will not be at all times that consumers will be aware of the preferred options, and when they do not have this information, they will assume performances that may eventually not correspond to reality (Steiner et al., 2005). The cognitive mechanism that enables the comparison between the performance of the chosen option and

the possible performance of other options is called counterfactual thinking (Roese & Olson, 1995). Counterfactual thinking refers to the process of imagining what could have occurred, that is, it is the process of comparing reality with possible alternatives (Walchli & Landman, 2003).

Usually, consumers follow the thought of if I had bought A instead of B (Roese, 2000). However, these imaginations are elaborated on unknown performances of the possible alternatives (Nicolao & Rossi, 2003). Counterfactual thinking is the cognitive mechanism by which regret occurs (Tsiros & Mittal, 2000), and thus, it is possible to state that the will to undo the decision that caused the negative emotion is a fundamental cognitive aspect of regret (Nicolao & Rossi, 2003). In summary, the types of regret can be seen in Table 1.

Table 1

Types of regret	Characteritcs					
Without alternatives	The only option is to stop buying the product;					
without alternatives	Impulse buying.					
Without alternatives and with dissatisfaction	Unjustifiable purchase;					
	Underperformance.					
	Underperformance;					
With alternatives and with dissatisfaction	Feelings that alternatives could perform better.					
	Satisfaction judgment;					
With alternatives and with satisfaction	Feelings that alternatives could perform better.					

Source: Steiner, Schlemer and Pádua Junior (2005, p. 5).

Furthermore, it is necessary to think that individuals' choices about what to consume are influenced by each one's social relations, besides economic and technological interactions (Schlosser, 2001).

Thus, it is possible to think about the existence of a decision-making process for any act of consumption. In many cases, such process is formed by the search for information considering several attributes, evaluation of the alternatives found, purchase, consumption and post-consumption evaluation (Kose & Cizer, 2021; Lyons, Wien & Altintzoglou, 2019). Thus, in general, an evaluation on post-purchase regret becomes more effective when one knows the attributes involved during the decision-making process (Kose & Cizer, 2021; Lyons, Wien & Altintzoglou, 2019).

In the same sense, the nature of post-purchase evaluation is comparative, that is, after making the purchase and consumption, the consumer will perform comparisons with his expectations, with what he thinks he deserved to receive, with what others received, and even with what he could have received (Nicolao, 2002). It is at this point that the consumer may experience post-consumption regret, that is, when the consumer compares the outcome of the chosen option with the possible outcome of options that were preferred (Nicolao & Rossi, 2003).

Thus, the level of post-purchase evaluation will depend on the degree of importance of that decision for the consumer and the experience acquired with consumption. When the chosen option meets the consumer's expectations, it is likely that the consumer will repeat the purchase. On the other hand, if the consumer has been disappointed with the purchase, they may choose to make complaints and try something to repair their experience. This post-consumption evaluation stage is important for future consumer decisions, as such evaluation returns to the psychological realm, assisting in future decision-making (Andrade, 2019).

Although several studies suggest individual differences in how anticipatory regret may affect decisions (Boeri & Longo, 2017; Keya, Anowar & Eluru, 2018), it is still unclear what role the context of the product or service being consumed plays in minimizing or maximizing regret in decision making. This reinforces the relevance of the present research. In the same vein, the literature lacks more critical discussions about how regret can be an important influencer on consumers' experience with the brand and their relationship with the company.

In view of all the discussions presented, the literature still seems to lack greater depth on the emergence of regret and its emotional relations in the decision making process of a common consumption situation such as the choice of fast food. Based on that, the following hypotheses are proposed to further investigate the relationship between fast food consumption and regret:

- H1: Regret when eating fast food is directly related to cognitive aspects
- H2: Regret when eating fast food is directly related to affective aspects
- H3: The product's attributes are capable of reducing the consumer's feelings of regret

Thus, after the theoretical discussion, the methodology will be presented.

Method

It was used a research of exploratory nature that integrates a non-probabilistic sample formed by 657 respondents, who in the period between November 2019 and January 2020, answered a questionnaire applied electronically by convenience (Wheelan, 2016).

As for the measurement instrument, the items were divided into three dimensions, totaling 33 items, the first and second dimensions are based on the regret measurement instrument proposed by Nicolao & Rossi (2003). The third dimension is inspired by the work of Loriato (2015), who studied the determinant attributes in the purchase decision and customer satisfaction in a street food context.

Thus, respondents were asked to make explicit their degree of agreement/disagreement with the statements using a 5-point Likert-type scale. All items were set up for compulsory responses, which did not generate data loss (Wheelan, 2016). The filter question used was "Do you consume products in fast-food chains?", the negative answer to this question resulted in the exclusion of 106 respondents, leaving 657 of the 763 response intentions. Respondents were asked to answer according to their general opinion regarding consumption in fast-food restaurants. The data analysis was processed using SPSS software. First, a descriptive analysis of the data was conducted. In the second step, coding of the questionnaire items occurred so that the analysis could be facilitated (Wheelan, 2016). The reliability of the instrument was checked using Cronbach's Alpha (Hair et al., 2009) and then the descriptive analysis of the dimensions was conducted. To calculate the score of the respondents in each dimension, the simple average of the respective indicators was used (Hair et al., 2009). It was also calculated a new variable called "Overall regret" from the simple average of the answers presented from the first and second dimensions.

In the last step, the multiple regression analysis, one of the appropriate techniques to answer the proposed objective (Field, 2009), it was performed the choice of independent variables to the presence of significance p value <0.001 (Hair et al., 2009) and strength of the relationship between the variables at least small (R>0.1) (Cohen, 1988). With regard to the statistics of the constructed model, the following were evaluated: the estimates using a 95% confidence interval; the fit of the model; the changes in R squared; the descriptive data; the partial and piecewise correlation; the collinearity diagnostics; the Durbin-Watson test; the case diagnostics; the making of the regression diagrams of the *ZRESID versus *ZPRED type, histogram and diagram of the normal probabilities of the residuals; the unstandardized, standardized, and fitted predicted values; Mahalanobis', Cook's distances, and value utilization; the analysis of standardized, excluded, and studentized excluded residuals; the standardized influence statistics of DfBeta(s) and DfFit; and the probability of F with entry of 0.05 and removal of 0.10 (Field, 2009). This route followed the guidance of Field (2009) and Hair *et al.* (2009). Thus, given the methodological assumptions presented here, the data will be analyzed.

Results

Of the 657 respondents, the majority are women (77.5%), individuals aged between 19 and 30 years (78.0%), people with income between less than 1 to 3 minimum wages (MW, 2019 value) (65.8%), those with incomplete or complete higher education (73.2%), and those who consume in fast food chains sometimes (48.55%) and often (27.70%). The descriptive data are presented in table 1. To perform the reliability analysis, the items in the questionnaire were coded according to table 2.

Table 1

Distribution of respondents by qualitative demographic data

Demos	Mariah la	Absolute Relative (%) 30 4.5% 520 78.0% 69 10.3%				
Demographic	; variable —	Absolute	Relative (%)			
	-18 years old	30	4.5%			
	19 and 29 years old	520	78.0%			
Age group	30 and 39 years old	69	10.3%			
	40 and 49 years old	24	3.6%			
	+50 years old	24	3.6%			
Sav	Feminine	517	77.5%			
Sex	Masculine	150	22.5%			
	Up to 1 SM (up to R\$ 998)	164	24.6%			
Incomo	Between 1 and 3 SM (R\$ 998,01 to R\$ 2.994)	275	41.2%			
Income	Between 3 and 5 SM (R\$ 2.994,01 to R\$ 4.990,01)	111	16.6%			
	Above 5 SM (Above R\$ 4,990.01)	117	17.5%			
	Incomplete or Complete Elementary School	4	0.6%			
	Incomplete or Complete High School	73	10.9%			
Education	Incomplete Higher Education	376	56.4%			
	College Complete	112	16.8%			
	Post Graduation Incomplete or Complete	102	15.3%			

Source: The authors (2020).

Table 2

Coding of questionnaire items

V0	Feel regretful about having bought this product
	tive aspects of regret
A1	Would you feel happier if you had made a different decision
A2	Do you feel upset about having bought this product
A3	Are angry at having chosen this product
A4	Are frustrated by the decision to buy this product
-	itive aspects of regret
C1	Believes he/she made an excellent decision
C2	You believe that you made the best possible decision, with the information available at the time
C3	You believe that you made an error in judgment in choosing this product
C4	Would have made a different decision if you had thought it through
C5	Believes that you were making a mistake when making the decision to buy this product
C6	If you had to choose, you would buy this product again in the future
Attrib	utes evaluated when buying food in fast-food chains
AT1	Food variety
AT2	Food hygiene
AT3	Appearance
AT4	Taste (yummy)
AT5	Smell (aroma)
AT6	Temperature
AT7	Physical structure of the place
AT8	Family environment (place for children, meeting place with friends)
AT9	Open environment (airy)
AT10	Safety of the place
AT11	Speed of service (waiting time)
AT12	Good service (friendliness and kindness of employees)
AT13	Appearance and hygiene of employees
AT14	Location (proximity to home or work)
AT15	Convenience (no need to cook at home, ready-to-eat food)
AT16	Value of the food
AT17	Ease of payment (e.g. credit card)

Source: The authors (2020).

The reliability evaluation was performed as from Cronbach's alpha coefficient. For its analysis, it was considered the acceptability limit proposed by Hair et al. (2009), of 0.600. It was verified that the overall reliability is 0.846. The only variable that caused an increase in Cronbach's alpha if removed (Field, 2009) was variable C1, increasing it to 85.6. Thus, C1 was removed (Field, 2009). All dimensions had Cronbach's alpha coefficients greater than 0.600.

This result indicated the reliability of the scales and the consistency between the different indicators of each dimension (Hair et al., 2009). The descriptive analysis of the dimensions brought the following results vis-à-vis the evaluated attitudes: Affective aspects of regret, =2.08, S=1.15; Cognitive aspects of regret, =2.58, S=1.18; Overall regret, =2.38, S=1.17. Choice attributes, =3.87, S=1.07. The dimensions of regret had very close results, however, it is noteworthy that the cognitive aspects dimension of regret scored slightly higher in standard deviation, indicating greater disagreement.

The attributes of decision making were the item of highest agreement among those surveyed, it is a dimension linked to the evaluative capacity of the consumer in decision making, performed through the judgment of several attributes, selected as relevant to the purchase of the product you want (Loriato, 2015). With the exception of open environment (AT9), all attribute variables presented an average above 3 points. Smell (AT5), appearance (AT3), good service (AT12), employees' appearance and hygiene (AT13), location (AT14), temperature (AT6), taste (AT4) and physical structure of the place (AT7) all had an average above 4 points, according to table 3.

Variable	Mean	Standard Deviation	Variable	Mean	Standard Deviation	Variable	Mean	Standard Deviation
AT5	4.40	0.873	AT16	3.91	1.138	A2	2.64	1.251
AT3	4.29	0.977	AT11	3.85	1.133	C5	2.53	1.260
AT12	4.16	0.928	AT1	3.77	1146	C4	2.10	1.102
AT13	4.15	1.015	AT8	3.65	1.116	A1	2.07	1.228
AT14	4.13	1.014	AT2	3.60	1.250	C6	2.07	1.176
AT6	4.10	0.971	AT15	3.49	1.179	A3	1.98	1.131
AT4	4.08	0.979	AT10	3.08	1.238	C2	1.89	1.157
AT7	4.01	1.011	AT9	2.87	1.254	A4	1.65	1.003
AT17	3.95	1.087	C3	3.12	1.264			

Table 3

Mean and standard deviation of variables

Source: The authors (2020).

Thus, to refine the analysis, we set out to build a model (Field, 2009). The first step in conducting the multiple regression analysis was to select the variables that would enter the model (Field, 2009). First, it was decided to make the variable V0 dependent due to its direct contribution on the statement of regret (Nicolao & Rossi, 2003). In a second moment, it was evaluated the relationship between the variables from the correlation analysis, presented in Table 4.

Table 4

Correlation analysis

	V0	A1	A2	A3	A4	C2	C3	C4	C5	C6	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9	AT10	AT11	AT12	AT13	AT14	AT15	AT16	AT17
V0	1,000																										
A1	,575	1,000																									
A2	,738	,591	1,000																								
A3	,674	,472	,687	1,000																							
A4	,825	,563	,731	,768	1,000																						
C2	-,340	-,331	-,324	-,239	-,272	1,000																					
C3	,516	,355	,516	,488	,531	-,226	1,000																				
C4	,453	,434	,424	,403	,481	-,280	,457	1,000																			
C5	,653	,501	,588	,579	,610	-,373	,619	,574	1,000																		
C6	-,348	-,370	-,322	-,308	-,359	,325	-,269	-,371	-,335	1,000																	
AT1	,065	,029	,062	,028	,049	,038	,030	,072	,068	-,016	1,000																
AT2	,005	-,067	-,015	-,033	-,011	,041	-,023	-,019	-,044	,108	,537	1,000															
AT3	-,005	-,060	-,017	-,005	-,014	,037	-,012	,019	-,029	,068	,520	,650	1,000														
AT4	-,023	-,077	-,034	-,085	-,066	,032	-,040	-,019	-,060	,147	,505	,794	,773	1,000													
AT5	-,021	-,040	-,023	-,030	-,027	,083	-,011	-,077	-,042	,098	,481	,653	,673	,760	1,000												
AT6	-,019	-,097	-,063	-,055	-,074	,060	-,053	-,056	-,076	,138	,456	,645	,639	,731	,720	1,000											
AT7	,004	,022	-,003	,025	-,008	-,012	,025	,015	-,024	,003	,355	,498	,524	,519	,551	,534	1,000										
AT8	,013	,038	,051	,093	,035	-,012	,027	,085	,020	-,098	,330	,289	,318	,259	,359	,333	,485	1,000									
AT9	,011	,002	,054	,081	,033	,044	,054	,061	,023	-,094	,342	,420	,386	,327	,401	,363	,472	,718	1,000								
AT10	,021	-,017	-,003	,045	,021	,059	,053	,065	,014	,030	,412	,588	,527	,562	,555	,579	,558	,477	,558	1,000							
AT11	,009	-,015	,009	-,014	-,001	,028	,032	,027	-,025	,042	,419	,638	,599	,710	,634	,636	,520	,304	,392	,645							
AT12	,021	-,037	,008	-,003	,004	,058	,017	,031	-,001	,070	,542	,704	,649	,745	,670	,637	,459	,311	,400	,602	,730						
AT13	,025	-,034	,011	,011	-,005	,063	,045	,020	-,022	,070	,474	,714	,617	,706	,629	,622	,488	,324	,398	,631	,608	,715					
AT14	,053	,042	,051	,067	,073	,015	,102	,045	,067	,019	,246	,392	,419	,419	,436	,443	,416	,302	,319	,420	,553	,438	,379	1,000			
AT15	-,069	-,059	-,083	-,116	-,091	,064	-,011	-,061	-,048	,166	,301	,425	,421	,538	,433	,421	,353	,177	,176	,367	,481	,416	,383	,465	1,000		
AT16	,029	-,059	,018	-,024	,004	,036	-,010	-,012	-,002	,087	,496	,593	,534	,644	,561	,526	,398	,254	,320	,450	,562	,615	,523	,450	,498	1,000	
AT17	-,028	-,037	-,024	-,017	,020	,096	-,052	-,009	-,042	,090	,452	,550	,534	,601	,542	,545	,446	,286	,344	,501	,581	,578	,472	,418	,552	,611	1,000
Sex.	-,131	-,098	-,143	-,080	-,131	,093	-,033	-,061	-,078	,088	-,019	,014	-,044	,031	-,019	-,036	-,035	-,073	-,033	-,014	,027	,001	-,051	,007	,003	-,053	-,014
Ida.	,146	,163	,142	,206	,177	,032	,066	,061	,114	-,173	-,029	-,157	-,126	-,237	-,136	-,145	-,059	,075	,072	-,017	-,115	-,129	-,115	-,073	-,232	-,133	-,130

Source: The authors (2020)

It is possible to notice in table 4 that there are variables with small (light red), medium (yellow) and high (green) positive and negative correlation with the dependent variable. For Cohen (1988), coefficients with values between [0.10 and 0.29] can be considered small; between [0.30 and 0.49] can be considered medium; and between [0.50 and 1] large. All variables that are marked with some color had a p value <0.001. An interesting fact at this point is that the attributes with p value <0.001 and small impact on variable C6 (If I had to choose, in the future I would buy

this product again) were the taste (AT4), the temperature (AT6) and the practicality (AT15), showing that even if they regretted it, consumers would consider buying the product again taking these attributes into consideration.

Next, the variables that were selected to compose the model that seeks to identify the predictors capable of influencing variable V0 make up variables A1 through A4, C2 through C6, age and gender, totaling 11 of the 38 variables used. Thus, the variables that entered the model were those with a significance level p value <0.001, indicating a significant relationship, and those with at least a small relationship strength (Hair et al., 2009). Thus, according to Field (2009), regression analysis was initiated. The forced entry method (Field, 2009) was used to build the model (Table 5).

Table 5

Model

Б	B oguara	R square	Standard		Change statistics							
R	R square	adjusted	err		Change F	gl 1	gl 2	Change Sig. F	Watson			
.870	.757	.747	.618	.757	70.006	28	628	.000	2.015			
Source: Th	a authors (202	20)					-					

Source: The authors (2020).

First, the Durbin-Watson test identified that the independence of errors is satisfied, showing a value of 2.01 (the closer to 2, the better) (Field, 2009). Following this, the ANOVA test was performed and demonstrated that the model has the ability to significantly improve the ability to predict the output variable. "If the improvement due to the fit of the regression model is much larger than the variation within the model, then the F value will be greater than 1" (Field, 2009, p. 196), thus the F ratio of 70.0, indicates that the results presented here are absolutely unlikely to have happened by chance (p < 0.001).

It can be seen that there is a high correlation (0.87) between the model and its ability to measure the attributes considered by consumers when making a decision to purchase products in fast food chains and the existence of the affective and cognitive aspects of post-purchase regret, the objective of this study. Thus, hypotheses 1 (regret when eating fast food is directly related to cognitive aspects) and 2 (regret when eating fast food is directly related to affective aspects) were confirmed and supported by the model.

The output variability (R2) on the dependent variable is 75.7% explained by the model. The adjusted R2 provides a sense of how generalizable the model can be, ideally being equal or close to the R2 (Field, 2009). In this case, 74.7% was obtained, 1 p.p. lower. Thus, the adjusted R2 shows a small level of drop in explanatory power and indicates how much this model would explain the dependent variable if it were derived from the population, as opposed to being a sample (Field, 2009).

The change statistics point out the changes in the model in case new predictor variables are added (Field, 2009). The model causes a change in R2 from zero to 0.757, this change in the amount of variance explained gives rise to an F ratio of 70.0, which is significant at a probability less than 0.001 (Field, 2009).

Regarding collinearity in the data, Bowerman & O'Connell (1990) state that the IVF should (1) remain below 10, which happened; (2) a mean IVF substantially greater than 1 may indicate that the regression model is biased, in this case, the result found was 2.5; (3) tolerance levels below 0.10 indicate serious problems, which did not occur; and (4) tolerance levels above 0.20 indicates a possible problem, which did occur. At this point, the sample data collection method and its scope may have an influence on the negative aspects (Montgomery, Peck, & Vining, 2006), since it occurred through social networks and by convenience.

For Field (2009), if the IVF values are all below 10 and with tolerances above 0.20, one can safely conclude that there is no collinearity in the data. However, it is necessary to look at other data to really understand how the model behaves. Thus, a case-by-case diagnosis was performed.

About 5% of the cases are outside the limits of standardized residuals (+or- 2), which is reasonable for a sample of this size (Field, 2009). This means "that the sample seems to fit what we would expect from a fairly accurate model" (Field, 2009, p. 205). In addition, the 657 cases were analyzed and none have Cook's distance greater than 1, even the out-of-bounds cases, i.e. none are able to unduly influence the model. To finish the analysis, plots of the *ZRESID versus *ZPRED, a histogram, and a diagram of the normal probabilities of the residuals were made. The *ZRESID versus *ZPRED plots were similar to a random set of points scattered around zero, satisfying the linearity assumption for all variables in the model. The histogram of the dependent variable showed a distribution very close to normality, which is not a problem in this case (Field, 2009). The probability diagram showed points very close to normality. After the confirmations that give greater certainty to the statistical analyses, a few points must be emphasized.

Table 6 relates to the model parameters. Here, the B values demonstrate the individual contribution of each predictor to the model. It can be observed that the greatest impact resides in variables A4 (59.5%, feels frustrated by the decision to buy this product), A2 (21.6%, feels upset about having bought this product), C5 (18.4%, believes he/ she was making a mistake when making the decision to buy this product). It is relevant to point out here that only one variable corresponds to almost 60% of the dependent variable's output, demonstrating the strength of the appearance

of the feeling of frustration after buying and consuming fast food products, which is in line with the debate about the presence of this kind of feeling by the consumer (Nicolao, 2002).

However, one cannot fail to notice that age is positively related to regret, which indicates a greater possibility of the consumer regretting having chosen fast food as his/her age grows. With regard to gender, the data indicate a higher level of regret among women.

Table 6

Coeficients

	Unstandardized Coefficients		Standar-dized Coeffici-ents	- t	Sig.		onfidence al for B	Cori	elations		Collinea Statist	
	В	Std. Error	Beta	ι.	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
Constant	.126	.231		.547	.584	327	.579					
A1	.068	.026	.069	2.570	.010	.016	.119	.575	.102	.051	.539	1.854
A2	.216	.036	.199	6.036	.000	.146	.287	.738	.234	.119	.355	2.819
A3	020	.041	016	479	.632	100	.061	.674	019	009	.347	2.880
A4	.595	.039	.560	15.244	.000	.518	.671	.825	.520	.300	.286	3.494
C2	039	.022	040	-1.761	.079	082	.004	340	070	035	.748	1.337
C3	002	.030	002	081	.935	061	.056	.516	003	002	.535	1.871
C4	036	.025	037	-1.431	.153	086	.014	.453	057	028	.570	1.753
C5	.184	.033	.176	5.647	.000	.120	.248	.653	.220	.111	.397	2.521
C6	022	.025	020	868	.386	071	.027	348	035	017	.713	1.402
AT1	.004	.026	.004	.145	.885	047	.054	.065	.006	.003	.565	1.769
AT2	007	.046	006	155	.876	098	.084	.005	006	003	.283	3.537
AT3	018	.042	015	432	.666	101	.065	005	017	008	.339	2.946
AT4	.051	.070	.036	.736	.462	085	.188	023	.029	.014	.158	6.325
AT5	081	.044	064	-1.835	.067	168	.006	021	073	036	.316	3.162
AT6	.133	.040	.109	3.305	.001	.054	.212	019	.131	.065	.353	2.834
AT7	.015	.030	.014	.507	.612	044	.075	.004	.020	.010	.510	1.961
AT8	023	.030	024	786	.432	081	.035	.013	031	015	.422	2.369
AT9	017	.031	017	546	.585	078	.044	.011	022	011	.389	2.571
AT10	.008	.034	.007	.221	.825	060	.075	.021	.009	.004	.385	2.596
AT11	010	.047	007	210	.833	102	.082	.009	008	004	.310	3.225
AT12	.009	.045	.007	.196	.845	079	.097	.021	.008	.004	.284	3.526
AT13	.024	.041	.020	.595	.552	056	.104	.025	.024	.012	.344	2.904
AT14	033	.027	032	-1.214	.225	086	.020	.053	048	024	.571	1.750
AT15	.017	.029	.016	.595	.552	040	.074	069	.024	.012	.534	1.873
AT16	.051	.033	.045	1.531	.126	014	.117	.029	.061	.030	.441	2.266
AT17	097	.033	086	-2.918	.004	162	032	028	116	057	.445	2.246
Sex.	014	.060	005	233	.816	132	.104	131	009	005	.925	1.081
lda.	.010	.035	.006	.283	.778	059	.079	.146	.011	.006	.840	1.191

Source: The authors (2020).

The main results are consistent with the report of other studies, as the marketing literature, especially the one related to consumer behavior, as it advocates the existence of attributes for decision making in different marketing contexts (Loriato, 2015). In the food market, smell, appearance/appearance, good service, staff appearance and hygiene, location, temperature, taste and physical structure of the place stand out as the most important attributes at the time of decision making, in line with the work of Loriato (2015). This is an interesting finding because it brings into discussion the experiential notion of consumption, which involves notions of feelings, as expressed by Holbrook and Hirschman (1982) and in other publications in the sequence.

Therefore, consumers tend to choose these places taking these attributes into consideration. After consumption, it is not uncommon the presence of regret in the cognitive and affective dimensions, since the most frequent feelings are frustration, annoyance and the feeling of being making a mistake when consuming those products. In other words, the alternatives exist, but the feeling of regret remains (Steiner et al., 2005).

In general, the cognitive dimension tends to be justified by a good analysis of the attributes, which decreases the weight of this dimension in the appearance of regret. The connection between the attributes evaluated by the consumer and the cognitive dimension justifies the importance of revealing which attributes are the most important for decision making, since these are of special interest for the marketing planning of organizations (Kose & Cizer, 2021) and other stakeholders, since they are more easily worked at the level of their materiality (Kahneman, 1995; Roseman et al., 1994).

Thus, the evidence obtained indicates that the consumer has alternatives for evaluation regarding the products available for his food consumption, but the chosen product ends up causing dissatisfaction, in line with the typology of regret of Steiner et al., 2005), in which type three indicates the existence of purchasing alternatives, but with the presence of dissatisfaction, highlighted as underperformance than expected by the authors. What is important to highlight here is that consumers tend to blame themselves for dissatisfaction, which explains the greater weight of the affective dimension, going against what was recommended by Walchli and Landman (2003).

However, even if such sensations are present, consumers feel again attracted to fast food, stimulated by taste, temperature and practicality, confirming hypothesis 3 (the product's attributes are capable of reducing the consumer's feelings of regret). It is possible that these individuals seek to minimize the feeling of regret through the effects of these attributes on their choices, according to Zeelenberg et al., (2000). This is very close to regret of Kahneman (1995), where a decision is followed by a feeling that is considered negative. It is important to emphasize that the most impactful variables were AT4 (taste), AT5 (smell), AT6 (temperature), AT14 (location), AT16 (value of the food) and AT17 (ease of payment), with AT6 having the attribute with the greatest capacity to reduce the feeling of regret.

These research findings, also consistent with the Brazilian reality, contribute to a better understanding of the repentance phenomenon in other socio-cultural contexts, since it is in line with the different international works cited above.

Final Considerations

In general, we found evidence that pre-purchase and post-purchase seem to assume distinct scenarios in this context. In the pre-purchase moment, consumers tend to evaluate the smell, look/appearance, good service, staff appearance and hygiene, location, temperature, taste, and physical structure of the place. The use of such attributes is relevant in almost 80% of the cases. After consumption, it is common for the feeling of regret to appear, reaching an overall average of almost 50% of the points, which is quite relevant in a food scenario (Kose & Cizer, 2021) and may indicate a point of concern for organizations in this sector.

However, the greatest weight of regret (more than 70%) is allocated in the affective dimension, causing the consumer to present feelings of sadness, anger, frustration, guilt and shame (Kahneman, 1995; Roseman et al., 1994). Thus, the cognitive conditions of judgment having the revealed attributes as a direction do not seem to be a problem, since less than 20% of the response on the dependent variable is related to the belief that one was making a mistake when making the decision to buy a certain product.

Even if regretted, these consumers would be tempted to buy again taking into consideration the taste, temperature and convenience. There seems to be a kind of decision-making loop here. The attributes justify the consumer choice, this consumer feels regret on an affective level, and mitigates such regret by a new round of decision making based on certain attributes that try to justify the new decision. It seems that food buying behavior tends to work in a looping system based on positive and negative feelings that appear in sequence with relevant frequency.

Thus, it is possible to conclude that the work brings relevant contributions to the various fields to which the research is adhered. For the field of consumption, the results shed light on the relationship between decision making and regret, an articulation that has been little explored in the literature, especially when the fast-food context is taken into consideration. For macromarketing, the research joins others with the intention of advancing the discussion about the well-being of consumption, which can be mitigated by a purchase decision that potentiates regret. Since the research was developed in an emerging economy, the results of the study still contribute to add to others that have already been developed in other contexts and can serve as a basis for comparison with other countries.

Finally, despite the contributions pointed out above, one must acknowledge the existence of a certain limitation of the model, as mentioned by Bowerman and O'Connell's (1990) assumptions. However, for the fast-food market, the model has some level of contribution. The good results found in the tests mean that the refined model can be used as part of further research regarding the further investigation of purchase regret, an increasingly relevant subject. A few more critical considerations are in order here. The theory on which the study was based has a strong psychological bias, that is, regret is understood as something essentially linked to emotions during the decision making process and directly involved in issues such as post-purchase evaluation, consumer satisfaction, and consumer decision.

As a suggestion for future research, the cycle of desire, regret, and repurchase could be further studied, since dissatisfaction with the consumer decision does not seem to disturb making new purchases, making this point especially interesting for further investigation. Another possibility is to compare the results obtained with other consumption scenarios. Certainly, the topic of regret still has ample possibilities for research in the marketing discipline. Thus, there are many other possibilities for further research.

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