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Persuasion and emotions: consumer fraud on Black Friday Brazil

Persuasão e emoções: fraudes ao consumidor na Black Friday Brasil

Persuasión y emociones: fraudes al consumidor en Black Friday Brasil

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Abstract

This research aimed at analyzing the relation between emotions and consumer fraud, based on the Elaboration Likelihood Model (ELM). For this purpose, Sentiment Analysis was performed using the Natural Language Processing (NLP) from Twitter data obtained on the day of the event, and content analysis to understand the factors involved in the event and whether companies with reported complaints on PROCON/SP (2019) and the website *Reclame Aqui* (2019) were related. The results show that most emotions arising from Black Friday Brazil are both negative and related to consumer fraud. They also reveal that individuals who had low involvement with the persuasive messages used emotions as simple indications, unlike individuals who were highly involved and used emotions as an argument in the persuasive process to avoid being victims of fraud.
Keywords: persuasion; emotions; consumption; Twitter; social media

Resumo

A presente pesquisa teve como objetivo analisar a relação entre emoções e fraudes ao consumidor, tendo como base o Modelo de Probabilidade de Elaboração (ELM). Para isso, foi realizada análise de sentimentos, por meio do método de Processamento de Linguagem Natural (PLN), com dados do Twitter obtidos no dia do evento, e análise de conteúdo para compreender os fatores que englobam o evento e se empresas com reclamações nos relatórios do PROCON/SP e do site *Reclame Aqui* estavam relacionadas. Os dados evidenciam que a maioria dos sentimentos provenientes da Black Friday Brasil são negativos e estão relacionados à fraude ao consumidor. Também revelam que indivíduos que apresentaram baixo envolvimento com mensagens persuasivas, utilizaram as emoções como simples indicações, diferente de indivíduos que apresentaram alto envolvimento e que utilizaram as emoções como argumento no processo persuasivo para não serem vítimas de fraude.
Palavras-chave: persuasão; emoções; consumo; Twitter; redes sociais

Resumen

La presente investigación tuvo como objetivo analizar la relación entre las emociones y el fraude al consumidor, basado en el modelo de probabilidad de elaboración (ELM). Para eso, se realizó un análisis de sentimiento, utilizando el método de procesamiento del lenguaje natural (PLN), con datos de Twitter obtenidos el día del evento, y análisis de contenido para comprender los factores que componen el evento y si empresas con quejas en los informes PROCON/SP y el sitio web de *Reclame Aquí* estaban relacionados. Los datos muestran que la mayoría de los sentimientos del Black Friday Brasil son negativos y están relacionados con el fraude al consumidor. También revelan que las personas que tenían poca implicación con mensajes persuasivos utilizaron las emociones como simples

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indicaciones, a diferencia de las personas que tenían una alta implicación y que utilizaron las emociones como argumento en el proceso persuasivo para no ser víctimas de fraude.
Palabras clave: persuasión; emociones; consumo; Twitter; redes sociales

Black Friday in Brazil is a controversial event. Despite its objective of offering great deals, the event receives several complaints related to consumer fraud, mainly regarding marked up prices and deceitful advertising. Because of that, Brazilian consumers have started calling this event *Black Fraud*. Considering the importance of the event, and fraud occurrence on Brazilian Black Friday, this research has as its objective to analyze the relationship between emotions and consumer fraud, employing for that the Elaboration Likelihood Model (ELM). Fraud consists of a process in which benefits are obtained at other people's expenses through deceitful means (Parodi, 2008). Among different perspectives, ELM (Petty & Cacioppo, 1984) could contribute to the comprehension of fraud persuasion mechanisms.

Elaboration Likelihood Model (ELM)
ELM states that persuasion takes place through the activation of two cognitive routes: central and peripheral, which when activated promote attitude changes (Petty & Cacioppo, 1986). In general, the central route requires more awareness from the individual. Regarding this route, the consumer is motivated to obtain further information about the products and, based on that, decide whether to accept the arguments contained in the message. Accordingly, the individual has high levels of involvement, in a way that promotes an intense cognitive elaboration of the arguments contained in the message (Andrade et al., 2011; Petty & Cacioppo, 1984, 1986).

Regarding the peripheral route, the consumer does not need significant awareness, given that it requires low elaboration of the persuasive message. An example of peripheral route happens when the individuals accept a message argument that takes into account attractive elements (color, music, among others), or source authority (a person that is a reference in their field, celebrity, etc.). Generally, consumers that tend to have low involvement with the messages presented do not consider pros and cons of an issue, favoring a change of attitude. However, these changes are considered relatively temporary if compared to those happening through the central route (Kamlot, 2012; Petty & Cacioppo, 1984).

The route's activation depends on some factors such as Involvement Level, Need for Cognition and Elaboration Ability (Muniz & Maffezzolli, 2012; Petty & Cacioppo, 1984). Involvement Level is characterized by the degree of personal relevance. About this factor, involvement motivates people to process messages through primary arguments, in which consumers consider the brand attributes and benefits, or peripheral, in which the brand attributes are not shown but it intends to create a favorable atmosphere, by considering, for example, the message source (Muniz & Maffezzolli, 2012; Petty & Cacioppo, 1984).

The Need for Cognition refers to how the individual tends to get involved and evaluate cognitive efforts in the processing of persuasive information (Cacioppo et al.,

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1984). According to Gomes et al. (2013), people with low levels of need for cognition avoid cognitively demanding activities.

Elaboration Ability, in its turn, refers to the ability and motivation to evaluate and process messages (Petty & Cacioppo, 1986). According to Petty and Cacioppo (1986), individuals who have high elaboration likelihood tend to travel the central route, since they will be influenced by the objective and relevant arguments of a message, unlike an individual who has low elaboration ability and tends to be influenced by peripheral arguments.

Emotions and the Elaboration Likelihood Model (ELM)

It is known that emotions are highly relevant phenomena when it comes to persuasive processes. As a concept, the term emotions is regarded as a state of specific feelings, such as: anger, happiness, sadness, surprise, fear, among others (Petty & Briñol, 2014). In light of that, ELM points out that attitude changes happen as a result of different psychological processes, which can come from individual or situational factors. These factors can determine how motivated an individual will be involved in a message, and whether there is a high or low elaboration level, emotions may present themselves in different ways, influencing the change of attitude process (Petty & Briñol, 2014). ELM suggests four ways in which emotions can influence attitudes through primary cognition.

Firstly, when the individual shows low elaboration, emotions can work as simple indications. That is, when a person is not that involved in a persuasive message, emotions could have an impact on attitude change, since if the message is associated to a positive feeling, it will likely be more considered and appreciated than if it were associated to a negative feeling (Petty & Briñol, 2014).

Secondly, when elaboration is high, emotions can work as arguments. That is, when an individual is highly involved in a message, all relevant information from that context will be evaluated. Therefore, if an individual's emotional reactions are judged as relevant, emotions could favor attitude change towards the message (Petty & Briñol, 2014).

Thirdly, when elaboration is high, emotions could also influence cognition. That means emotions might improve retrieval of information emotionally consistent with the persuasive message and inhibit emotions inconsistent with that moment. In that sense, if an individual experiences positive thoughts, that will influence them to interpret messages in a more favorable way (Petty & Briñol, 2014).

Lastly, emotions could also influence the amount of thought when elaboration happens without restrictions. In a situation of no restrictions elaboration, the individual still does not have a clear understanding of the message personal relevance and due to that has no comprehension of the message elaboration, whether it is high or low. In this context, emotions might influence the way an individual encodes the message, which means emotion will indicate whether the message will be elaborated through central or peripheral route (Petty & Briñol, 2014).

Considering the importance of emotions influence on persuasion, companies seek, through persuasive messages, to change the affective state or associate products and brands to positive emotional responses. Given that, the company's ability to make the individual feel good might be an essential attribute for the purchase choice (Solomon, 2016). Regarding the importance of emotions as a persuasion mechanism in the consumption field, as mentioned, the present study aims to analyze the relationship between emotions and consumer fraud, employing for that purpose the ELM.

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Method

The data obtained for this research have followed three stages: Data Harvesting on Twitter; Sentiment Analysis and Content Analysis. The Anaconda Navigator 3.7 package and the app Web Jupyter Notebook were employed in order to execute these steps.

Regarding Twitter data harvesting, data extraction was performed on this social media on the day of Black Friday Brazil (29/11/2019), through Python programming language. By using the Application Programming Interface (API), provided by Twitter, there were requested tweets identified as Portuguese language, which contained hashtags related to Black Friday Brazil, such as *#BlackFridayBrasil, #BlackFriday2019, #BlackFriday* and *#BlackFraude*. Among the tweets extracted, there were selected 3,000 that figured the verb "buy" or similar words. This criterion was chosen so that it could be possible to analyze tweets that were somehow related to consumption.

Following that, the sentiment analysis technique was employed, which consists of studying emotions and opinions, on text, through computational algorithms. This technique allows evaluating and classifying opinions and polarity (positive, neutral or negative) of texts posted on social media (Castro & Ferrari, 2016). In order to do that, Natural Language Processing (NLP) method was used, which aims to understand human language through commands executed by computers (computational models; Kang et al., 2020).

To create the NLP program in Python, the set of programs and libraries Natural Language Toolkit (NLTK) was used. To classify texts, the *Naive Bayes* method was used, which is a text likelihood classifier based on *Bayes* theorem that consists of the fact that the likelihood of presence or absence of a class feature is independent from other resources (De França & Oliveira, 2014).

On the third stage the content analysis was performed, which consists of treating information, through objective and systematic description, from the content present in the texts, aiming to obtain indicators on how to interpret them (Bardin, 1991).

In order to verify whether the tweets selected showed emotions related to consumer fraud, two items were added to those tweets: the complaint reports registered on the Code of Consumer Defense and Protection (PROCON) from the city of São Paulo entitled *Black Friday Overview 2019*, with complaints registered on 29th of November up to 8 pm, and the list of the 10 companies with the largest number of complaints on Black Friday, provided by *Reclame Aqui* website, showing complaints registered from the period of 11 am on the 27th to 11am on December 1st.

Furthermore, during this stage of analysis, it was verified whether the tweets presented arguments to classify them as central or peripheral route according to ELM.

Results

First of all, the accuracy of the sentiment analysis model by the Naive Bayes method was tested, showing 0.80 and therefore indicating method suitability. Overall, the model tends more towards negative feelings (55.17 %), followed by neutral feelings (31.60 %) and, at last, positive feelings (13.23 %). To better comprehend data, Accuracy Recall and F1-Score were calculated for each class (Table 1).

Table 1

Accuracy, Sensibility and F-1 Score of sentiment analysis classes

	Accuracy	*Recall*	F1-Score
Positive	0.88	0.36	0.51
Negative	0.78	0.97	0.86
Neutral	0.83	0.66	0.74

Despite the accuracy metrics showing good results, recall metrics of positive class presents a low score. Recall is the comparison value between situations that were manually classified as positive and those who were correct according to automatic classification. About that, it is important to point out that Black Friday in Brazil receives a negative name, *Black Fraud*, due to the fraud practices. During manual classification, it has been noted that even an individual apparently showing positive emotions towards the event, when making use of the term Black Fraud, such as in "Wow, I'm really happy with my Black Fraud purchases", makes analysis difficult. Thus, considering that the test stages and accuracy showed satisfactory results and that there was no change of mood tendency showed on the event regarding the manually classified tweets, the model was kept with reservations.

Regarding content analysis, those 3,000 tweets were divided into 6 (six) different categories. These were defined by how often the themes appeared on tweets: Fraud (211 tweets); Attitude towards Black Friday (952 tweets); Deal Perception (Promotions; 694 tweets); Influencing factors – Lack of money (208 tweets); Influencing factors – Doubts About Promotions (140 tweets) and non-Applicable (795 tweets).

All tweets, except those belonging to the non-Applicable category, were classified according to a central or peripheral cognitive route. Regarding the central route, there were admitted tweets in which consumers showed more involvement with the message. In this category, there were considered tweets that presented arguments from individuals motivated to obtain further information about the event and/or products, and who justified Black Friday perception with clear arguments or even presented counterarguments as a justification for a change of opinion or attitude regarding any episode on that given day.

On the peripheral route there were classified tweets in which individuals showed low involvement with the message. In this category, there were considered tweets that presented clear arguments that individuals were fooled due to not paying close attention to advertisement information or not making decisions considering brand attributes at the moment of purchase. There were also considered individuals that regretted their impulse purchases or that justified the absence of motivation to consider the significant occurrence of fraud on this event. It is important to highlight that it was not possible to classify all tweets, giving that it was common the display of opinions, purchase descriptions, making it difficult to accurately classify according to a specific route. Therefore, from the 2.205 tweets, 37.36 % were classified, and regarding those 94.3 % related to the central route, while 5.7 % to the peripheral one.

Analysis Categories

Fraud category integrates the tweets that showed consumers experiences during the event related to any fraud situation. From 211 tweets, 92.4 % showed negative affective states and 7.6 % showed neutral ones. In this category, the model did not classify

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any tweet as positive. From the total tweets in this category, it was possible to classify 16.63 % tweets by central route and 2.36 % by peripheral route.

In the category Attitude towards Black Friday, there were classified 952 tweets that showed consumers opinions regarding Black Friday and its relations to frauds. Sentiment analysis for this category figures that 75.4 % showed negative affective states, 18 % neutral and 6.6 % positive ones. Regarding tweets classification according to the cognitive route, 34.55 % belonged to central route and 3.04 % to peripheral route.

In the category Deal Perception (Promotions), there were classified 694 tweets in which consumers noticed promotions during the event. Sentiment analysis for this category showed 45.7 % positive affective states, 39 % neutral, and at last, 15.2 % negative ones. From the tweets in this category, 9.65 % were classified as central route and 1.87 % peripheral route.

Considering that these categories are related to the perceptions about the event, there were also verified the amount of times these companies that figured on complaint reports from Procon/SP and the website *Reclame Aqui* were mentioned. Summing up, reports showed 17 companies and all of them figured on tweets, being mentioned 1013 times. The companies that were not contained on the reports were mentioned 288 times, as shown on Table 2.

Table 2
Companies mentioned and whether they were present or absent from Black Friday Brazil complaint reports

Category	Number of mentions: Companies mentioned on the reports	Number of mentions: Companies with no complaints
Fraud	566	36
Attitude towards Black Friday	331	143
Deal Perception (Promotions)	116	109
Total	**1013**	**288**

Considering that several factors can influence attitude change, during content analysis, the themes identified with no money to purchase and doubts about promotions during the event figured often, and so were considered two analysis categories. Tweets from both these categories were not classified, individually, according to cognitive routes, that happens because in the category Lack of money, all tweets present the same justification: not being able to consume due to lack of money. In the category Doubts about Promotions, all tweets are questions about promotions on the day of the event.

In the category Influencing Factors – Lack of Money, from 208 tweets, 78.4 showed negative affective states, 17.8 % showed neutral and 3.8 %, positive ones. In the category Influencing Factors – Doubts about Promotions, Sentiment Analysis showed, of 140 tweets analyzed, 85.7 % showed neutral states, 12.1 % negative and only 2.1 % positive ones.

At last, the non-Applicable category contained 795 tweets that referred to random subjects that do not directly address consumption experiences on Black Friday or did not fit the other categories, discussing contents related to politics, romantic relationships,

among others. However, all the tweets in this category were considered during sentiment analysis.

Discussion

This research had as its goal to analyze the relationship between emotions and consumer fraud, using ELM as a guide. In order to do that, data was harvested from Twitter during the Brazilian event in 2019 and content and sentiment analysis were performed.

Overall, the Black Friday event presented negative affective states, in a total of 55.17 % of tweets on sentiment analysis. It is noticed that these negative emotions might be related to a fraud experience (ex. Fraud category) as well as to the perception of inability to purchase (ex. Lack of money category). It is important to highlight that literature states that when an individual needs are not met, it tends to cause negative emotions (Hawkins & Mothersbaugh, 2018). Thus, whether by fraud (that hurts the purchase reach with the expected advantageous conditions) or by lack of money (which makes it impractical to purchase), needs end up not being met.

Despite the predominance of negative affective states on the event analysis, the category Deal Perception (Promotions) calls attention for showing only 15.2 % negative states. Since Black Friday is an event in which people aim at deals and sales, when they find those, they tend to express happiness, which corroborates the fact that most tweets from this category were positive.

Despite the importance of emotions comprehension during the event, these should not be interpreted isolatedly, given that, as suggested by ELM, the dimensions of information processing need to be analyzed. Specifically about the category Fraud, not only there is a prevalence of negative states, as mentioned before, it is also noticeable that there is a greater portion of tweets classified by the central route, that is, individuals that were close to being fraud victims, changed their opinions before completing the purchase, showing counter-arguments for the change of attitude. It was also possible to classify tweets by peripheral route (however in a smaller number), that is, consumers that argued having realized they were victims of fraud after completing the purchase.

Considering that Black Friday objective is to promote good deals, the event may show distractions, such as several persuasive messages with promotions. In situations with many distractions, depending on the message content and the thoughts triggered, the individual may accept the message carefully or not (Petty et al., 1976). In face of that, the consumer is carefully persuaded when a message presents unfavorable arguments in which there is the possibility to offer counterarguments, such as the case of tweets classified in central route. They can also be persuaded in a reduced form, that is, when a message shows favorable arguments which consequently triggers similar thoughts to the individual, which enables them to make a simple association regarding message suitability (Petty & Cacioppo, 1986; Petty et al., 1976).

On this last case, when individuals are not involved with a message, emotions might have a great impact on attitude change. It is necessary to point out that the effect of emotions on attitude change depends on elaboration extension and the moment in which the emotion takes place, especially when these emotions work towards validating a thought (Petty & Briñol, 2014). It is also worth to highlight that attitudes influenced by low elaboration processes tend to be weaker and less stable (Petty & Cacioppo, 1986; Petty & Briñol, 2014). That might explain the event of a consumer that shows low involvement, notices a favorable message at the moment of purchase, and after a period,

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however, identifies the fraud, corroborating with the classification of tweets as part of the peripheral route on this category.

About the category Attitude towards Black Friday, it has been noticed that 75.1 % presented negative states, indicating negative attitude towards the event. Black Friday Brazil, partially, maintains its negative popularity as a result of complaints related to consumer fraud along its editions. In situations like that, people tend to show high level of involvement considering that there is the threat to show negative results, unlike the positive states that show how safe an environment is and indicates the need for low cognitive effort (Petty & Briñol, 2014; Schwarz et al., 1991). Such understanding was corroborated by our data, given that most tweets in this category were classified as central route. It is noted that, on most tweets classified as central route, there had been a price comparison, that is, a counterargument was offered to justify negative attitude towards the event, comparing product prices before and after Black Friday.

In this sense, considering that consumers have shown high level of involvement in this category, negative states arising from the Black Friday event become relevant evidence when it comes to decision-making (Petty & Briñol, 2014). An important factor to be considered in this category is the consumer's fear to be fooled. Fear is an emotion that tends not to work in low cognition conditions, which happens because people tend to seek its implications (Petty & Briñol, 2014), requiring more message elaboration. On Black Friday, the fear of fraudulent practices makes people more involved in the persuasive messages, favoring them to follow proper recommendations in order to avoid those situations. PROCON/SP website promotes interventions before and during the event, recommending people to research prices on comparison websites and physical and virtual stores in order not to get caught on fake deals.[1] So, considering the negative attitude towards the event, consumers might accept better these recommendations coming from agencies responsible for consumers to avoid adverse consequences.

One important element for this category analysis is the defining attitude moment towards the event. When individuals already show previous attitudes, they tend to trust their existent opinion and show little need for analyzing new information (Petty & Briñol, 2014). In this sense, the fact that a consumer has negative attitude before the event may reduce messages elaboration, and although it lowers the chances of getting caught on a fraud, it may cause possible good deals during the event to be overlooked.

About the category Deal Perception (Promotions), unlike the categories Fraud and Attitude towards Black Friday, positive states have prevailed. As mentioned before, these might be explained by the fact that the event promotes a search for good deal opportunities. That is, people are happy if their expectations are apparently met.

In this category, it was possible to classify most tweets as belonging to the central route. According to Briñol et al. (2007), when people are happy, there is more trust in the thoughts generated by a message, creating an impact on attitude change. Besides that, when elaboration is high, positive feelings might influence cognition, that is, when a person is happy there is the likelihood to increase memories associated to happiness, and with that, interpret the information presented in a more positive way (Petty & Briñol, 2014).

It is also noticeable that in this category, individuals show different perceptions towards the companies, finding a larger number of possibilities when it comes to companies that offer deals. From the 17 companies mentioned on the complaint reports, 12 were mentioned 116 times. On the other hand, 68 companies that were not brought out on these reports were mentioned 109 times, making this the category that showed the largest number of mentions referring to not reported companies. The data points out that,

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[1] Available on: https://www.procon.sp.gov.br/procon-sp-ja-esta-de-olho-na-black-friday-e-orienta-consumidores/

depending on the elaboration level of a persuasive message, emotions might present themselves in a different way for each person (Petty & Briñol, 2014).

Furthermore, this category has classified 9.65 % of tweets as peripheral route, however it is worthwhile to highlight that when a consumer does not keep involved with the arguments presented in a message, positive states can also associate to peripheral arguments (Petty et al., 1993; Petty & Briñol, 2014), making these people vulnerable to fraud practices. That happens because positive emotions, in low elaboration situations, tend to influence attitudes directly, and not the thoughts about the message (Petty et al., 1993).

Besides the analyzed categories, and considering that ELM suggests that attitude changes can be influenced by individual and situational factors (Petty & Briñol, 2014), during content analysis, two categories were selected for influencing factors: Lack of Money and Doubts about Promotions, in which it has been noted the presence of arguments that kept individuals from purchasing during Black Friday.

In the category Influencing Factors – Lack of Money, most data showed negative states (78.4 %). Considering that all tweets showed the argument of being unable to purchase products on Black Friday due to lack of money, it is believed that this category shows a great level of consumer's involvement, that is, they are motivated to process messages through primary arguments (Muniz & Maffezzoli, 2012). In light of that, considering high elaboration, emotions coming from this category become arguments, which happens because this emotion is relevant to favor or not the change of attitude (Petty & Briñol, 2014).

In the category Influencing Factors – Doubts about Promotions, 85.7 % showed neutral states. Tweets of this category contain only consumer's questions about promotions during the event, without a positive or negative connotation. Overall, this category shows that consumers, in order not to be victims of fraud, seek other relevant means of information about the event, which fits the central route (Petty et al., 1983).

Besides that, this category corroborates the understanding that individuals are motivated to seek out other people's opinions to guide their actions. By doing so, the individual avoids negative consequences, may those be behavioral, affective or cognitive, in case they make any wrong decisions (Festinger, 1950; 1954; Petty & Cacioppo, 1981). In the case of Black Friday, obtaining information from other people that had already had positive or negative experiences on a certain matter can be an important source for consumer decision-making.

Considering that both cognitive routes, central and peripheral, are not mutually excluding and can exist in a continuum in the elaboration process, this category, by presenting mostly neutral states and showing that individuals are, at first, involved with the message, can use the same responses to determine how much they will think about a message (Petty & Cacioppo, 1981; Petty & Briñol, 2014).

Thus, considering all that was mentioned in the previous categories, depending on the emotions arising from the responses, it could influence the message relevance for the individual, making its elaboration high or low, that is, whether if it will continue through a central or peripheral route (Petty & Briñol, 2014).

Conclusion

We believe that this research offers some contributions. Regarding theoretical level, it was possible to verify that, mostly, negative states were related to consumer fraud and that emotions work in different ways for consumers on the day of the event. There were discovered positive and negative states and those worked as arguments for

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individuals that showed high elaboration or simply worked as indicators for consumers with low message elaboration (Petty & Briñol, 2014).

Regarding methodology, we believe that this research, by employing NLP, could inspire new studies in Brazil, given that NLP has started to figure more widely in international literature (Ataman & Özgüner, 2021; Manguri et al., 2020; Saura et al., 2019).

The analysis of individuals' behavior on social media, along with quantitative and qualitative strategies already usual in Psychology, can contribute to a more integrated perspective of individual's behavior in different domains, as in the consumption context.

On an applied perspective, we believe that the present study has also evidenced the importance of social media monitoring during consumption events. By employing these methods during events, especially on Black Friday, consumer protection organizations are able to have some control over what is occurring and take the proper measures so that the event has less fraud practices, thus protecting the consumer.

However, some limitations must be highlighted. Due to the fact that Black Friday Brazil expresses, by consumers, an ironic title, and also shows a shortage of database related to building models of Sentiment Analysis through supervised method in the aforementioned context, it was difficult to classify data on the positive side, showing an inferior value to the other ones. Thus, new studies can employ a larger number of tweets to classify and practice this model, especially regarding positive polarity, seeking to minimize the impact of sarcasm and irony on the model.

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How to cite: Soares, S. T. A. & Modesto, J. G. (2022). Persuasion and emotions: consumer fraud on Black Friday Brazil. *Ciencias Psicológicas*, *16*(2), e-2339. https://doi.org/10.22235/cp.v16i2.2339

Authors' participation: a) Conception and design of the work; b) Data acquisition; c) Analysis and interpretation of data; d) Writing of the manuscript; e) Critical review of the manuscript.
S. T. A. S. has contributed in a, b, c, d; J. G. M. in a, c, d, e.

Scientific editor in charge: Dra. Cecilia Cracco.