

## INTRODUCTION

While in the United States of America in the 1950s there were only 3 TV channels, with commercials made exclusively for these channels, the reality of the present day is very different, with hundreds of live and on demand channels, and several video distribution platforms with global reach, distributed across a variety of devices such as TVs, desktops, tablets, mobile phones and consoles (Salgado, 2019). If we compare these two eras, it is clear the difficulty that the marketing professionals face nowadays to decide where to invest the available resources. In a research published in June 2017 for the American market, 58.7% of households with TV already had some peripheral connected to the internet (12% growth compared to 2016) (Nielsen & Audience, 2017). What catches the eye in this research is that not only that the average time people spend on TV is falling, as there is a growth in time spent on cell phones.

There is a transformation of both the device that is used to view the content in television, as the way it is transmitted. In the last two decades, several new media have emerged – digital media - that quickly gained audiences, i.e., approximately fifteen percent a year in the last 10 years (Economist, 2018). A portion of these new media is intended for the eSports audience, and has seen its equally accelerated and steady growth with 26% CAGR over the last 5 years for its platforms (Statista, 2019). In the beginning, they shared the public's attention, with a small portion of the time, with the traditional means. But nowadays, there are groups of people who choose not to have TV at home, increasing this number in the last 6 years from 1.3% to 2.6% of U.S. households (Neddog, 2017). It is estimated that 32% of the public time will be spent on digital platforms content consumption. Some examples of today's most popular digital platforms are Netflix (streaming platform of series and movies), social networks (like Facebook and Instagram), and Twitch (video game-oriented streaming platform). These new media live with the most traditional (newspapers, magazines, radio and TV), but have unique features, that can be used as a way to leverage brands that are willing to use these new ways to promote their products (Salgado, 2019).

Among these peculiar characteristics, the most relevant are: (1) the possibility of knowledge of the user profile, which is done through your prior registration and knowledge acquired by the habit of using; (2) the individuality of the media that has been accessed, most of the time, through individual devices such as computers, tablets, mobile phones or consoles, and consequently there is greater control of content by the user (Li & Lo, 2015); (3) the interactivity between the one who publishes and those who watch, or even among those who watch; and finally, (4) the fact that digital media requires more attention compared to traditional media (Li & Lo, 2015). Additionally, another feature found in electronic game championships distribution platforms is the mix between (1) the concept of electronic game specific content distribution – known as hot-, and (2) the concept that deals

with great interactivity between participants through chat – known as cool (Sjöblom & Hamari, 2017). These new tools created in this way make it possible to be much more assertive in advertising the right context.

Because the audience for these new media has grown quickly and consistently, companies are increasingly interested in this public to promote their products. Internet advertising spending is expected to grow 11.9% per year until 2021, reaching US\$ 3.6 billion. In traditional media, expected expansion is more modest, 3.5% per year (PWC, 2017). However, some specific characteristics of these media require advertisers to adapt their communication to these platforms. One point that draws attention is that initially these platforms, either as a strategy for getting audiences, or for not having audiences and therefore not getting advertisers, launch its product without advertising, and its audience gets used to watching content delivered without interference from advertisers. When they decide to insert the ads, platforms realize that audiences demand something different from the traditional. Examples of changing to the traditional format are the 30-second ad formats that are no longer valid, because the audience requires something faster; or the banners that are made today interactively and even with games inserted (this is the case of the overlay format that interferes much less with the broadcast media than the commercial break). But while the format of this commercial may differ, it is still an advertisement that now finds new ways to reach its audience.

Since the late 1960s, the effectiveness of ads has been studied, notably by looking at the degree to which viewers have of ads, as well as how the context in which they are inserted or how this content involves the viewer. For example, some studies show that funny commercials are inefficient when the content of the program is already funny, but becomes more efficient when the content is unpleasant (Stipp, 2018). The consumer engagement with the media, as well as the congruence of the commercial with the media, result in greater reminder of the advertising (King, Nyilasy, & Reid, 2018). Marketing Professionals should pay attention to the context in which the ad is inserted, as it may impact the brand and product recall. It is noteworthy that the vast majority of studies reported in the literature on the impact of congruence took place when these new digital platforms did not yet exist. Moreover, fewer studies have been done with these platforms.

Besides to studying the contextualization of the ad with the media, studies have been done on product/media congruence, and its impact on the advertiser memory, concluding broadly that congruent ads have their content most strongly remembered (Kononova & Yuan, 2015). An example of a product matching situation would be to have a culinary program advertising a culinary product. As an example of contextual congruence, it would be the adaptation of a travel agency commercial to the same gastronomic environment by using middle characters as chefs to present travel packages. Questions related to the viewer's arousal with the commercial, and the impact of the commercial performance by the arousal of the transmitted content, were also studied earlier. For example,

the level of attention given to commercials is reduced when the viewer has more arousal when playing an electronic game match (Gangadharbatla, 2016).

In a recent study, Belanche, Flavian and Pérez-Rueda (2017) studied the effect of context and product congruence, as well as arousal, on the effectiveness of digital media advertising. This was one of the first studies conducted for digital media. Although this article has a field experiment, this was done only to measure the impact of arousal on the viewer's time spent watching the commercial, and the other experiments were laboratorial. Nor was a selection of the environment in which the commercials were displayed, which were displayed if the viewer searched for a particular subject on the platform. Other than that, these authors have not tested live broadcasts, which, by the viewer's arousal, bear similarities to traditional media broadcasts.

This dissertation aims to study the impact of context and product congruence on the effectiveness of digital media ads, specifically on eSports content delivery platforms. The effectiveness of the ad in terms of product congruence, context congruence and viewer arousal are evaluated by considering the viewer's time watching the commercial.

For this, a field experiment was made, having as a scenario, among others, an electronic games championship. The ads tested varied randomly between out of context and in context, and related and unrelated product, so that it was possible to test the effects of product and context congruence on ad attention. The results show that both product congruence and context congruence increase viewer time by watching the ad, but arousal reduces this time. Comparing with the study by Belanche, Flavian and Pérez-Rueda (2017), the impact of the commercial arousal on this time showed that the greater the arousal in front of the commercial, the greater the attention paid to the viewer, being that the rating for the commercial was based on a pretest in which electrodes were installed to measure viewer reactions when watching it. Unlike this study, it proposes to study the impact of content arousal on it, that similarly, capturing the viewer's attention reduces the attention spent on the commercial, reducing the time spent on the platform. The commercial characterized as exciting was a ski downhill. The study was not conclusive for the purposes of product congruence.

This research contributes to theory and practice. For the theory, it contributes to the study of the effects of congruence in digital media and more specifically the use of new content distribution platforms– i.e., eSports. In addition, based on a field experiment, different from what traditionally happens in congruence and arousal studies, we respond to a literature call for more experiments of this nature. We increased the robustness of the results by avoiding laboratory selected audience bias or laboratory behavioral bias. The study also contributed to the practice by providing companies that want to use the eSports platform to advertise their brands or products, of insights

into the most effective product and context congruence levels. Marketing managers can thus develop ads more effectively given the congruence factor.

This dissertation is structured as follows. It starts with the presentation of online platforms comparing them with traditional platforms. Then follows introducing eSports platforms and presenting a comparison between eSports and conventional sports. In order to explore the platform's viewers, it is also addressed through a study already published, the motivation they have for watching these broadcasts. After this introduction about eSports and the concept of digital platforms, previous studies on the impacts of context congruence on advertising are presented. The work then develops presenting the proposed conceptual model, research methodology and design, and detailing field experiments, then to present the results and their discussion. The paper concludes with the presentation of the conclusions, deepening the contributions to theory and practice, limitations and suggestions for future studies.

## **LITERATURE REVIEW**

The concept defined as product congruence is the level of relationship between the product advertised in the ad and the content of the program in which this commercial is transmitted. In other words, product congruence is defined as the ad that uses the assisted program environment, reflecting consumer needs, values and interests by advertising the product to this audience. As an example of product congruence in a commercial, we can cite the case of culinary programs where ads are of home appliances, cooking utensils or inputs; or fashion programs with clothing ads, or lastly, travel programs where travel sites or hotels are advertised at intervals.

The higher this level of association, the greater the viewer's interest in the ad (Belanche, Flavián, & Pérez-Rueda, 2017). It is concluded from the study by these authors that it is not only necessary to know which public is viewing the ad, but also what is the context. Moreover, analyzing context alone is not sufficient to assess its effectiveness. The rationale for this increased interest in the product is related to the consumer's attention, which translates into greater capacity of it to absorb information about the commercial. Another important detail is that if the viewer is interested in the commercial, there's less chance of being annoyed by it (Edwards, Li, & Lee, 2002), and therefore, more likely to watch, making it more effective. In the study that was done by these authors, still with banner ads, but already with animation (rich media), which brought more sophistication to them, and in full screen format disrupting text reading, it has been noted that a reading block causes irritation. However, this block can be greatly alleviated if this (1) is entertaining, (2) has a more informative character, or even (3) reaches the user at an opportune time when their attention is lower.

It is noteworthy that the market classifies products that are content related products to as endemic, and unrelated products as non-endemic (AD\_LAB, 2018). As an example of congruence on the eSports platform, endemic

product advertisers are, for example, Intel, Benq, Nvidia, and Logitech, while examples of non-endemic product advertisers are DHL, Mastercard, Deloitte, and Mercedes-Benz.

The Context Congruence is defined as the approximation of the ad with the context in which it is inserted. There is a different impact of a commercial aired during a journalistic program, compared to the impact of the same material aired during a soap opera.

The products and services advertised in the commercials are not made exclusively for that audience, as in the case of product matching commercials, but are designed to be more attractive.

According to Stipp (2018), The recent interest in studying this topic of contextual congruence in advertising results from several factors, namely: (1) the growth of programmatic media, which consists in adjusting the ad to the viewer's profile, and despite verifying the viewer's profile, the context of the ad is often overlooked (Loechner, 2014); (2) because conversely, relating the brand to inappropriate content is harmful; (3) Since there is a concern for efficiency gain in commercials where there is greater adherence requires improvement; and finally, (4), because new tools emerged that made it possible to go deeper into this subject.

Advertising context congruence (inserted as billboards in the game, for example) has been found to have greater acceptance on the part of the players, and incongruity leads to less sense of game realism, and less interest in commercials (Lewis & Porter, 2010). Another study corroborating these results found through lab experiment that contextual advertisements help to memorize the advertiser's name (Zanjani, Diamond, & Chan, 2011). An online experiment-based study also found that context congruence helps in recognizing content (Kononova & Yuan, 2015). According to Moorman (2003) who carried out a field experiment during four football matches (N = 344), the viewer's involvement level significantly influences the memory of the ad inserted during the match.

There are, however, some studies that present cases where the alignment between commercial and content did not have the expected positive result, as in the case of Li and Lou's work. (2015). In a laboratory experiment, these authors found that there is greater recognition of the brand when in the same context of the content, but only when the commercial is aired during transmission, and before or after it has worse recognition than incongruent. This congruence can end up distracting the viewer. If the viewer cannot relate the product to humor, for example, even if a funny commercial is made to be presented at a break from a humorous show, it will not have the expected leverage. Alignment should not be in just one emotional dimension. Reality shows are very successful due to the complexity that people are in real life and the conflicts generated.

In a 2018 meta-analysis of experiments conducted until 2013, authors King, Nyilasy, and Reid (2018) stated that while the analysis is not conclusive, some experiments show a positive influence of context congruence while others point to a negative influence, media professionals should consider entering context to make decisions. As

observed in this contextual congruence meta-analysis, the main dependent variable used in ad contextual efficiency studies is memory. According to these authors, *“if a target audience cannot remember a marketer’s message, advertising largely wastes time, money, and resources. That is why recall measures are critical tools in marketing research and have become as important as the creation, placement, and viewing of a marketing message”* (King et al., 2018, p. 2).

There is then a great inconsistency between results from previous studies, and the definition of the construct (i.e., context influence on advertising efficiency) has been pointed as the main cause for this inconsistency. (King et al., 2018). Three points were presented as factors of lack of knowledge about the influence of context on efficiency (Moorman, 2003): (1) Studies published to date were unclear what features of the context impacted on advertising efficiency (either engagement, arousal or gender); (2) studies published to date were concentrated on television, which has a different form of use than print or internet; (3) The works were published based on laboratory experiments that differ from real life, because the viewer watches the content presented and not what he normally seeks or watches, and also because in the experiment the user cannot avoid seeing the advertising as they can in their home, changing channels or sharing attention with other activities such as talking, eating or household activities.

In conclusion, dozens of studies have been done since the 1950s on the impact of context on advertising, and most have found a positive influence of context on viewer response to ads (Stipp, 2018). But, as presented, the results found are not always consistent. Apart from this lack of coherence, few studies have been developed considering digital media. More specifically, no experiment was found on the influence of context using digital video platforms (excluding insertion of advertisements in online games). In addition, not many field experiments were found either, mostly results from laboratory experiments.

The arousal in advertising can be defined as the emotional intensity of the viewer watching a content. The viewer arousal to contents watched impacts the commercial performance (Gangadharbatla, 2016).

The fundamental law that relates performance to arousal is the Yerkes-Dodson law, which states that the relationship between attention and arousal has the shape of an inverted U curve, increasing with the arousal to an optimal and then, decreasing after this point (Kahneman, 1973). Kahneman (1973) says that some activities demand and require more mental effort than others, and that multiple demands can be followed simultaneously, with resource allocation rules for these various activities. Attention and mental effort are correlated and the arousal can help processing it.

In one of the three experiments conducted by Belanche, Flavián and Pérez-Rueda (2017) with YouTube videos, the impact of product engagement on moderating the viewer's arousal effect on commercial efficiency was tested.

The result was that for products in which the customer had a high level of interest, the impact of arousal is positive on efficiency; However, for low-interest products, the effect is the opposite, as a low arousal has a better effect than a high arousal.

An experiment by Norris and Colman (1993), with 90 participants, presented controversial result, because when the content was identified by the viewer as engaging, there was a negative correlation with the advertiser's memory and positive correlation with content classified as boring. The authors argue that this results from the fact that the viewer has his/her attention directed to the content of the program, noting less the commercial. That is, the influence of the viewer's arousal in the commercial memory was measured, but no interference was made on it to be closer to the inserted context. These results are in line with the study by King, Nyilasy and Reid (2018) regarding arousal, which has a negative correlation with the commercial memory. That is, in the context that has greater arousal, there is less memory of it.

When consumers are very aware of a championship broadcast, for example, they may have greater difficulty processing secondary information such as commercials made in the middle of the broadcast. Gangadharbatla (2016) shows that high arousal reduces the memory of the commercial, as the spectator focuses more on the game than on the commercial.

### CONCEPTUAL MODEL AND HYPOTHESES

In this section, we present the conceptual model that was developed based on the literature. In Figure below, we represent this model.

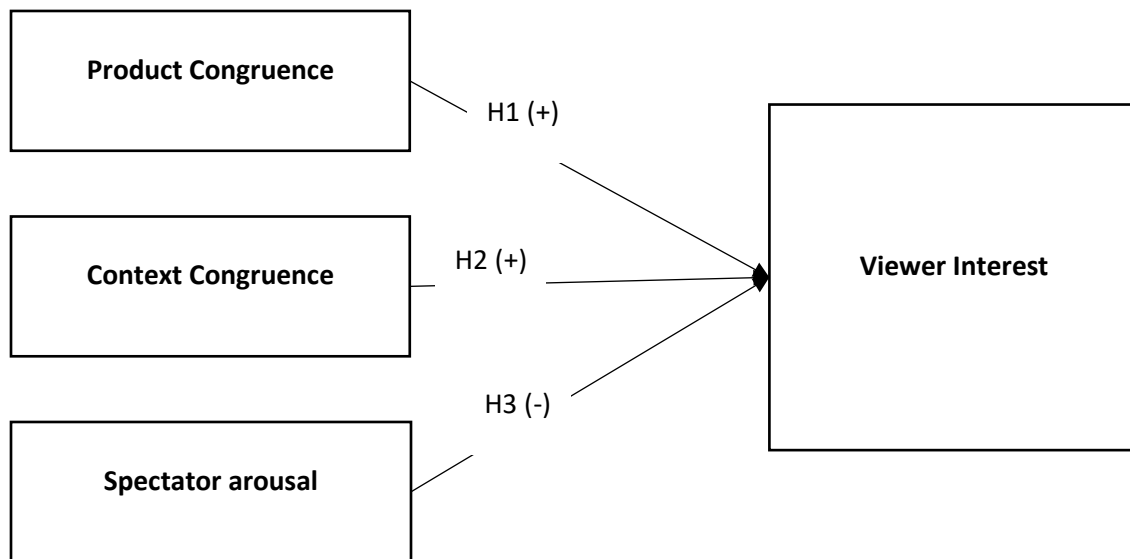


Figure - Theoretical model (Source: own elaboration, 2019).

In previous studies, for commercial placed during content streaming, it was found that product-level congruent commercial favor viewer retention (Belanche et al., 2017). The product congruence reflects the perception of the importance of the product by the consumer considering their interests, values and needs. Thus, it is expected that the commercial that are contextually congruent products will be more efficient, due to the consumers' attention when watching it, and to the fact that there is greater knowledge of the product, since it is related to the consumer's interest or their daily life. Another highlight is that consumers are less annoyed with products of interest. (Edwards et al., 2002).

Endemic (i.e. product congruent) products are more likely to have more unforgettable commercials as they are part of the viewer's daily life, such as Nike soccer shoe commercials. Non-endemic products, however, see digital platforms (notably eSports) as a way to present products to a group that would not normally be impacted, focusing more on targeting the consumer audience than on advertising efficiency. Engagement with the product by the viewer increases their attitudes toward the ad and brand and reduces the level of rejection (Belanche et al., 2017). We then propose the following hypothesis:

**H1: Product commercials that match the program content, show a greater viewer interest on it.**

The level of contextualization of the commercial with the content in which it is inserted has a direct influence on the time the viewer watches them, and congruent commercials have more time (Belanche et al., 2017). However, to show that this effect does not always follow the same pattern, while some studies show that this congruence improves the memory of the commercial, others show that congruence reduces this memory (King et al., 2018). As an example, a security commercial has its effectiveness enhanced if it is aired during crime news program, which prepares the viewer about the importance of this feature (effect known as Priming theory) (Kononova & Yuan, 2015). Another example is a (banner) commercial on a webpage in which the content is related, so that the reader is prepared for that content and has greater attention (Zanjani et al., 2011).

We then propose the following hypothesis:

**H2: Congruent contextual commercials show greater viewer interest in it.**

The arousal with a content, influences the attention given to the commercial presented (Belanche et al., 2017). Consumers select and respond to certain stimuli and make them pay close attention to high arousal content. (i.e. sexual or risky behavior). An experiment conducted by Gangadharbatla (2016) yields different results, as it measures the attention given in the game, not in the commercial, and its impact on the attention given to it, and it was found that the arousal is inversely proportional to the attention to the ad. This feat had also been noted by Norris and Colman (1993) when they experimented with 90 participants and noted that there was a negative correlation between advertiser memory and the viewer's engagement with the content. It is argued that, due to



the fact that the viewer is more involved with the content by the arousal they provoke, they have less interest in the commercial presented later.

As in the present study we study the viewer's arousal with content, and its impact on the commercial attention, similar to Gangadharbatla's (2016) article, we propose the following hypothesis:

**H3: Commercials that are displayed in larger arousal environments have a lower viewer interest on it.**

## **METHOD**

It was adopted a quantitative method to test the proposed conceptual model, the methodology being used as field experiment. The experiment consists of applying a test under controlled conditions to examine the validity of hypotheses or determine their effectiveness. In general, experiments are done in laboratories, in which case they are criticized for sampling - given that they usually have students as participants - as well as for test conditions, which are generally far from reality (Shadish & Cook, 2002). The field experiment is easily generalized since one study a phenomenon without or with little interference from the researcher and the natural environment in which the phenomenon takes place (Shadish & Cook, 2002).

Prior to the field experiment, a pre-test was conducted to select the best ads to use in the experiment and to test the effects of product congruence and contextual effectiveness of advertising. A pilot study was also conducted to test the system. The following section presents the pretest research design and its results, followed by the pilot and field experiment.

The platform used for the pre-test was *MTurk*, an *Amazon Inc.* platform that was used to find survey respondents. In this platform was included a link from *Qualtrics*, platform where the questionnaires were elaborated by the researchers. The audience selected to answer this questionnaire consisted only of Brazilians, and this was the same audience as the experiment conducted later.

The pre-test was made with the object of selecting four commercials to be used in the product congruence and context congruence experiments. The selection was based on the answers to questions related to both types of congruence, and the ads that had the largest discrepancy between in-context and out-of-context were selected. The context used in the pretest for the “in context” situation was the same as that used in the experiment, that is, the *eSports* environment. For the “out of context” situation, a soccer championship was used, which has similarities for being a sporting event, but has a potentially different universe of spectators. Each respondent saw four commercials within one of the four conditions tested (congruent to context, not congruent to product, congruent to product, not congruent to product).

The definition of commercials was based on it made in the context of *eSports* and products for this audience. After the definition of some commercials, those that had products not marketed in Brazil or with little insertion were excluded, as in the case of Mercedes-Benz ads. Subsequently, the 8 commercials (4 commercial pairs for context congruence) were compressed or stretched so that they all had the same one-minute duration. For product matching commercials (4 commercials), the duration of it has not changed. Still at this stage, commercials that had a very short duration, were excluded.

In the pre-test initially, a 2-minute video was presented with the context in which the commercials were analyzed - i.e., excerpt from an *eSports* championship and a soccer match. Then a short questionnaire was presented to understand the respondent's profile. Based on a similar experiment with television viewers (Norris & Colman, 1993), the following data were collected: age, gender, years of study after 16 birthdays, other viewer interests (i.e. soccer, newspaper, reality shows, soap operas, others) and interest in watching future *eSports* broadcasts. Randomly, the commercials of the same duration were then presented and then asked some questions to analyze the congruence and their opinion regarding it.

The scale used for the context and product congruence analysis was *Likert* (range 1 to 7) based on the article Kononova and Yuan. (2015).

As a result of the pre-test, the question result averages for product congruence, show that the viewer actually perceives this congruence. In the *eSports* environment, where *Benq* and *Intel* ads have product congruence, averages were 5.76 and 5.60, respectively, while *Nike* and *Adidas* had significantly lower averages of 3.73 and 3.70, respectively. *Benq* has an average of 0.17 higher for the *eSports* environment than *Intel*. In the soccer environment, where *Nike* and *Adidas* commercials have product congruence, the averages calculated were 4.79 and 6.54, respectively, and *Benq* and *Intel* averages were 3.16 and 3.43. *Adidas* averaged was 1.75 higher in this environment compared to *Nike*.

Analysis of the case data showed that there is a difference in averages between the commercials evaluated for both *eSports* environment ads - ( $F(3, 120) = 9.95, p < 0.0001$ ) and for Soccer environment ads - ( $F(3, 192) = 32.22, p < 0.0001$ ).

Thus, for the product congruence experiment, *Benq* and *Adidas* commercials were chosen for presenting the highest averages in the product congruence assessment in environments where expected congruence, and lower averages in environments that were not expected to congruence. *Benq* averaged 5.8 in the *eSports* environment and 3.2 in the Soccer environment. *Adidas* had an average of 6.5 in the Soccer environment and 3.2 in the *eSports*.

Similar to the one presented in relation to the product congruence averages, the question results averages in relation to context congruence show that this congruence is actually perceived by the viewer. In the *eSports*

environment, *DHL*, *Gillette*, *Coca-Cola*, and *Gatorade* adapted contextual commercial averaged 5.52, 5.32, 3.66, and 4.44, respectively. The commercials without adapted context had averages of 2.42, 2.89, 2.64 and 3.29. DHL then presents the highest average with the commercial adapted and lowest average with it, without context adaptation.

The analysis of the case data showed that there is a difference in the mean of the evaluations of the commercials for the ones with context congruence - ( $F(3,183) = 16.55, p < 0.0001$ ) and for the ones without context congruence - ( $F(3,179) = 2.89, p < 0.04$ ).

There was a big difference between the average perception of congruence indicated by the interviewees. It is also noted, now separating into congruent and non-congruent commercial groups, that there is a clear difference in the commercials. Based on the results of the context congruence pre-test, which shows that there are statistical differences between the various ads, the one chosen for the experiment was the par DHL, essentially for the following reasons: 1) because it has no brand influence because it is the same in both commercials; 2) because they are the ones with the largest average difference.

With these definitions it was followed for the pilot in order to anticipate the difficulties of the experiment. Originally, the hypotheses of the experiment were related to memory and purchase intention, which would be captured through a questionnaire that would be completed at the end of the commercial. And this pilot was intended to make an operational test of the pre-championship experiment, as well as to understand if viewers correctly understood the questions and answered them as expected. A pilot was conducted with only two ads in the same context. DHL commercials that had the highest variation in pre-test congruence perception for this pilot were used.

In a first pilot, the presentation of the commercials was structured so that when watching or skipping it, the viewer would watch a second quick ad that was nothing more than a call to fill out a questionnaire to evaluate some points such as reminder and purchase intention. Although it was possible to create this sequence of ads, it was not possible, due to platform limitation, to select the context (environment in which it would be transmitted), which was fundamental for the realization of this pilot experiment. So, the channel used was a live *eSports* championship to publicize *DHL* commercials.

As it was not possible to do the experiment as presented above, a search call was inserted into the ad itself within the last five seconds of the ad shown, and as an incentive for viewers to complete a questionnaire, an autographed *GFallen* T-shirt, a well-known T-shirt from a Brazilian counter strike player (CS:GO) was offered.

For reasons not known, there was no interest by the viewers in completing the questionnaire. Thus, the present study chose to use viewer permanence data (ie, time until ad skip was used) offered by the *YouTube* platform, and

this data was used to understand the effectiveness of congruence, not considering memory or purchase intent as initially desired, but rather in terms of the commercial watch time that is related to the viewer's interest in it.

With the selection of commercials in the pre-test stage and made the pilot, the field experiment is carried out. The two main tasks in experiment design are creating high quality interference with the cause, and understanding how it interferes with the effect (Shadish & Cook, 2002). In experiments to prove the relationship between cause and effect: (1) there is manipulation of cause and measurement of results; (2) the variation of the cause is related to the variation in the effect; (3) controls are used to reduce interference that may disturb the explanation; (4) uncontrolled variables that may interfere with the results are measured with the objective of being statistically treated.

Independent variables were defined as context congruence, product congruence and arousal, and as dependent variable the viewer's interest.

**Product Congruence:** consists of the proximity of the products to the public of the context in which the ad is inserted. A scale from 1 to 7 was used, which asked: “Now in relation to the advertised product / service, how much do you believe it relates to the championship?” (Belanche et al., 2017). The pretest was used to evaluate the perception of greater product congruence by the public.

**Context Congruence:** consists of the proximity of the ad with the public, being obtained by adapting the commercial to the environment where it will be inserted. A scale from 1 to 7 was used, which asked: “How much does the latest commercial relate to the championship you are watching?” (Kononova & Yuan, 2015). The pretest was used to evaluate the perception of greater context congruence by the public.

**Arousal from the viewer:** measured by a *proxy* for the transmission of the championship. Spectators watching live soccer matches in advance have significantly higher arousal compared to viewers watching recordings (Vosgerau, Wertenbroch, Carmon, Vosgerau, & Carmon, 2006). With this, it was considered that the viewer's *arousal* when the *live* broadcast is superior to the *arousal* when it comes to a replay of the same championship broadcast. According to the study by Vosgerau et al. (2006), this superior arousal happens even without knowing the outcome of the match, but simply because the event is no longer undetermined.

**Viewer Interest:** is the dependent variable, and was measured by how long the viewer watches the commercial measured by the YouTube platform that translates into a proxy of interest. In the experiment, it was possible to measure and compare the viewer's residence time in the different quartiles of the ad, and with this calculate an average residence time that was used to assemble the statistics. The *YouTube* platform provides the percentile of viewers who watched 25%, 50%, 75% and 100% of the ad (milestones). This measure is also based on the work of Belanche, Flavian and Perez-Rueda (2017). As a control variable for the experiment, we used the arithmetic

mean (as shown in figure below) of the percentages these ads had of hearing after being individualized, based on the concept that when the data are grouped into a frequency distribution, the midpoint of each class is used as an approximation of all values contained in the class. (Sindelar, Conto, & Ahlert, 2014).

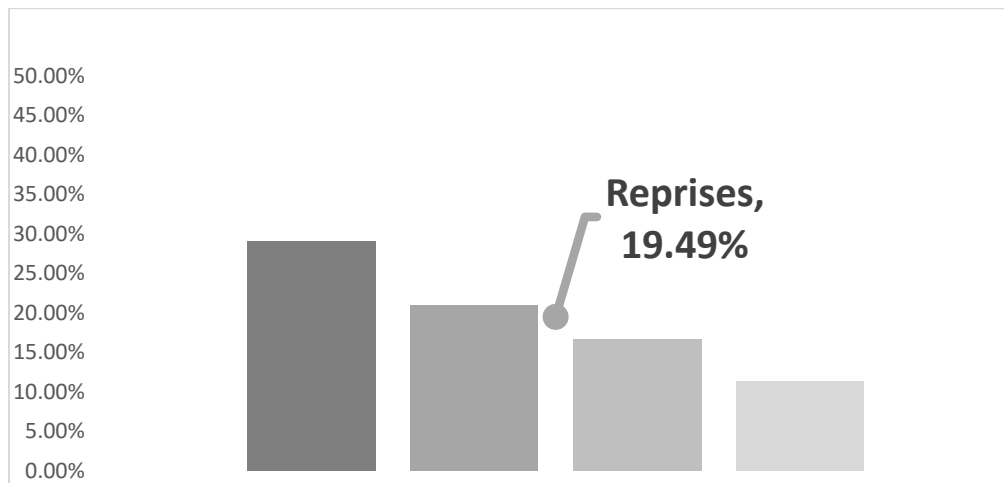


Figure – Dependent variable - average time (Source: own elaboration, 2019).

The individualization mentioned was done by repeating the percentages by the frequency in this interval, making the same number of lines as the observations.

The field experiment took place during the broadcast of one stage of a Brazilian championship of *eSports* of the game League of Legends (LoL) and the broadcast of an important stage of a soccer championship game (match Brazil and Argentina in *Copa América*) that happened in late June and early July 2019. The soccer match had a live audience of 200,000 spectators and LoL's match had a live audience of 20,000 spectators. The reason for this choice was the popularity of the game and the championship, making data collection more likely to be performed in just one day, and reducing uncontrolled effects of the experiment. The audience for the final experiment was again composed only of Brazilians. The ads had a total of 7,332 views and 77 clicks.

The research *design* of the experiments was done comparing the ads with and without context congruence and with and without product congruence. We can consider two studies (one for context congruence and one for product congruence) of 2X1 *design*.

## RESULTS

### First Experiment - Impact of Product Congruence on the commercial watch time

For this experiment, a sample of 466 spectators who watched the Benq commercial - which was identified in the pre-test as the one with the highest product congruence assessment - was used during the live broadcasts of the 2<sup>nd</sup> stage of the championship, which took place on June 29<sup>th</sup>, 2019, or during the *Copa America* broadcast on July 2<sup>nd</sup>, 2019. The demographic distribution of the survey is 85% male, 68% under 35 and 62% accessed *YouTube* from the desktop. Compared to Chart 2 - Evolution of the Audience Profile, the age of the experiment group is similar to that of the reference. In the case of gender distribution, despite having a higher percentage for males, in the experiment we have an even higher concentration that probably should be related to the type of game.

The results of the analysis show that there is a statistical difference in the sample ( $F(1.464) = 53.98, p < 0.001$ ), and the averages show that there is a 42% longer time for the ad when served in a congruent environment to content (see figure below). Although the result is compatible with that presented in the previously published work, which was conducted for digital platform advertising, but not for *eSports* (Belanche et al., 2017), the identified impact was not of the same magnitude as that identified with this study.

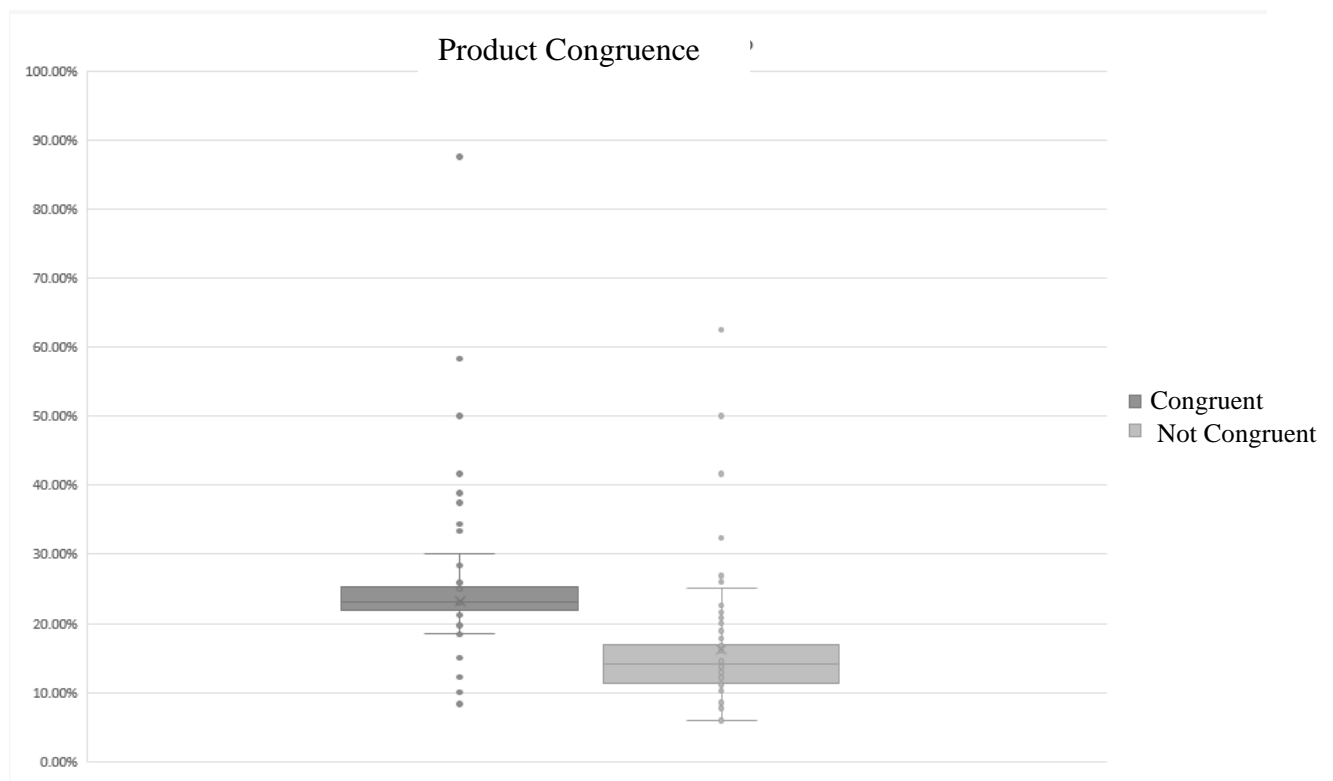


Figure - *Box Plot* of the effect of product congruence on viewer dwell time watching the ad (Source: own elaboration, 2019).

In figure below, the visualization percentage for each commercial break is presented. It is observed that there is a reduction in the percentage of viewers who watch in all percentiles.

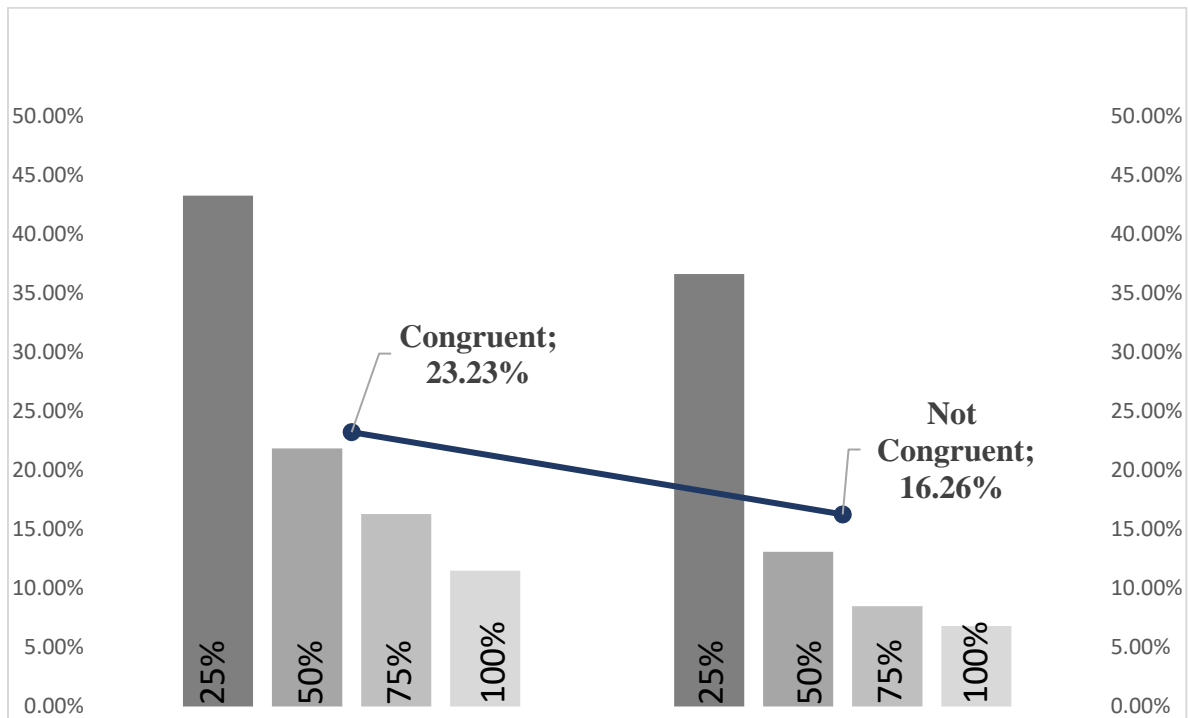


Figure -% of viewers who viewed 25%, 50%, 75%, and 100% and their respective average (Source: Own elaboration, 2019).

### Second Experiment - Impact of Contextual Congruence on commercial watch time

For this experiment, we used a sample of 143 spectators who watched the DHL commercial during reprise on the day after the broadcast of the 2<sup>nd</sup> stage of the championship, which took place on June 29<sup>th</sup>, 2019. The demographic distribution of the survey is 90 % male, 85% under 35 and 54% desktop accessed *YouTube*.

The results of the analysis show that there is a statistical difference in the sample ( $F(1,141) = 4.04, p < 0.05$ ). Averages show that there is a 35% longer permanence time for the commercial when served in congruent context environment (see figure below) In the study by Belanche, Flavián and Pérez-Rueda (2017), it was not possible to measure the effect of context congruence on the average viewing time of the commercial by the viewer. In addition, the data were not statistically relevant to measure the influence of product congruence on the viewer's attitude to the brand or the commercial acceptance.

Although the experiment conducted by Zanjani, Diamond and Chan (2011) evaluated the effect of context congruence on brand awareness rather than on viewer attention, it was found that context congruence has a 37% positive impact for congruent ads when the reader was looking for information on the website.

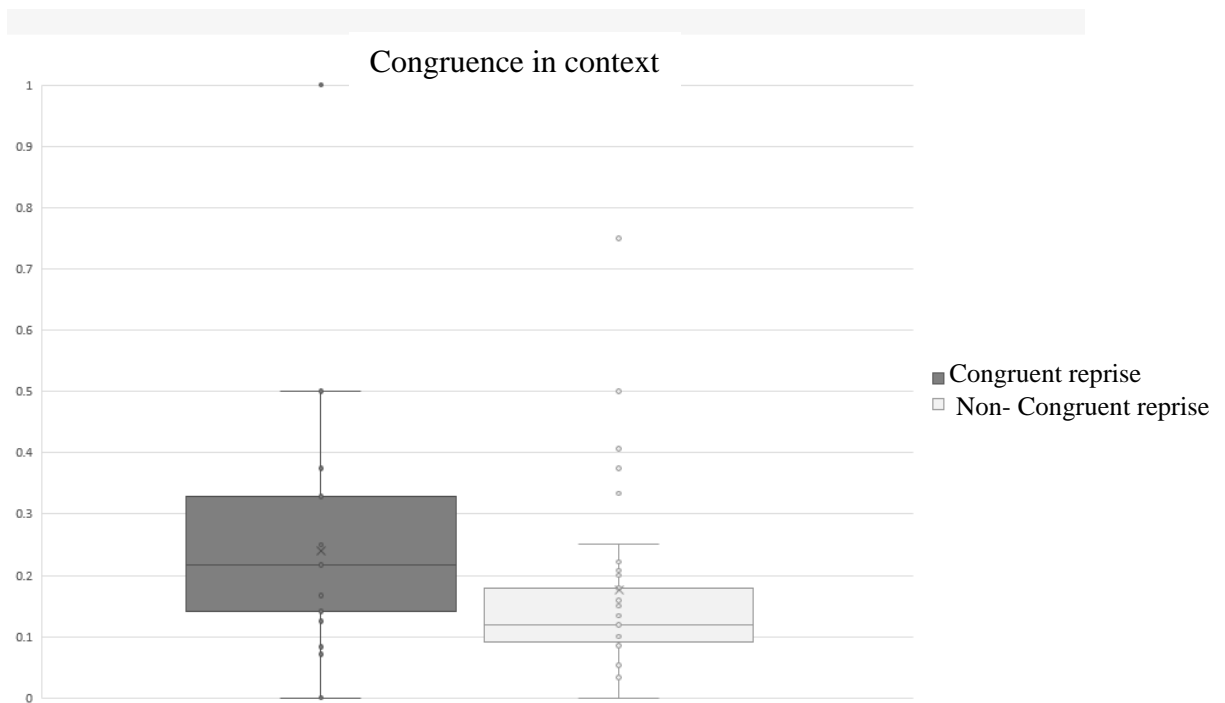


Figure - Box Plot of the effect of context congruence on viewer permanence time watching the commercial  
 (Source: own elaboration, 2019).

In figure below, the percentage of visualization for each commercial break is presented. It is observed that there is a reduction in the percentage of viewers who watch in all percentiles.

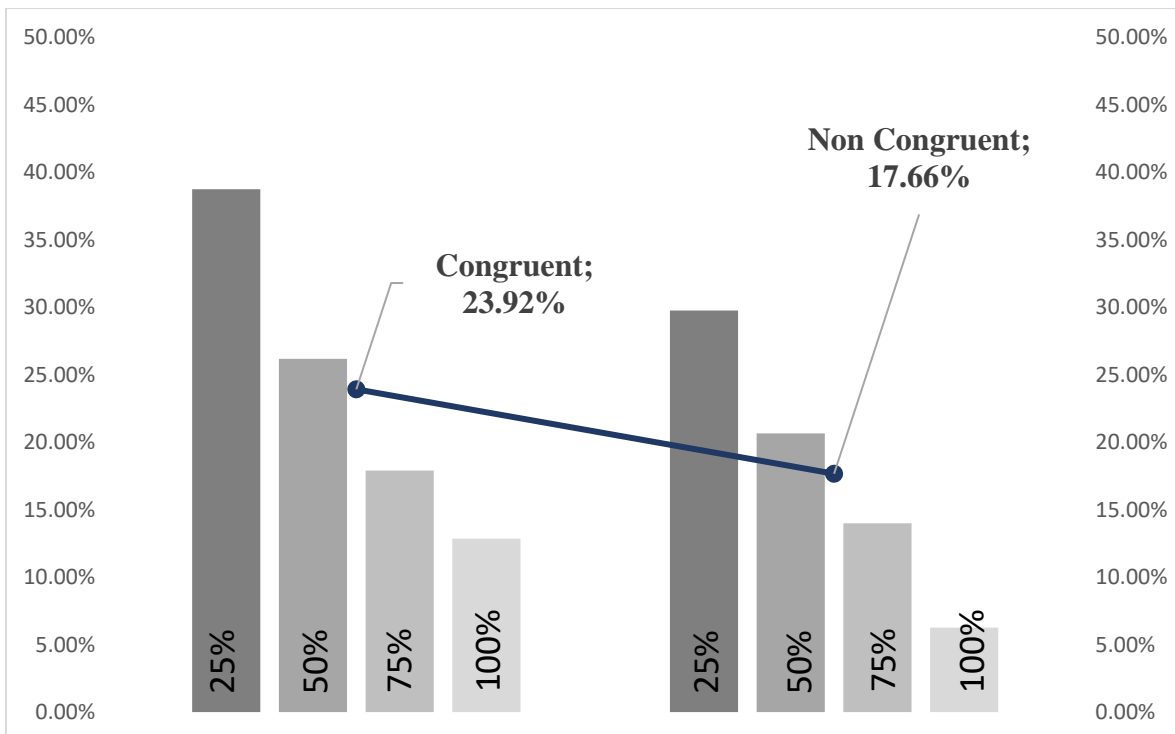




Figure -% of viewers who viewed 25%, 50%, 75%, and 100% and their respective average (Source: own elaboration, 2019).

### Impact of arousal on ad watch time

For the experiment of the impact of arousal on the assisted average commercial time, the *eSports* context was used in the Brazilian championship of *League of Legends* (CBLOL). The characterization of the arousal was made by watching the championship live or reprise, being characterized excited by the spectator watching the championship "live". For this experiment, a sample of 2482 viewers (2149 viewers in the live broadcast and 333 viewers in the reprise) who saw the ad during the broadcasts of the 2<sup>nd</sup> stage of the championship, which took place on June 29<sup>th</sup>, 2019 and its reprise on the following day. The demographic distribution of the survey is 87% male, 78% under 35 and 62% desktop accessed *YouTube*.

In the experiment by Zanjani, Diamond and Chan (2011), it was found that, depending on the activity of the reader of the virtual magazine, there was a different impact on brand recognition. In this experiment, readers who had no information-seeking orientation had higher averages of recognition. In the experiment by Zanjani, Diamond and Chan (2011), the impact of arousal was not measured, but it is similar to the effect observed in the current experiment, where the attention given to the content causes less attention to the ad.

The data analysis showed that there is a statistical difference in the moment the viewer watches the programming - ( $F(1,2480) = 98.29, p < 0.0001$ ). It is noted that there is a significant increase in average time between the two audiences: 54% (see figure below). This result is different from that found by the Belanche, Flavián, and Pérez-Rueda (2017) experiment, which has average viewers excited by 20% higher than the average view of non-excited viewers. However, the result found is in line with that found by the Gangadharbatla (2016) experiment, which presents a 14% increase in attention when it is not excited. As stated earlier, the difference found for the study by Belanche, Flavián and Pérez-Rueda (2017) is due to the fact that the measured arousal was ad in context, and in the case of the Gangadharbatla (2016) experiment, despite to be in a gaming environment, it was from the context of attention to the commercials inserted.

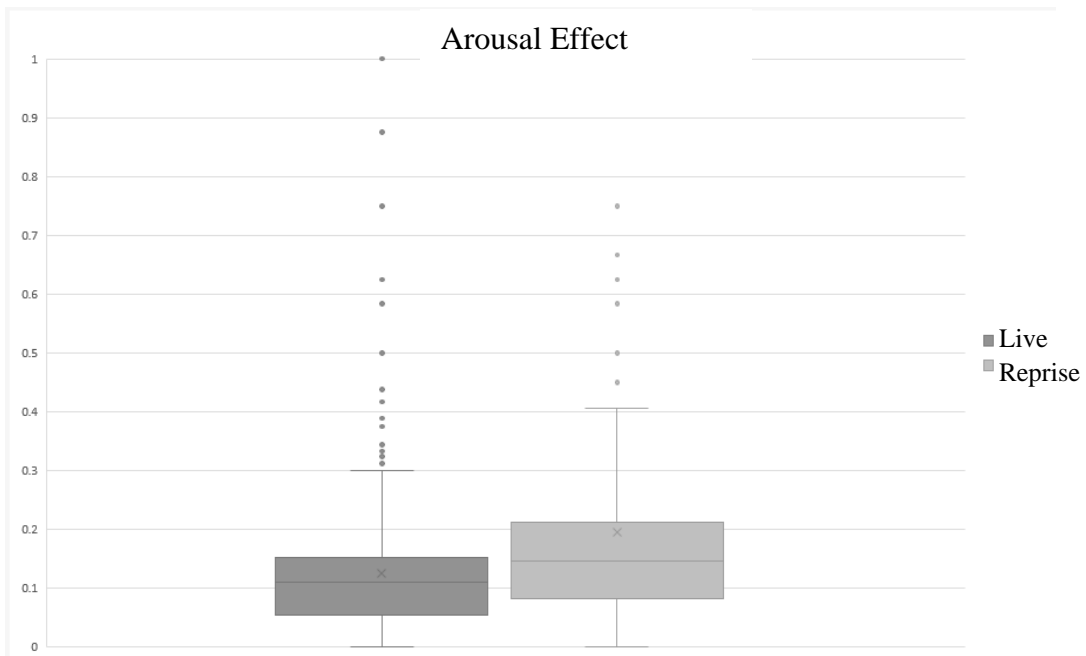


Figure - Box Plot of the effect of the viewer's arousal in their time spent watching ads (Source: own elaboration, 2019).

In figure below, the percentage of visualization for each commercial break is presented. It is observed that there is an increase in the percentage of viewers watching in all percentiles.

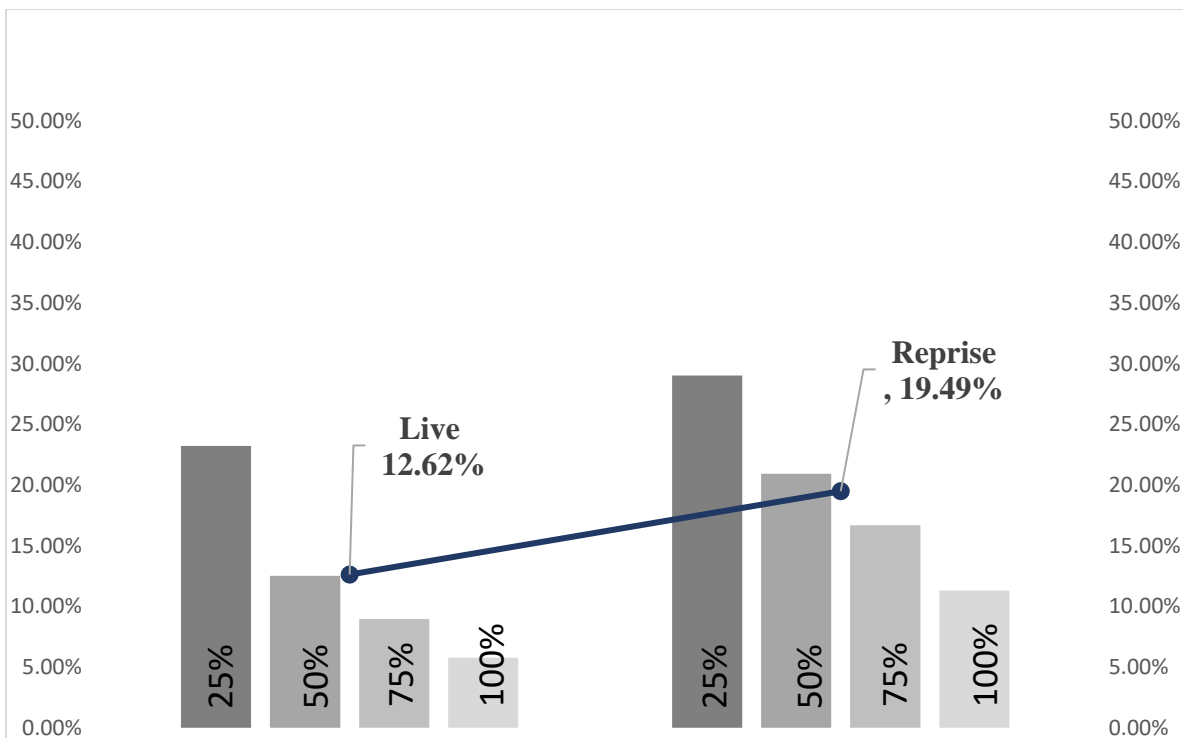


Figure - % of viewers who viewed 25%, 50%, 75%, and 100% and their respective average (Source: Own elaboration, 2019).

## DISCUSSION AND CONCLUSIONS

The consistent and high audience growth of the newly created digital video streaming platforms such as *YouTube* (which in its early days shared the viewers' attention with traditional platforms, but which in many cases now replaces them) has led to interest in the advertising market in order to keep up with this trend, and is gradually increasing its participation in this sector (PWC, 2017).

It's not just the advertising market that is interested in these new platforms for watching content and advertising. Universities and researchers are publishing new experiments and studies reactivating theses defended decades ago. In the meta-analysis published by King, Nyilasy and Reid (2018), an evolution of studies over the decades is presented, and a disparity in results from these analyzed studies is also shown, and a gap regarding to field experiments and electronic gaming environment was noted. In an article published by Stipp (2018), there is a call for new experiments to be done in this area.

Thus, the aim of this paper was to conduct a field experiment to measure the impact of context and product congruence, and arousal on commercial interest (captured via ad viewing time) in the context of eSports streaming on content syndication platforms (ex. *YouTube*). The advent of new platforms has encouraged new experiments, either to validate theses in a new environment, or even by the possibility of field experiments. Although these platforms allow these experiments to be performed, there are still many limitations to extrapolating the conclusions and deepening the experiment.

The methodology used for the field experiment was to serve on the *YouTube* platform selected ads through a pre-test (congruent with context, incongruent with context, congruent product and incongruent product). With the airing of these commercial and the choice of the environments in which they would be broadcast (2<sup>nd</sup> stage of the Brazilian *League of Legends* championship, Copa America soccer semifinal with match played between Brazil and Argentina and a game narrated by a well-known gamer) evaluate the impact of these commercials on environments and make comparisons between them.

The analysis of the results showed a significant effect of product congruence on ad viewing time, which reinforces the findings of the experiment conducted by Belanche, Flavián and Pérez-Rueda (2017). The impact of product congruence on viewer spend time watching the commercial is 42% higher.

Regarding context congruence, the experiment showed that commercials that have context congruence achieve an average result 35% higher than non-congruent commercials. As stated earlier, the previous experiment he studied on this subject did not take time measurements and could not draw conclusions about the impacts of congruence on the viewer's attitude towards brand or commercial acceptance. (Belanche et al., 2017)

Finally, a last experiment was performed to measure the impact of the arousal in relation to the viewer's time watching the commercial. The study showed that the viewer who is excited watches the commercial for less time compared to the least excited viewer, which shows less interest on it. Those who watched the broadcast live were considered as excited viewers and those who watched it the next day less excited. This result differs from that evaluated in the studies published by Belanche, Flavián and Pérez Rueda (2017), however, there is a clear differentiation between the two studies. While in the present study the viewer's arousal was with the programs watched (championship), the article by Belanche, Flavián and Pérez Rueda (2017) was of the commercial (downhill skiing).

Regarding the context of congruence, the experiment concluded that there is a significant impact on the viewer's time spent for congruent commercials.

As theoretical contributions of this work, we have the overview presented about the context of *eSports* and platforms for serving this content. It is also a contribution to the use of digital platforms in the experiments that, being relatively new, especially in the transmission/sharing of videos, were still little used in the experiments, but which are effective for data analysis.

In addition, we have conducted a field experiment to measure consumer behavior. Most studies published in the past were of laboratory experiments that allow greater control and economic viability, but may have a bias in the sample selection and behavior analyzed, different from that presented in reality, because it is induced in the case of the laboratory experiment.

In any case, results can be obtained that reinforce those obtained in previously published laboratory experiments, such as Belanche, Flavian and Pérez-Rueda (2017) for product congruence, Zanjani, Diamond and Chan (2011) for context congruence and Gangadharbatla. (2016) for arousal.

From a practical point of view, experiments show that companies and marketing professionals must be aware of the context in which their commercials are inserted, as well as measure the cost and impact of customizing or contextualizing it for that context in which they wish to publish the ad. The context congruence experiment can be an argument for companies to invest in this contextualization and measure the difference in business impact.

Similarly, with the product congruence experiment, the work contributes to the exposure of different interests given to commercials by viewers when served to populations watching different content. Which may also support the search for a niche suitable for commercials.

Finally, we contribute by measuring the influence of the viewer's arousal on the interest given to it, which may also be useful in choosing the right exposure environment for an ad.

In other words, as a managerial contribution, marketing professionals should take into account the effects of context and product congruence, as well as the viewer's arousal when evaluating the results of a campaign.

Another managerial contribution is the understanding of this dynamic that occurs with the use of digital platforms to measure interest given to the ads served in the various types of content.

Although a field experiment was used, it was performed on only a few broadcasts, meaning that the public may have a different arousal level than that found in a usual broadcast. In future studies, data should be collected from multiple championships and not just one. Furthermore, not necessarily the congruences identified in the *eSports* context can be replicated to other digital contexts. Therefore, future research on digital media congruence impact may include another context to increase the robustness of the results of this study.

Although we assume that context refers to the content in which the commercial is inserted, there are several other factors that can also be considered as context, which were not considered in the analysis. This is the case, for example, of the platform on which the media is watched, the viewer's mood or fatigue, or even the impact of previous commercials showed or the repetition of it to the same user, which may result in reinforcement or become uncomfortable. Future studies may include other context-related aspects.

The focus of the study was to assess the impact of the commercial context congruence on purchase intent and brand or product memory, but there are other factors that can further leverage results. It is an example of the essence of the brand, the creativity of the advertising, the timing of its showed and the audience that is watching (Bacon, 2017). Another limitation is that the experiments were done in only one context (*sports - eSports* and Soccer), and it is expected that there will be variations between the contexts. Although we understand that there is some possibility of generalization of this study, one should study other contexts and understand the differences in the results.

Also, as a suggestion for future studies and a field that will still be well explored in the near future, is the creation of commercials using artificial intelligence. With the field maturity, experiments like the one done in this study, it will be possible to create different commercials for different contexts and put them to the test, measuring their efficiencies in a programmed way.

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