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MOVING BRANDS
A Search Routine Study on Animated Logos

Porto Alegre

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Dissertação de Mestrado apresentada ao Programa de Pós-Graduação em Administração da Universidade Federal do Rio Grande do Sul, como requisito parcial à obtenção do grau de Mestre em Administração.

Orientador: Prof. Dr. Walter Meucci Nique

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Faça a sua arte. Faça aquilo que só você pode fazer. O impulso, no começo, é copiar. E isso não é ruim. Muitos de nós só encontram a própria voz depois de soar como várias outras pessoas. Mas a única coisa que só você e mais ninguém tem é você. Sua voz, sua mente, sua história, sua visão. Então escreva e desenhe e construa e toque e dance e viva como só você pode.

-Neil Gaiman

RESUMO

Este trabalho buscou compreender a rotina de busca promovida, frente ao consumidor, pelo uso de marcas em movimento, por logos animados, dentro de ambientes online como websites, sites de compra e redes sociais. Foi realizado um experimento com 50 pessoas através do uso de *eye-tracking* (rastreamento ocular) em que buscou-se compreender o comportamento da atenção de cada pessoa dentro destes ambientes online. Este trabalho analisa os meios digitais, em crescimento, frente ao uso de marcas animadas, que é um assunto que ainda está evoluindo e ganhando importância e notoriedade. Outro ponto de relevância é o levantamento de dados buscando uma aproximação com a realidade tanto nos estímulos, quanto nos dados analisados, graças à ferramenta usada na coleta. Foi encontrado que os logos ajudam a promover essa rotina de busca, sendo um dos primeiros pontos de fixação, bem como atraindo marginalmente mais tempo de atenção, medido através de fixações. No entanto, este efeito só se comprovou em alguns casos, o que mostrou que o meio, bem como características demográficas e comportamentais, pode influenciar na rotina de busca do consumidor, seja ela mais exploratória e sem padrões, quando o meio é menos conhecido ou o consumidor tem um papel menos ativo ou interativo, ou seja quando é mais direcionada para objetivos, quando ele conhece os meios e já possui uma predisposição a seguir uma rotina pré-determinada baseada em vivências e experiências. Além de contribuir para as teorias rotina de buscas e de atenção dentro de uma lógica de comportamento, esta pesquisa também ajuda a construir um corpo de estudos relacionados a logos animados. Estes entendimentos podem ser úteis para empresas que buscam melhorar sua presença online e otimizar seus esforços de marca.

Palavras-Chave: Rotina de busca, marcas em movimento, atenção, comportamento do consumidor

ABSTRACT

This work sought to understand the search routine promoted, concerning the consumer, by the use of moving brands, animated logos, in online environments such as websites, e-commerce and social networks. An experiment was conducted with 50 people through the use of eye-tracking in order to understand the behavior of each person's attention within these online environments. This work analyzes the growing digital media, facing the use of animated brands, which is a subject that is still evolving and will gain importance and notoriety. Another point of relevance is the gathering of data in the search for an approximation with reality, both regarding the stimuli and the data analyzed, thanks to the tool used in the data collection. It was found that logos help to promote this search routine by being one of the first fixation points as well as attracting marginally more attention, measured through fixations. However, this effect has only been proven in some cases, which showed that the medium, as well as demographic and behavioral characteristics, can influence the consumer search routine, be it more exploratory and without patterns, when the medium is less known, or the consumer has a less active or interactive role, or be it when he is more goal-directed, when he knows the means to follow and already has a predisposition to seek a predetermined routine based on experiences and experiences. In addition to contributing to the search routine theory and attention theory within a logic of behavior, this research also helps to build a body of studies related to animated logos. These understandings can be useful for companies looking to improve their online presence and optimize their brand efforts.

Keywords: Routine search, moving brands, attention, consumer behavior

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1. INTRODUCTION

The internet is becoming increasingly a ubiquitous marketplace that creates a movement on itself, with ventures, ideas, professionals and research going digital. With this movement towards the world wide web as a source of information and a channel for communication (between consumers and companies also) it is essential to understand how people view and search for information online (PAN *et al.*, 2004).

In this context of online information and content, it is important to understand how consumers create a search routine that can be affected by different stimulus, signs and objects in the digital environment. The search routine is related to the search process for visual information that is acquired through exploration and attention of a give scene (DRÈZE; HUSSHERR, 2003; REUTSKAJA *et al.*, 2011), which might be more free and exploratory or more goal-directed and rooted in a predetermined internal process that evolves with the experience of the person in that routine (JANISZEWSKI, 1998).

One aspect of digital media that can be used to comprehend this phenomenon of the search routine are the branding efforts in digital media, more specifically a new domain of marketing: the visual animated brand elements (BRASEL; HAGTVEDT, 2016). With the importance that brands have to marketing, being core elements to many organizations it is imperative for marketing academics and professionals to understand this sort of features, as well as how to enhance them, boosting its competitiveness and engaging customers in the digital era (GUIDO *et al.*, 2016; LOVETT; PERES; SHACHAR, 2014).

One of the main elements for a brand is its logo. The logos are key features of branding efforts, being one of the first impressions companies in general can make to the public, whichever type it is, be it through their websites, business cards, the façade of the business or any other point of connection between company and the different publics (BRASEL; HAGTVEDT, 2016; LUPTON, 2006).

It is important to take into consideration that merely the word “logo” is a general way of treating with these features of branding, since there can be many ways to portray them, especially in multimedia contexts (NOLLER; MAGALON, 2016). One of these ways to display logos, that is relatively new, is through animation. Animated logos are “those logos that actually move and which consumers can only see through a technological medium (*e.g.*, a computer or a mobile device screen)” (GUIDO *et al.*, 2016, p. 2).

Traditional print media is gradually becoming something of the past, as digital media takes over as the main channel of communication and the attention of the consumers are gradually gearing towards mobile devices, such as smartphones and tablets, and towards laptops and computers in general (SILVIO, 2010), *i.e.*, attention is moving towards screens as opposed to other visual medias. This presents an opportunity since the “form of logos remain constant while the whole visual system environment keep changing” (CHEN; HAN, 2013, p. 1783).

According to Kim and Lakshmanan (2015, p. 107) “kinetic property may be easily incorporated in various online multimedia platforms such as social media and mobile applications by virtue of its simplicity”. This changes the landscape of digital media and mediums, inviting different players to start animating and to marketing academics and businessmen start understanding what animation means for businesses and what results they might derive from it.

Given the large use of internet and multimedia by companies to broaden reach and market share, “it is not surprising that improving users’ web experiences has become a major theme in industry research labs” (DJAMASBI; SIEGEL; TULLIS, 2010, p. 307). With such a big market online, it is vital that marketing understands this media. Due to the increased time people spend looking at interactive screens, which stems from the fast growth of mobile technologies, “animated logos may become strategic elements in a new mobile marketing environment characterized by overabundance of stimuli” (GUIDO *et al.*, 2016, p. 6055). Animated logos are one of many branding efforts that can make a difference in the digital era if companies wish to stay up to date with technology and with their customers.

Brand logos developed through the evolution of high quality printing and through production with the use of color (taking cinema or photography as examples, both of which started black and white and evolved into color medias). Now, it can evolve even further with screen-based medias, which allows several new ways of interaction (BRASEL; HAGTVEDT, 2016). Features of animations such as movement trajectories and directions can affect the preferences of consumers regarding animated logos (GUIDO *et al.*, 2016) and, therefore, should be studied in the light of marketing and of consumers behavior.

Although there is an emerging body of research in visually processed properties of marketing communication (*e.g.* PIETERS; WEDEL; BATRA, 2010), little is known concerning dynamic elements in new media settings and how they shape the perception of consumers, especially given that “motion graphics, kinetic typography, and infographics have become increasingly popular in the current multimedia environment” (KIM; LAKSHMANAN, 2015, p. 94). Thus, it is an opportunity and a gap in the marketing literature.

Hagtvedt (2011, p. 86) already pointed to the influence logos have on consumer perceptions of the firm and to the fact that it is an important matter, “not only because it represents a

gap in the literature and in the understanding of how consumers interpret visual stimuli but also because of the vast amount of resources that firms expend on logos as a marketing tool". In addition to that, "research on 'animated logos' [...] remains scarce" (GUIDO *et al.*, 2016, p. 2).

Research on Internet Marketing has begun exploring the effects animation have on advertising (primarily focusing on motion in online banners), but "there is little or no research on the effects arising from more focused efforts such as brand logo animation" (BRASEL; HAGTVEDT, 2016, p. 639). Also due to the growth of the digital world and the ubiquity of the internet, there are "fertile grounds for the diffusion of animated logos" (GUIDO *et al.*, 2016, p. 6049).

In accordance with that, the marketing literature has "a growing need for research on the effects of logo animation", concurring with Brasel and Hagtvedt (2016, p. 640) since there is a scarcity of information on how the consumers process animated logos and how animation might influence the search routine of the customers (GUIDO *et al.*, 2016). According to Gentry (2007, p. 64), eye-tracking machines can similarly help decide on the impact of unique factors to many electronic forms of media.

Kim and Lakshmanan (2015) studied how kinetic property can shape perceptions of novelty, but they also point that their measures did not capture directly and explicitly how consumers visually process these properties of motion. They suggest that eye-tracking technology could be important to illuminate and extend their research.

With all of this in mind, this research aims to understand how animated logos help to promote a search routine online. That objective is achieved through: the investigation of animated logos as a first aspect of the search routine, the analysis of eye fixations on animated logos and their surroundings in online environments, and the examination of scan paths as search routines. Evidence of such routine comes from the notion that "images and graphics affect visual hierarchy because viewers tend to process these first" (DJAMASBI *et al.*, 2010, p. 308), for example, among other cues and reasons.

This research will address its objectives through the eye-tracking technology and study, by manipulating visual brand cues, through a series of motion graphics, in hypothetical brands in order to answer the questions proposed. With such study, it will be possible to understand how the attention of the consumer works in this context of animated logos, since the measurements are not self-reported, making the results more reliable. This method also helps filling the gap left by many experiments that do not use eye-tracking, ensuring that the visual attention will be accurately measured. This equipment was also chosen due to the fact that it brings, bringing "opportunities to conduct this type of Human-Computer Interaction (HCI) study with direct applications for marketing" (GENTRY, 2007, p. 60).

The structure of this research project, as a way to build a strong narrative on the understanding of the effects of logo animation is as follows: theoretical background regarding the main constructs for this study (moving brands, logos and animation; attention in the context of consumer behavior and search routine process), the method and how the data was collected for the study, results based on each research question and, in the end, a few final considerations, research limitations and future researches.

According to Guido *et al.* (2016, p. 6049), “research on logos movement is still in its infancy”. This shows that the animations in logos can have different effects on the consumers and shows that these effects are not yet entirely understood by companies and by researchers. The understanding of such trends is of key importance to firms and it’s critical that marketing scholars and managers understand their impact on viewers (VAN DER LANS *et al.*, 2009).

The study of logos is of major importance since they (1) are usually discrete objects and easily animated, (2) have not received the proper attention in the literature of marketing, and (3) are one of the cornerstones to efforts of branding and to the identity of the brand (BRASEL; HAGTVEDT, 2016; LUPTON, 2006). It is also important to note that, even with widespread use and importance, some logos perform poorly, which happens due to a bad selection of the logo (HENDERSON; COTE, 1998)

2. THEORETICAL BACKGROUND

As a way to comprehend the important matters regarding this research, it is imperative to build the knowledge on a strong theoretical foundation, which is explained in this section. The narrative for such is constructed as follows: (1) Moving Brands, relying on literature regarding branding, logos and animation; (2) Attention in the context of consumer behavior; and (3) Search routine behavior.

2.1. Moving Brands and the Animation of Logos

Brands are one of marketing's most valuable resources and also one of its core concepts, being studied for more than 70 years without losing its relevance for organizations and for research purposes (LOVETT; PERES; SHACHAR, 2014). As the brand is a central notion to marketing, logos are a central concept to brands, being elements of the visual identity of organizations, expressing its values and having strategic importance in seizing attention, fostering loyalty and consistency and creating solid vivid identities for brands (GUIDO *et al.*, 2016; HENDERSON; COTE, 1998; MICELI *et al.*, 2014). A logo and its features - such as design or movement -, according to Guido *et al.* (2016), can enclose the mission and values of a given company and also present symbolic meaning through its graphical elements, like metaphorical implications or future performance, for example. A good logo can be an essential cue for the brand and it is very important since it is one of the first things in the visual hierarchy (DJAMASBI *et al.*, 2010).

The designing of logos and its evolution are influenced and promoted by integrated social factors, such as culture, aesthetics and technologies, specially the development of production technologies (CHEN; HAN, 2013). With the digital era, Huang *et al.* (2014) argue that the modern logo has to take in consideration three aspects to follow the development tendencies: the transition from a plane image to a three-dimensional context, the shift from a single fixed pattern into the diverse and changing patterns of modern visual graphics and the change from static to multimedia dynamic visuals. Mobile technology, networks and social media brought new challenges to traditional media, requiring that new forms of communication, such as brands visual identities, adapt to this new system (HUANG; WANG; CHEN; BAO; ZHAO, 2014). Therefore, moving brands emerge: logos (and the visual identity systems) that

encompass typeface elements, diverse graphics and movement or animation (HAGTVEDT, 2011).

Moving brands, in the form of dynamic logos (as opposed to traditional forms of designing visual identities), are a product of the digital era and, hence, must incorporate new visual languages, integrating graphics, motion graphics and animation (HENDERSON; COTE, 1998). In addition, the Global Mobile Trends Report points that the strive to increase brand relevance and visually-compelling ad formats are not only trends, but key elements in great advertising campaigns, which is strongly connected with the use of moving brands (MOBILE MARKETING ASSOCIATION; KANTAR MILLWARD BROWN, 2016).

According to Brasel and Hagtvedt (2016), animation in logos can bring good outcomes, if they are better explored in the market by the organizations. Guido *et al.* (2016, p. 6055) believe that “marketers should not overlook the metaphorical associations that the design of a logo may elicit since the animation [. . .] becomes a distinctive feature and the chance to pictorially express the meaning of the company”. Therefore, animation, through motion and design changes, might help bring meaning to the communication efforts in a branding context, in various touchpoints with the consumer.

There are advantages to the use of animated logos since they add a new dimension to the visual stimulus - through the movement - and they are more adjustable to the system environment, being less fixated in a single form. Animated logos also display an image that is more vivid of the brand and, therefore, they can establish a more profound brand image as well as a more “showy” image, catching the attention of the consumer (CHEN; HAN, 2013).

To date, research on visual movement considered mostly print advertising (VAN ROMPAY; DE VRIES, BONTEKOE; TANJA-DIJKSTRA, 2012; VAN ROMPAY; FRANSEN; BORGELINK, 2014) and static iconography (CIAN *et al.*, 2014, 2015) by analyzing suggested movements, not animated logos. That is the case since static logos are more common and more rooted in the mind of the consumers, having their basis on the era that paper media ruled the visual spectrum of daily life (CHEN; HAN, 2013) be it on magazines, newspapers or outdoors, to name a few. These are medias that have been declining, with dramatic losses in revenue and profitability, due to the digital media and social media evolution, success and penetration (PATTABHIRAMAIAH; SRIRAM; SRIDHAR, 2017).

Prior research says that motion graphics serves as cues, interpreted by the consumer to better understand the personality of the brand, contributing to a sense of dynamism of the company and that, if matched with other traits of the brand and the market, can derive a favorable influence on consumer behavior (BRASEL; HAGTVEDT, 2016). Moving brands,

therefore, rely on the concepts of logos and animation, better explained in the following sections.

2.1.1. Logos and the visual identity for companies

Logos are “irreplaceable communicators” amid brands to connect with consumers (CHEN; HAN, 2013, p. 1783), appearing on many different mediums, such as TV ads, print media, reports, business cards, packaging and product design, to name a few, which makes them pervasive and abundant in the marketplace, where an average consumer might encounter a multitude of them at any given time (HAGTVEDT, 2011; HENDERSON; COTE, 1998). Such flood of visual stimuli instigates a better understanding of logos and how they can catch the attention of consumers in different medias and how they relate to other objects, texts and signs in such medias.

Logos are one of the first things noted by people, which suggests that they play an important role in the formation of a first impression (DJAMASBI *et al.*, 2010) as well as hint that they might be a first fixation point to be looked for in a given environment, a starting point for the attention behavior of the consumer. The corporation identity system of any institution (which encapsulates the logo as well) should show strength at all times in the visual system, maximizing the influential effect on the communication (CHEN; HAN, 2013).

A good logo should be recognizable (correctly recognized and recalled), have subjective familiarity (evoke familiar meanings or be similar to symbols that are well-known), prompt consensual meaning throughout audiences (communicate one message clearly across viewers) and elicit positive affective reactions (HENDERSON; COTE, 1998). In summary, the core function of the logo is to “promote and expand corporation identity, help communication, and finally achieve the ideal optimal commercial effect, communication effect and spreading influence” (CHEN; HAN, 2013, p. 1784). Hence, logos have two basic dimensions: an internal one, regarding a conceptual meaning that needs to be coherent with other aspects of the company (a sign system); and an external one that has impact on the consumer in the attention he pays to the stimulus, his attitudes and his behavior (ZAKIA; NADIN, 1987).

Different aspects of logos can introduce different perceptions in the consumer’s mind and promote distinctive behaviors (HAGTVEDT, 2011). It is important that they create such meaning since they are elements of design and should be able to communicate with consumers throughout various mediums without depending on verbal supporting information (VAN DER LANS *et al.*, 2009). Brand cues such as logo design should be intelligible and suitable with the

expectations the consumer has and should have a fit with the setting in which it is presented (BRASEL; HAGTVEDT, 2016). One possible cue that has gained strength in the digital medium is animation.

2.1.2. Animation and motion graphics

Animation can be defined as “‘breathing life into’ a thing” (SILVIO, 2010, p. 425) and encompass approaches from psychology, anthropology and arts. Through animation it is possible to make something that is immaterial or that would be displayed in a still manner become lifelike, to make it seem alive. Therefore, it can bring a new set of perceptions and effects on the mind of the consumers regarding visual signs. Motion-related properties can lead to perceptions of liveliness in visual stimuli (KIM; LAKSHMANAN, 2015), because such motion is typically limited to agents that can independently control their own movements, without having to rely on exterior forces (TREMOULET; FELDMAN, 2000).

In the context of marketing and communications, according to Guido *et al.* (2016, p. 6055), “animation can be considered as a strategic feature of mobile and web advertising”. In order to be used strategically, Brasel and Hagtvedt (2016) believe that it is important to consider the fit with the firm and the consistency between brand cues and the consumers. If a message is to be correctly and consistently sent to various audiences, it has to be internally coherent with brand as well as the medium.

Animation suggests a “perception of ‘agency’, that is, an entity’s capacity to take self-directed action, to move in a lifelike fashion” (GUIDO *et al.*, 2016, p. 6049). Such agency, according to Brasel and Hagtvedt (2016), produce different effects in people’s perceptions than static images. Visual images can communicate ideas that go beyond what is literally depicted. Through stylistic properties (*i.e.* diverse aspects that have effect on how visuals are displayed, such as animation) images can convey semantically meaningful concepts to the public (PERACCHIO; MEYERS-LEVY, 2005). For example, Guido *et al.* (2016) found that upward movements are preferred in comparison to downward movements and that when the logos are associated with high innovative companies, consumers prefer the ones that move in an up-right path over up-left directions due to different metaphorical meaning associated with these logos.

The development of technology has made animation “become a ubiquitous part of daily life” (SILVIO, 2010, p. 422) in all the screens that surround the lives of many people, be it on computers, cellphones, cinemas, shopping malls, airports. Animations and motion graphics are

now common in the daily life of many people, in many places and in various forms. It is also cheaper and easier to generate animated content as the multimedia environment become more diverse, with technologies such as Flash and JavaScript evolving (KRASNER, 2008).

Through the understanding of moving brands as logos that encompass animation in a digital setting, some important questions emerge given the evolution and growth of online media. Achieving a greater comprehension of this is a way to gain advantages for the brand in different aspects of the communication with its consumers. Therefore, it is important to understand if these signs are seen as the first touchpoint with consumers and to compare them with regular visual icons. Thus, the first research question of this study is divided in two: *(RQ1.1) Are moving brands the starting point in the visual hierarchy of brand efforts?* And *(RQ1.2) Is there a difference between moving brands and traditional brands as a first fixation point?* In order to understand this, it is also important to discuss attention in the consumer behavior context.

2.2. Attention in Consumer Behavior

The visual attention phenomenon has been object of study for over a century and can be defined, in general, as a way to focus mental aptitudes on a selected sensory input in a way that allows the mind to successfully process some stimulus of interest (DUCHOWSKI, 2007). There is theoretical ground to believe that even minor changes in visual stimuli can be detected by the mind, before it reaches the level in which it would be consciously reported (SHAPIRO; NIELSEN, 2013). Visual information, as in logos and animated logos, can elicit affect even prior to cognitive processing (LUTZ; LUTZ, 1977). In animation, the images move and, therefore, change in some way, in a strong or mild fashion, but change nonetheless. Attention is, consequently, a behavior and not a belief or an opinion and needs to be understood as such.

Information that is visual “comprises a large portion of what we encounter on a daily basis, and visual input is a key component of a large number of our behaviors” (ASHBY *et al.*, 2016, p. 96). According to Mitroff and Simons (2002), when some visual representation change, it produces a change signal that builds gradually in strength through repeated viewings. When this signal surpasses a threshold, the attention shifts instantly to the locations of the changes. Therefore, changes can draw attention spontaneously. Animations plays an important role attracting attention online (FASOLO; MISURACA; MCCLELLAND; CARDACI, 2006), encourages favorable attitudes towards firms (BRASEL; HAGTVEDT, 2016), shape novelty

perceptions through inferences of product atypicality and impressions of liveliness (KIM; LAKSHMANAN, 2015).

Favorable attitudes can be achieved through increased attention, according to prior research (CHANDON; HUTCHINSON; BRADLOW; YOUNG, 2009). Brasel and Hagtvedt (2016) point that the animation of logos have a positive influence on attitudes toward brands, which is more complex than just an increased attention, relying on the fit between animation and other information regarding the brand or the firm. This is aligned with prior marketing research that highlights favorable perceptions from the consumer (like quality or authenticity) tied to the consistency of the cues in a brand (MIYAZAKI; GREWAL; GOODSTEIN, 2005; SPIGGLE; NGUYEN; CARAVELLA, 2012). It is important to notice that the constructs of attention and recall are distinct (ARIBARG; PIETERS; WEDEL, 2010; CHANDON *et al.*, 2009; CHANDON; HUTCHINSON; BRADLOW; YOUNG, 2006), since one can notice some stimulus with consideration but without further remembrance or recollection of meaning.

Brasel and Hagtvedt (2016) also found that favorable influence on attitudes emerged from logo animations because of a fluency between said animation and expectations of dynamism (as opposed to stability) from a company or from some medium or specific media. Therefore, dynamic companies, in dynamic markets can derive better attitudes from their consumers with logo animations and other brand cues. Motion is as a fundamental characteristic in the context of animated ads and “the way consumers process it can have profound consequences on their cognitions and inferences about products” (KIM; LAKSHMANAN, 2015, p. 95). Moving brands can be seen as aligned with digital medias since it is place that allows that, in opposition to traditional channels and communication vehicles.

Animated advertising generates greater recall and more favorable attitudes concerning banners and has superior attention-grabbing capabilities (YOO; KIM; STOUT, 2004). Abrams and Christ (2003) credit attention grabbing properties to the onset of motion. It is comprehensible, then, that animation is a complex subject and that it may instill many results if applied one way or another. It can shape attitudes, for example, in different ways even in similar contexts.

In order to deliver consistent brand experiences, it is important that companies create a coherent view for the customer across many touchpoints and that they concentrate on the experiences they want to deliver to the customers (KANTAR MILLWARD BROWN, 2016). Success depends more on consistent experiences throughout touchpoints, than on the number of touchpoints. Brand impact depends also on media synergy, now more than ever, with so many possible ways to connect with consumers and the attention payed to different or similar stimulus must be understood and managed in order to get, not only optimal results, but also

results that are coherent with both internal and external expectations. According to Hagtvedt (2011, p. 86), “both marketing textbooks and common sense suggest obvious potential benefits of promoting an unambiguous corporate and brand image”, which is related to how we see and perceive brand cues.

Moving brands, as seen, have properties that differentiate them from other, more traditional, branding efforts in light of the attention literature. It is conceivable then that they catch more attention than other brands, thus, the second research question is: *(RQ2) Are moving brands more prone to promote attention than traditional brands?* Connecting the research question proposed so far, it is possible to consider that the moving brands will promote a search routine for the consumers, so that is investigated in the next section.

2.3. Search Routine Behavior

The world is increasingly connected to the digital medium (OFCOM, 2016), with digital media taking a big role in the visual communication on the day-to-day life and several stimulus fighting for the attention of the consumers. Thus, search behavior is an important matter in consumer behavior research, especially in online environments, since attention in many web based sites and applications has to be divided among numerous elements (DRÈZE; HUSSHERR, 2003). Unlike traditional media such as television or the radio, where the audience have to look to some determined stimuli – or at least to a group of stimuli predetermined by the advertiser), in online medias there are different places the eye can wander to, different visual cues, such as banners, different hyperlinks and so on.

People are good at optimizing the search process within a seen set of images or objects (REUTSKAJA *et al.*, 2011), which suggests a behavior known or acquired for such visual explorations, some sort of expected search routine. Reutskaja *et al.* (2011) also points out that a few aspects of the search progression are random and others are more conscious, what strengthens the notion that it is important to comprehend how the consumer creates a routine in his or her mind.

The consumer is used (to some extent) to search for information online and can quickly understand objects in a media setting and adjust his attention to what is important or not to him or her (DRÈZE; HUSSHERR, 2003). The search for visual information can be sorted in two types of behavior: goal-directed search, which occurs when the audience uses previously stored

search routines; and exploratory, when the search process lacks previous experience and the consumer's attention wanders with no planned course (JANISZEWSKI, 1998).

It is long known that different sorts of cues can facilitate the direction of attention in the visual field (POSNER; COHEN, 1984), therefore, it is understandable that there would be an attentional attitude towards such cues, promoting some search behavior for information and, consequently, a search routine that can be reinforced by known or unknown objects in a scene. In a web context, on-screen motion can be a key visual cue, which then can be said to shape inferences and higher-level cognitions and judgements (KIM; LAKSHMANAN, 2015; SCHOLL; GAO, 2013; SCHOLL; TREMOULET, 2000). The several cues on a given screen have different signal strengths and interact with one another, creating a path for the visual attention, a routine for the eye to search for information. Townsend and Kahn (2014) used eye-tracking to reveal that individual visual stimuli (as opposed to textual stimuli) can help the processing of assortments as a whole presentation, through a faster scanning of an assortment.

It is also possible that a transient event, such as moving brands in an online environment, catches attention and results in a benefit, but only for a brief moment. However, if the stimulus is deemed as uninformative, the subject will remove his or hers attention from some target location and return to a diffuse attentional state (ABRAMS; CHRIST, 2003).

Marketing guides design in many aspects of product and services. Through marketing, design can have a better fit with the preferences of consumers, making the choice easier for them (ARIELY; BERNS, 2010). Features of a website might be an important aspect in determining the attention scanpath an individual traces with his or her eye, as well as personal characteristics such as gender, for example (PAN *et al.*, 2004).

There is a debate on attention that tries to understand if it simply reflects cognitive processes that result in preference, or if attention can directly have an impact on preference (ASHBY; JOHNSON; KRAJBICH; WEDEL, 2016). The role of attention on the preference for one chosen option is concentrated in the few final seconds of a given choice task (SHIMOJO; SIMION; SHIMOJO; SCHEIER, 2003; SIMION; SHIMOJO, 2006), independent of prior preferences or memory effects.

With all this information in consideration, the Research Question 3 (RQ3): *Can moving brands help promote a search routine for the consumer?* This questions integrates the previous questions and needs some more information to be answered. To find the solution it is important to understand how to assess the data that will bring the knowledge necessary to this present research, taking in consideration all that is already found in the literature. In that sense, Chandon *et al.* (2009, p. 2) believe that "self-reported recall of visual attention is not a valid proxy for actual visual attention to brands", although Gentry (2007, p. 60) says that, "in theory, a

respondent's mental attention may be elsewhere instead of where his visual focus is". This last author points that the person might not be paying attention to what he is looking at or might deliberately be using peripheral vision.

With all this information in mind, it is necessary to decide on a method that can deliver all the information expected regarding the literature investigated. The best way to examine all these features is through a deep understanding of the visual stimuli and how it relates to the human vision, which will be done via eye-tracking technology, as shown in the next section, since "eye-tracking methodologies are powerful research tools that provide a great deal of potential for uncovering and understanding a wide range of phenomena in the field of behavioral decision making" (ASHBY *et al.*, 2016, p. 101).

3. METHOD

To answer the research questions proposed this research will perform an experiment utilizing an *eye-tracking* equipment, tool that can generate information regarding the attention levels of someone through visual stimuli (NOGUEIRA, 2016). This is one tool, among others, used to investigate consumer neuroscience, which combines psychology, economy and neuroscience itself to understand how the brain is affected, physiologically, by marketing strategies and advertising, for example (KHUSHABA *et al.*, 2013).

The eye-tracking investigation is centered upon the notion that “if one may observe where a respondent places his visual attention, one may better understand where the respondent places his mental attention” (GENTRY, 2007, p. 60), *i.e.*, “if we can track someone’s eye movements, we can follow along the path of attention deployed by the observer” (DUCHOWSKI, 2007, p. 3). The method will be explored in this section through the understanding of the eye-tracking technology as a tool to be used, followed by the information on the participants, the procedures undertaken in the research and stimuli used, and then, finally, the measures utilized in the study.

3.1. Eye-Tracking

The study of “eye fixation studies have their historical roots in cognitive research dealing with reading” – dating as far as 1878 (JUST; CARPENTER, 1976, p. 6); such studies found that the eye does not move continuously, but actually move through minor jumps and stops along the lines of text. What is rather new is the tracking of eye movements by video-based machines, that now are cheaper to acquire and do not require “extensive computing power to calculate [...] eye features such as corneal reflections and the pupil center” (GENTRY, 2007, p. 60). Not only that, but another important aspect is that “modern eye-trackers are less intrusive than ever” (GENTRY, 2007, p. 64), which makes the use of this tool easier for the researcher and more reliable in a methodological perspective.

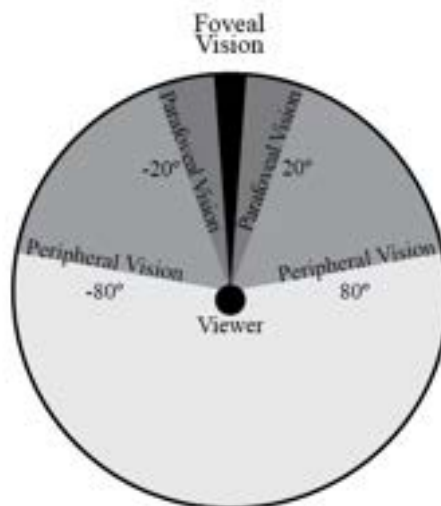
Nowadays, the equipment used in eye-tracking has become less invasive, and “the intrusiveness of eye-tracking methodologies for participants has been greatly reduced” (ASHBY *et al.*, 2016, p. 97), overcoming the need to attach the apparatus to the subject investigated. Since the device functions remotely, there is no need for the user to remove his or her glasses

or contact lenses, which allows for a more natural environment and for the participants to move freely (ATALAY *et al.*, 2012; DJAMASBI *et al.*, 2010).

While the first researches were regarding the role of eye fixations in reading, subsequent studies focused on the mapping of saccades and then fixations (ASHBY *et al.*, 2016; NOGUEIRA, 2016). *Saccades* are high velocity movements the eye globe makes in between fixations (MAIA, 2008), reaching speeds of up to 700 degrees per second. *Fixation* is the name attributed to minor eye movements over some point of interest (GENTRY, 2007; MAIA, 2008) that takes over 300 milliseconds (DJAMASBI *et al.*, 2007, 2008) and accounts for 90% of viewing time (DUCHOWSKI, 2007). Fixations are associated with intense cognitive processing (PAN *et al.*, 2004) and have been considered as a reliable sign of attention (VERTEGAAL; DING, 2002) and they are the brief moments that the eyes are stable and that information can be extracted (ATALAY; BODUR; RASOLOFOARISON, 2012).

Visual processing is limited and delimited by neuro-anatomic properties of the human visual system. When the visual attention is to be redirected, saccades (fast eye movements) reposition a small region of interest, the fovea (GENTRY, 2007). The fovea is centered in the optic axis of the eye and is responsible for the visual perception of details in color and shapes (MAIA, 2008). According to Duchowski (2007, p. 15), “central foveal vision subtends 1-5° (visual angle) allowing fine scrutiny of only a small portion of the entire visual field” as shown in Figure 1.

Figure 1 - Visual Range



Source: Adapted from Maia (2008).

There are two main setbacks with new remote eye-trackers: constant recalibration need and low tolerance to head movements – people can move, but not too much (NOGUEIRA, 2016). According to Atalay *et al.* (2012), participants in the study are free to move their heads in a 30cm X 15cm X 20cm area and in a 60cm distance from the monitor. Even though there

are a couple of setbacks, barriers towards the use of eye-tracking as a tool for research are decreasing and this sort of method is beginning to take an important role as means to understanding the cognitive processes that underlie judgements and decisions (ASHBY *et al.*, 2016).

3.2. Participants

Participants of this study were recruited to participate in a university campus in Brazil, therefore the sampling process was determined by convenience. All participants were volunteers. In the recruitment process, it was only taken in consideration if they had any fluency on surfing the web, be it on websites of companies, social networks, e-commerce. If not, they were thanked for their time and did not even started the investigation process. Such procedure was used in order to obtain a homogeneous sample regarding digital media usage.

The investigation conducted included the participation of 50 volunteers and none of them knew previously what the objective of the study was, they were only asked to sit in front a computer and analyze a few websites (which were screenshots of actual sites or online social networks), thus they knew they were going to see that, but not why they were doing it.

Of the total sample of participants, 48% were males (n=24) and 52% were female (n=26). They were all offered a third option called “other” in respect that not all people identify as a binary gender, but none chose such option, thus it will not be discussed further. Regarding the age of the participants, four intervals were created to represent four different periods of life: Teenagers, under 17 years of age; Young Adults, from 18 to 29 years of age; Adults, from 30 to 59 years of age; and Seniors, up from 60 years of age. Of the four categories, this study had no teenager respondent, 40 respondents in the young adult category (a great majority), nine adults and just one senior. Taking the middle of the intervals this results in an average of 28 years of age (considering 70 years for the senior interval, since it has no upper limit).

All selected participants had normal vision or vision corrected by the use of glasses or contact lenses and no volunteer had to be eliminated for sight impairment, which could cause some mistake in the data collection of the eye-tracking equipment as seen in other studies (LADEIRA; SANTINI; SAMPAIO, 2018). All of the participants recorded more than 80% of gaze samples and no participant had to be excluded of the sample for any reason.

3.3. Procedures and Stimuli

The experiment conducted had a duration of approximately three minutes and 30 seconds on average per voluntary participant. After being invited to participate on the experiment and agreeing to it, participants were sat in front of a 15 inches screen computer with a Tobii Pro X3-120 Eye Tracker connected to it. This equipment uses infrared light (at a frequency of 120 Hertz) to illuminate the eyes of the participants of the study. The infrared light bounces off the eyes of the user and several sensors in the equipment pick them, allowing the software (Tobii Studio Pro 3.4.5) to interpolate the positioning of the eyes (DJAMASBI *et al.*, 2010). As pointed by Atalay *et al.* (2012), the infrared camera records the eye gaze of the participants in an unobtrusive way.

Each participant sat in front of the equipment, that was then calibrated for said participant. Calibration took less than a minute per participant but had to be redone for every new volunteer. The calibration process is a procedure in which the subject watches a red dot move on the center of the screen and its four corners so the software knows how every eye works and how the attention of each participant is placed on the screen (DJAMASBI *et al.*, 2010; MAIA, 2008; TOWNSEND; KAHN, 2014). No participant had to be discarded for calibration problems.

After calibration, the real experiment began. It consisted, in a first moment, of an instruction thanking them for participating in the study, then asking that they only look to the screen and pay attention to it, all the images would appear and change on their own. The time each stimulus was shown was predetermined in order to display similar images for the same duration, so time was not a factor taken in consideration in the analysis of similar images. All volunteers were asked not to look away from the computer screen during the experiment.

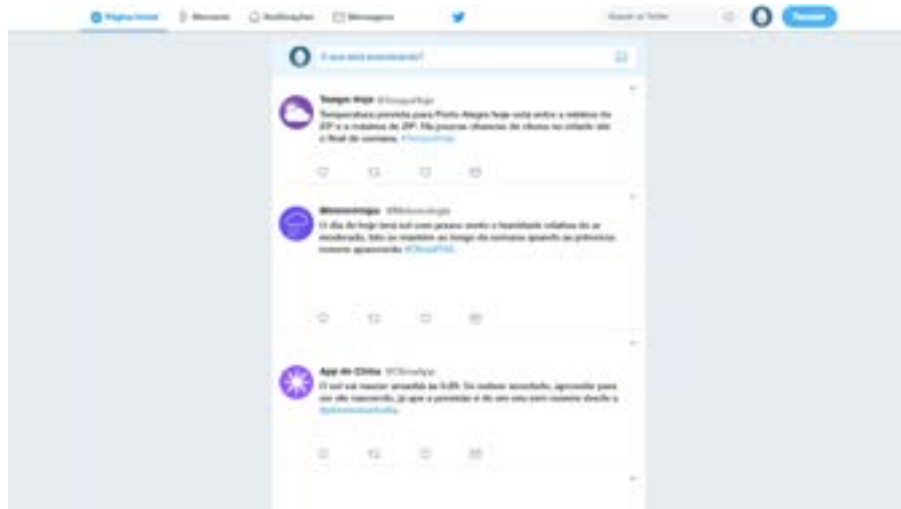
After the instructions, 10 screenshots of websites were shown: one Facebook timeline, two Facebook posts, one Twitter timeline, two Twitter tweets, two e-commerce websites (created by the author) and two company websites with banner ads on top (also created by the author). These were chosen because of the growing popularity of social networks and social media, as well as e-commerce in the past decade (LUAN *et al.*, 2016). The e-commerce and company website were fictitious, to avoid the effect of previous knowledge; the social networks used had to be existent in order to create a real scenario. This study aims to recreate a real natural environment for the participants (GIDLÖF *et al.*, 2013).

The images used on each stimulus were downloaded from stock images websites that provide Creative Commons 0 (CC0) pictures (*i.e.* free for personal or commercial use). Only the social networks layouts are not CC0 or designed by the author. One example of stimulus

used is shown in Figure 2, that portrays a Twitter timeline. All other stimulus used are presented in the appendix of the present study.

After all the stimuli were presented, volunteers were instructed to answer profile questions: age, gender, degree of education and fluency on each sort of online website investigated. This fluency online was measured in a 5-point Likert scale (varying from completely disagree to completely agree).

Figure 2 - Twitter timeline



Source: designed by the author.

Fictitious firms were used in the current research in order to avoid potential confounds tied to existing perceptions of the firms from the perspective of the consumers (HAGTVEDT, 2011). Original logos were chosen as a way to assess the effects caused by the animation and design on the responses, minimizing usage variables effect, as seen in Henderson and Cote (1998). This has a downside of not being able to fully explain how the animation will transfer to better evaluations of brand or company but focusing on the outcomes of the animation itself. All other aspects of the research aimed to recreate a scenario that emulates the real world and real sites navigated by consumers in general.

The software Adobe Illustrator CC 2018 was used to design vector logos for the fictitious brands. The animation was created with the Adobe After Effects CC 2018 software. Websites and simulated social networks were created in Adobe Photoshop CC 2018 via the use of mockups. Animations, vector design logos and webpages were created by the author. Brands were pre-tested in an online survey (N=35; 12 female, 23 male, 0 other; 71% Young Adults). All pages and posts were considered somewhat similar, so there was minimum or no design factor outside of what was planned interfering with the data collection.

According to Djamasbi *et al.* (2010, p. 321), “eye-tracking measures can provide an objective and continuous measure of the user’s reactions through eye movement and gaze”. For this study, it is considered best to use such tool and not ask only what the participants think, since “people cannot (or do not want to) fully explain their preferences when explicitly asked” (KHUSHABA *et al.*, 2013, p. 3803). Because of the nature of the eye-tracking technology, participants were studied one at a time (DJAMASBI *et al.*, 2010; TOWNSEND; KAHN, 2014).

One very important step for the analysis of the images is the creation of Areas of Interest (AOI). The AOIs are a way of telling the software (Tobii Studio Pro 3.4.5, used for data collection and analysis) which pixels of the image belong together, what is an object in a scene, and what is its visual extent. One example of AOIs created for this study is presented in Figure 3. Each AOI is coded according to what that object means for the screen. In the case of the Facebook timeline, images were separated from logos, brand names, text and social buttons (like, share and comments). Other AOIs used can be found in the Appendix of this study. All AOIs are created in the Tobii Studio Pro software.

Figure 3 - Facebook Timeline AOI



Source: designed by the author.

Creating AOIs allows the software to calculate different measures that are used in eye-tracking studies (DRÈZE; HUSSHERR, 2003). The measures used are explained in the following section.

3.4. Measures

Eye-tracking measures have a critical role in understanding both visual search and choice processes (ATALAY *et al.*, 2012). Existing research using eye-tracking have

demonstrated that self-reported measures based on memory don't reflect attention accurately (ARIBARG *et al.*, 2010; CHANDON *et al.*, 2009, 2006). In addition, Luan *et al.* (2016, p. 421), points that "consumers' perception, emotion and cognition [...] cannot be articulated easily through self-reports because these processes are associated with unconscious and automatic information processing mechanisms", which sets the eye-tracking equipment as a better way to assess some facts regarding the consumers' behavior.

With the help of the eye-tracking equipment and software, data could be acquired and measured. Through the use of such equipment, it is possible to understand and compare how some people look at the options presented by researchers, therefore making it possible to "measure the amount of time spent evaluating each option, whether each option is examined, and the pattern of the fixations" (TOWNSEND; KAHN, 2014, p. 1003). The technology allows for different measures to be studied, such as number and time of fixations or saccades, for example. Saccades, eye fixations and gaze patterns and durations can be used to access and understand the systematic process of visual attention (CHRISTIANSON; LOFTUS; HOFFMAN; LOFTUS, 1991; VAN DER LANS; PIETERS; WEDEL, 2008).

Fixations were used as a proxy for attention (DJAMASBI *et al.*, 2010). In addition, frequency of visits in an AOI, measured in fixations count, is an indication of importance of the Area and fixation duration is a measure of complexity in a visual display. The sequence of fixations and saccades, also known as scan path, will be used to assess search routine behavior (PAN *et al.*, 2004).

The gaze pattern (*i.e.* sequence of fixations) provide information regarding the visual search process (VAN DER LANS *et al.*, 2008). Heatmaps were used to graphically understand the fixations in the image (DJAMASBI *et al.*, 2007). The heat map shows in colors where are the AOIs and how much attention was paid to them (red, yellow and green, in a decreasing order).

4. RESULTS

After collecting the data for this research, as described in the method, some results are presented next in four sections. Each section tries to present, analyze and discuss the results regarding each of the research questions proposed.

4.1. Moving Brands as the Starting Point of Visual Attention

First looking at the simulated company websites with banner ads on the top of the page, it's clear that the logos are one of the first things noticed. The first of all, on the website with the moving brands was the main image on the center of the screen, with 0,21 seconds before the first fixation on average, followed by the logo with 1,26 seconds. First fixation went on from image, to logo, the written text, the main title, the supporting text and lastly to the navigation menu, which was not even noticed by many participants. This pattern was the same when taking into consideration the number of fixations before the first fixation. The logo had 3,65 fixations before the first, only behind the main background image with 0,46. The first fixations pattern can be seen on Figure 4, which portrays the first second of fixations by the participants (animated logo on the left, static on the right). The main image, as an AOI also had some advantage given the size of it on the screen.

Figure 4 – First second on the website Gaze Plot



Source: Designed by author

Taking into consideration the degree of usage of the traditional website media, there are a few differences. Participants who reported that they were not used to navigating in such sites

were faster to fixate their attention to the logos and slower to find the content of the website in both cases. This is probably due to lack of knowledge of the patterns in similar web environments, an exploratory search (JANISZEWSKI, 1998). More knowledgeable users know better how to identify ads and might search for the actual content first.

Analyzing the E-Commerce websites layout, the main image of the product being sold was the first thing noticed, with the lowest time before the first fixation, only 0,37 seconds. Again, it was followed by the logo, with 3,7 seconds, a big difference from the first. The next sign seen by the participants was the ratings of the product, with 4,42 seconds before the first fixation, a smaller difference than the previous two. The next aspects of the screen were title, price and menu of the website with 5,45 seconds, 6,05 seconds and 6,18 seconds, respectively, a larger difference from the logos. Again, fixations before the first one also followed the same path of visualizations. Different than the previous stimulus, the logo in this case had 12,92 fixations before the first on average. A larger number, but in this case most objects had high values for this metric as well. The “buy” or “cart” buttons, for example, had 31,49 fixations before the first. The completely static page had the same impact on participants, with visualizations going from the main image to the logo, then to the ratings, price, title, buttons, website menu and lastly the copyright disclaimer on the bottom of the page, which is expected to be last, for the position on screen and for its size (it is a part of the screen that is merely legal, usually not made to be seen).

Figure 5 - First second on e-commerce Gaze Plot



Source: Designed by author

Comparing the visualizations between e-commerce regular users and non-users, what was found is that the regular users were faster to look at the important objects for a purchase - as price, name of the product, rating and the buttons to acquire the product. Opposed to that,

participants that reported not being heavy users of e-commerce placed their attention on the animated logo and website menu twice as fast, indicating that they were first trying to make sense of the visual stimulus.

Next, social networks were taken into consideration. First to be discussed is Facebook, which had two different ways of analysis: independent posts and a simulated timeline. On the independent posts, the visualization of the logos was different. In the post with a moving brand, such brand was one of the last objects seen, with 5,86 seconds before the first fixation, more than all the other objects on the screen. The first things seen were the image and the text (0,51 and 1,82 seconds, respectively) followed by the name of the page with 4,94 seconds – a large relative difference – then social buttons (“like”, “comment” and “share”) and finally the logo. One possible explanation is the size of the logo in comparison with all other elements. Also, it is possible that in this online environment the logo does not say as much as other information on screen. Since the brand was fictitious, probably the participants looked to the name first, so they could understand what they were seeing.

Different from the previously discussed stimulus, when the logo was static, it was perceived a little earlier, but still behind image and text. Difference is that this time, it was seen before the name of the page (2,99 seconds and 3,77 seconds, respectively). Social buttons were the last ones on this case. When taking into consideration the number of fixations before the first, the same behavior was found, even though the difference is quite small on the last three objects seen (name, logo and social buttons, with 15,23, 18,15 and 18,37 fixations before respectively) – but very large when comparing with the image and the text (1,24 and 5,66). If the first visualization is put into clusters, it can be seen that most participants focused their attention on the top of the image, close to the text and the name of the page, but avoided the logo, even though it was moving, as can be seen in Figure 6.

Figure 6 - Facebook animated single post cluster visualization



Source: Designed by author.

Another point of differentiation between Facebook posts is that, with the same time (1 second) and same threshold, the Tobii Software identified 6 clusters of visualizations on the static page, as seen on Figure 7. With the moving brand, attention was more focused, as opposed to the case with the static brand where attention was more diffuse. Animation brought forth some consistency in visualization among participants in this first moment seeing the post.

Figure 7 - Facebook static single post cluster visualization



Source: Designed by author.

On the simulated Facebook timeline, the same behavior of the single posts was found. When the logo was animated it was the last thing seen by the participants of the study; when the logo was static the social buttons were the last place of attention. It's interesting to find such result because, on the simulated timeline, the order of the posts is a factor to be taken in

consideration; the first post was seen before - following a reading pattern (top of the page to bottom of the page)- but when taking into consideration the comparison between items in the same post, the attention behavior is the same as the separated post. Figure 8 shows the clusters of visualizations on the first second (left) and on the beginning of the second half of visualization time (right). Attention is placed first on the first post (animated), then moves to the second post (static). On the first, there are two smaller clusters and, on the second, there is a larger one and five very small clusters. Attention was divided even though participants did not know how long each stimulus would be displayed.

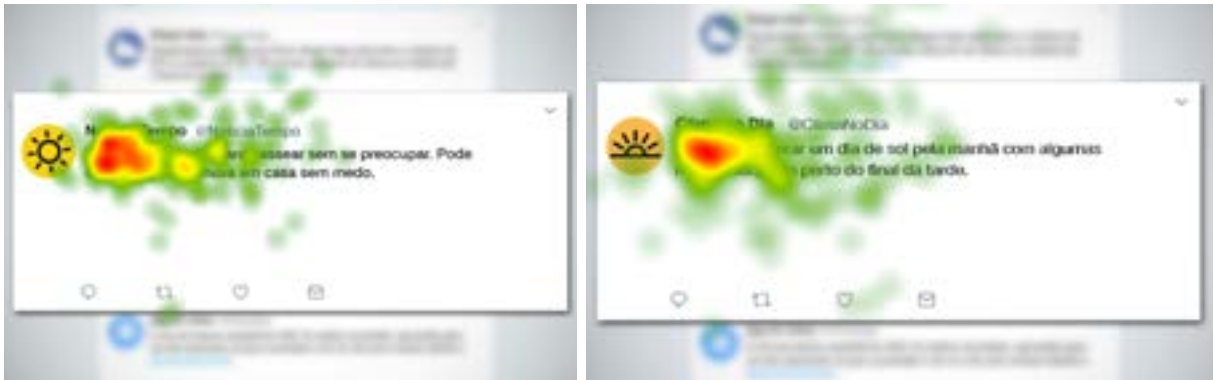
Figure 8 - Facebook Timeline Clusters



Source: Designed by author.

Lastly, regarding first fixations, a Twitter environment was simulated. For the microblog, as was on Facebook, a simulated timeline was created for analysis and separated posts as well. The posts simulated did not have any image, just words, which also creates a difference on how people see the stimulus. Twitter promoted a behavior very similar to Facebook, pointing to a social media behavior opposite to traditional websites and e-commerce websites. In the post with the moving brand, text and name of the profile were fixated first (0,52 seconds and 1,7 seconds, respectively) with a large gap between them and the animated logo (5,53 seconds) Same behavior was found regarding static logos. Again, the animated logo took longer to be seen, but other objects on the screen were seen first (in comparison with static post), so the animated logo could be a way to bring attention to the content. Figure 9 shows where the attention was more focused on the first second of visualization on both animated (left) and static (right) logos. Number of fixations before the first had a similar pattern in all cases.

Figure 9 - Twitter Single Post HeatMaps



Source: Designed by author.

On the simulated timeline, the effect found was consistent with the previous analysis when taking into consideration the interaction between the first post (static) and the second (animated), with text being the first thing seen by the participants. The difference was regarding the interaction between the animated post coming before the static one. In this case, the logic of text as the first fixation was inverted. Since the audience realized that the previously seen logo was moving, when the attention was moved towards the next post, the first point of fixation was the logo, probably looking for another moving brand. In this case, the moving brand does not have a clear impact on the attention towards the logo itself but impacts how the viewer sees the stimuli to come. This can be seen on the visualization cluster in Figure 10, where the profile picture in the first two posts (static and animated, respectively) are not completely inside the cluster of attention, but the last one is.

Figure 10 - Twitter Timeline Clusters



Source: Designed by author.

On Twitter also the use of animated logos caught the attention of non-regular users first. Being a different stimulus than usual, these participants were more drawn to them. Regular users understand the media better and are more fluent on its use, therefore they have a pattern of attention to be followed more intensely, there is less room for variation or for novelty, they know what they are looking for and go after that information.

Regarding RQ 1.1 (*Are moving brands the starting point in the visual hierarchy of brand efforts?*), it was found that it depends on the web media. In company websites and e-commerce websites, the animated logos are one of the first fixation points of attention, usually behind some object that is very big, but given the difference in size, the relative importance of moving brands is big. However, analyzing social media websites such as Facebook and Twitter, the results were different. People look more for content and do not take moving brands as a first point of attention, they are more interested in other aspects and other information at the first moment of search of information. The only case where this was different was when a moving brand came right before a static one, scenario in which the person might be primed to look for other moving brands. As he or she becomes aware of the moving brand, that person will look for other similar brands.

4.2. Differences Between Moving Brands and Static Brands at the Moment of First Fixation

Women	1,48	1,86	3,83	3,03	2,65	5,38	5,15	5,24
Men	0,98	0,63	2,16	4,49	3,54	6,43	4,06	5,85
High Use of Twitter	1,47	0,54	4,45	4,74	6,03	4,87	4,9	6,05
Low Use of Twitter	1,19	1,4	2,55	3,55	2,08	6,16	4,71	5,38
High Use of Facebook	1,27	1,41	2,3	3,96	2,47	6,69	4,64	5,62
Low Use of Facebook	0,86	0,55	4,91	2,13	4,72	1,15	5,46	5
High Use of Company Websites	1,34	1,41	2,71	3,83	2,83	5,37	4,61	4,96
Low Use of Company Websites	0,59	0,98	1,2	3,43	3,53	7,45	5,65	6,51
High use of e-commerce	1,35	1,52	3,65	3,95	2,64	5,43	5,27	5,16
low use fo e-commerce	0,69	0,81	1,16	1,49	2,96	6,59	4,89	7,95
High Use of Social Media	1,37	0,975	3,375	4,35	4,25	5,78	4,77	5,835
Low Use of Social Media	1,025	0,975	3,73	2,84	3,4	3,655	5,085	5,19
High Use of Site+ E-Com	1,345	1,465	3,5125	4,15	3,445	5,605	4,94	5,06
Low Use of Site+ E-Com	0,64	0,895	1,18	2,46	3,245	7,02	5,27	7,23
All Recordings	1,2	1,3	2,8	3,68	2,95	5,8	4,85	5,52

Source: Designed by author.

High or low use of e-commerce platforms had a time difference between one another, but none that would invert this pattern. People that reported a high use of this sort of website took longer to their first fixation on both cases: 3,65 seconds for static logos and 3,95 seconds for animated logos. In the low use category, the times drop to 1,16 and 1,49, correspondingly. As pointed before, people less fluent in the use of such websites probably need to better understand all aspects of the site, business or screen they are looking at, therefore, need to find information faster regarding the whole stimulus. People more fluent, know what to look for and fixate their attention first on what is actually important in the setting of e-commerce, in this case. The logo might not be as important, regarding the hierarchy of information necessary to make sense of the product, at least not as much as other objects in the scene like the photo, the price, the name of the product.

On the Facebook single posts, on average, the animated logo took longer to have its first fixation (5,8 seconds) than the static logos (2,95 seconds), but again the individual characteristics played a role. Low use of Facebook in this case represented the biggest difference of time to first fixation on animated logos across the examples used. People that reported using Facebook less had a first fixation on the moving brand with 1,15 seconds but took 4,72 seconds to first fixate on the static one. With high use of Facebook this is inverted, taking 2,47 seconds on average to first fixate on static logos and 6,69 seconds to first fixate on the animated logo. The use of Twitter also had an influence, where people that use the microblog more frequently had the first fixation on animated logos before (4,87 seconds) the static logos (6,03 seconds), opposite of people that don't use Twitter as much. This last group of people first look at the static logo (2,08 seconds) and latter to the animated one (6,16 seconds).

The relationship between animated and static logos in Twitter posts are the most internally consistent, with very little differentiation; the gap between faster first fixations and longer times to first fixations is narrower compared to Facebook posts and e-commerce websites. Time to first fixation was rather different in users or non-users of the microblog. Participants that reported a high use of the social network had an average time to first fixation of 4,9 seconds on static logos and 6,05 seconds on animated ones. On the low use, participants times were 4,71 seconds and 5,38, respectively.

The use of social media was a factor that differentiated the behavior of the participants studied. A traditional website or an e-commerce are settings where the animated logo might be more important or get more attention at first than social media. And the fluency on such social medias is a factor that has impact on whether or not there is a search for the brand at the beginning of the stimulus.

Comparing the use of brand logos in web-based sites or social networks, it was found that static logos were seen before animated ones, but this effect might depend on certain characteristics of the audience. Men and woman, for example have different behaviors. The degree of use and navigation on these websites also had influence on the search for information at a first moment. Therefore, there is a difference between moving brands and traditional brands as a first fixation point (answering to *RQ 1.2*) but with personal differences between audiences, regarding demographics and behavioral characteristics.

4.3. Moving Brands and the Attention Process

To answer RQ2 (*Are moving brands more prone to promote attention than traditional brands?*) A few analysis were made. First of all, the average fixation time on moving brands were mostly higher than the static ones, but slightly. Table 2 shows the difference between average fixation duration. Numbers below zero were the only cases in which static logos had higher average fixation duration. The average fixation duration throughout all logos was 0,2 seconds.

Table 2 - Average Fixation Duration Difference Between animated and static logos

	Website	E-Commerce	Facebook single post	Facebook Timeline	Twitter Single Post	Twitter timeline 1	Twitter timeline 2
Women	0,07	0	0,08	0,04	0,04	0,09	0,07
Men	0,03	0,03	0	0,02	0,06	0,1	0,09
Twitter High	0,07	0,01	0,04	0,05	0,08	0,14	0,14
Twitter Low	0,04	0,01	0,06	0,05	0,05	0,09	0,08
Facebook High	0,04	0	0,04	-0,01	0,02	0,07	0,08
Facebook Low	0,02	0	0,1	-0,03	0,14	0,05	-0,01
Website high	0,05	0	0,06	0	0,1	0,04	0,06
Website Low	0,05	0,01	0,04	0,23	-0,09	0,14	0,13
E-Commerce High	0,04	-0,01	0,08	0,01	0,06	0,02	0,03
E-Commerce Low	0,04	0,05	0,03	0,18	-0,01	0,12	0,13
All Recordings	0,04	0,01	0,05	0,03	0,04	0,08	0,07

Source: Designed by author.

Another way of comparing how the logos help promote attention is through the fixation count on each logo. Table 3 shows the difference between average fixation count in animated and static logos. Numbers below zero represent logos that had more fixations on the static than the animated brand logos. Again, it is clear that animated logos promote more attention to them than the static ones. Also following previous analysis, the main difference is on social media, in this case mainly in the Facebook timeline stimulus. Women and men also had some differences in how they scan the images, with women having more fixations than men on most instances. Also, most fixation count was on animated logos in e-commerce and company website, also in consonance with previous analysis that these two cases are the ones where the moving brands are more noticeable.

Table 3 - Average Fixation Count Difference Between Animated and Static Logos

	Website	e-commerce	Facebook Post	Facebook Timeline	Twitter Post	Twitter Timeline 1	Twitter Timeline 2
Women	3,92	5	0,41	-1,33	1,92	0,13	0,63
Men	1,49	2,78	-0,27	0	0,61	0,81	-0,19
Twitter High	4	3,03	0,67	2,12	2	2	0,5
Twitter Low	2,47	4,56	-0,1	-0,6	1,16	0,41	0,62
Facebook High	2,96	3,67	0,2	-0,28	1,55	0,57	0,61
Facebook Low	1,05	5,43	0,33	-0,7	-0,17	-0,67	-1,5
Website High	2,54	3,93	0,1	-1,17	1,96	0,42	0,62
Website Low	5,2	2,78	0,67	-0,16	1,8	0,5	0,5
e-Commerce High	2,73	3,67	0,37	-0,75	1,15	0	-0,3
e-Commerce Low	4,79	5,64	-0,08	1,08	2,08	1	0,5
All Recordings	2,84	4,03	0,15	-0,4	1,42	0,47	0,37

Source: Designed by author.

Analyzing each case in particular, it is possible to see what the numbers tell in each web environment. In company websites, represented in Figure 11, one can see that the moving brand (on the left) caught more attention than its static version (on the right). The red on the heatmap means longer fixations on the area; the moving logo had some of the attention relatively to the rest of the scene, as opposed to the static stimulus, where attention ended up being higher in the written content in the main image and the title of the page. In this case, clearly the logo promoted more fixations and, thus, more attention to the brand. Nevertheless, the attention to the content in the page with the moving brand also had longer fixations, which suggests that the attention was not cannibalized from other aspects, but that the participant noticed more items on the screen, he or she did not lose information but added brand perception to the navigation in the page, which can be very good for the company using the logo.

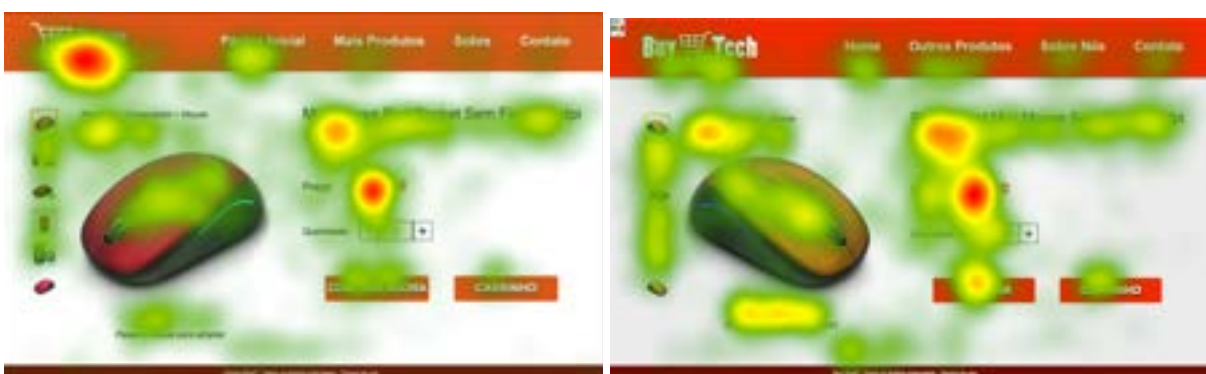
Figure 11 - Company Websites Heatmaps



Source: Designed by author.

In the e-commerce website, shown in Figure 12, it is possible to see that the behavior of attention was quite similar, but the animated logo (on the left screen) took much more attention than the static one. In this case, since there are a lot of visual stimuli in the screen, the fixations on other areas was reduced; since the software had a pre-programed time to display the image, attention was divided. All important aspects of the screen were seen in both cases, so it is possible to say that there was no loss in information acquired, based on visual attention. The use of animated logos can help promote the brand and get more attention if this is desired by the business or company, but it might come at the cost of less attention on other aspects of the website.

Figure 12 - e-Commerce Websites Heatmaps

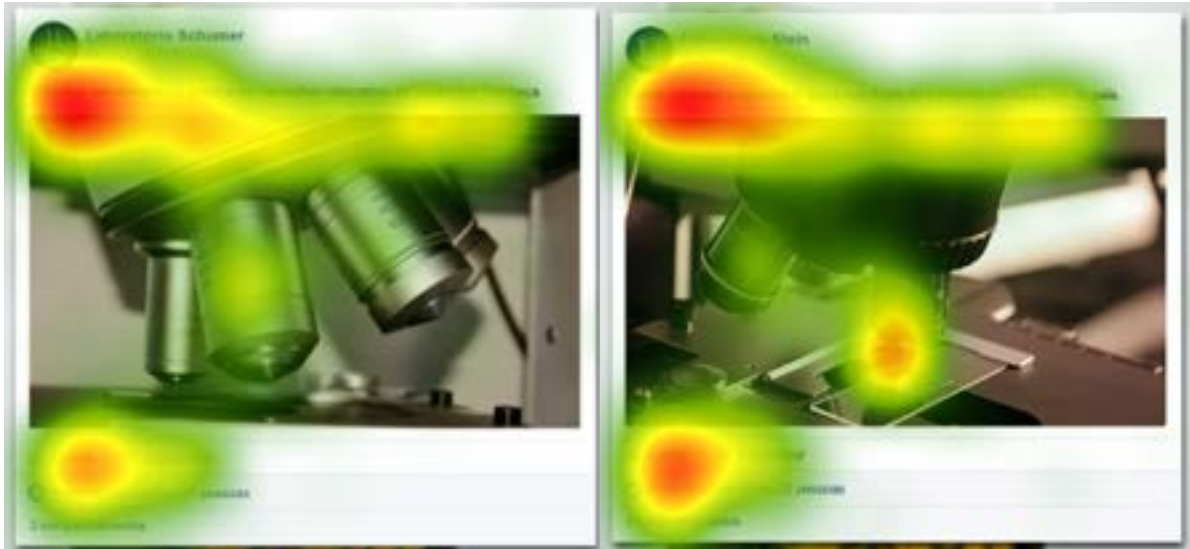


Source: Designed by author.

Next are the social networks Facebook and Twitter, which mostly had different results in comparison with the previous, more traditional, websites discussed. Examining the single posts, results are very similar between one another, and different from the previous ones. In this case, attention had a very similar outcome. The moving brand scenario had less fixations and

less attention if compared to the static brand. It is noticeable, however, that the stimuli were actually very similar, given that the attention on both were extremely similar.

Figure 13 - Facebook Post Heatmap



Source: Designed by author.

On the simulated timeline, attention was very similar in both posts, as seen in Figure 14. The main focus of attention was on text and the upper part of the image, followed by the social buttons (“like”, “comment”, “share”). The main difference was that the brand in the second post (static) was seen along with name of the page and text, it’s in the same heat spot, contrary to the first brand (animated), outside of the red and yellow parts, indicators of more attention. Stimulus were perceived in a very similar way, both the single posts and the timeline.

Twitter posts had similar results than Facebook previously, but not as strong. The characteristic of a post with no image probably contributed to distance of outcomes in both social networks. Given that the only image on the single posts was the brand logo, that may have contributed to higher fixations on the logos, since they were given more importance with moving brands. Figure 15 shows the comparison of accumulated fixations in both animated (left) and static (right) logos.

Figure 14 - Facebook Timeline Heatmap



Source: Designed by author.

Behavior towards the posts were very similar, but in the animated one there was more attention to text and to name than in the static brand. Conversely, there's more attention on the brand logo. With this, managers or content producers must understand that there is a tradeoff between the awareness of the logo and the attention on the content of posts in social networks. Not that the audience will not read the text, because they payed attention to all that needed to be seen, but with moving brands, such attention will be divided, given equal visualization time.

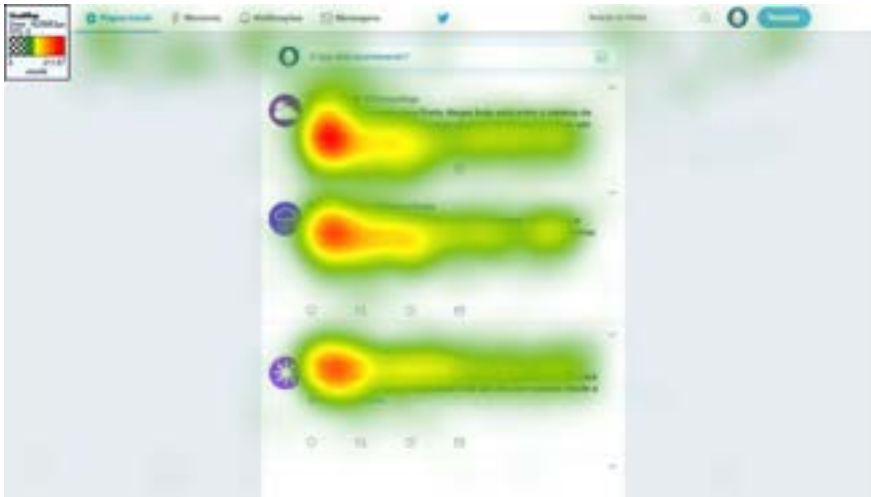
Figure 15 - Twitter Post Heatmaps



Source: Designed by author.

The simulated Twitter timeline showed similar results on all posts, static (first and last) and animated (second). Attention was fairly divided among the three posts and just a little attention was payed to other aspects of the microblog, such as the header of the page, as seen in Figure 16. Still, no clear effect was found on the timeline regarding the animation of the second logo.

Figure 16 - Twitter Timeline Heatmap



Source: Designed by author

Therefore, answering RQ2, the animated brands may promote more attention than regular static brands, but it also depends on the context. Generally speaking, there is a mild effect of animated brands getting more attention, but it is possible that the web environment used cause some differences in the results. Social networks are a little different than other websites. This behavior can mean more attention to the entire website or a dispute of attention, depending on the time. Information is similarly seen but companies using such animated logos may get more attention to the brand if they want with little cost to information. Other elements on the screen might interfere with that as well. If there are less images, the brand becomes a more important visual cue, and will get more attention, especially if it is animated.

4.4. Moving Brands and the Search Routine

It has been seen throughout the study that animated brands have some influence on how people perceive certain web-based screens. Moving brands are one of the first things noticed in some online contexts. The use of social networks might have different results, with people being more interested in content than brands. Also, moving brands get more attention than other brands in most web contexts, with some differences in social networks, especially Facebook, since posts in this media normally have images associated, which demands a larger portion of the attention (particularly business' posts).

All of this information points to, at least, minor differences in how consumers see websites in general, which could indicate a different search routine as it changes how people perceive a stimulus as whole. To complement that, it is possible to try to understand the number of fixations as a way to assess if animated logos on pages will promote a more intense search routine, if the participant scans more of the screen or if there is less search with more attention

on the animation, for example. Throughout all AOIs, with the use animated logos, there were more fixations and saccades on the page as a whole, with the only exception of Facebook posts. The difference is very low, with more or less than half a fixation per area on average, but this is consistent on the medias investigated. More pronounced differences are among people that reported not using company websites or e-commerce very frequently, as seen on Table 4. Women and men also search for information in a different way. Differences between fixation count for this two groups are more distinct than the total average, especially in the ones that are not social networks.

Table 4 - Fixation Count on All AOIs

	Static Company Website	Animated Company website	Difference in fixation count	Static e-commerce	Animated e-commerce	Difference in fixation count
Women	8,93	10,04	1,11	7,68	6,94	-0,74
Men	8,54	8,74	0,2	7,74	7,62	-0,12
Twitter High	9,89	9,32	-0,57	7,62	6,7	-0,92
Twitter Low	8,48	9,54	1,06	7,74	7,37	-0,37
facebook High	8,86	9,63	0,77	7,66	7,12	-0,54
facebook Low	8	8,03	0,03	7,85	8,49	0,64
Website High	8,3	8,78	0,48	7,56	6,98	-0,58
Website Low	8,83	11,27	2,44	8,06	6,89	-1,17
e-commerce high	8,88	9,16	0,28	7,29	7,07	-0,22
e-commerce low	7,35	8,31	0,96	8,51	7	-1,51
All Recordings	8,64	9,31	0,67	7,66	7,18	-0,48
	Static Facebook Post	Animated Facebook Post	Difference in fixation count	Static Twitter Post	Animated Twitter Post	Difference in fixation count
Women	8,28	8,3	0,02	7,71	7,77	0,06
Men	8,3	8,1	-0,2	8,86	9,19	0,33
Twitter High	8,03	8,04	0,01	8,39	9,21	0,82
Twitter Low	8,41	8,25	-0,16	8,25	8,27	0,02
facebook High	8,32	8,38	0,06	8,36	8,49	0,13
facebook Low	7,88	7,95	0,07	7,55	8,53	0,98
Website High	7,66	8,22	0,56	8,68	8,91	0,23
Website Low	8	7,89	-0,11	8,55	7,7	-0,85
e-commerce high	8,15	8,42	0,27	7,63	8,2	0,57
e-commerce low	7,18	6,32	-0,86	9,79	8,25	-1,54
All Recordings	8,13	8,18	0,05	8,27	8,45	0,18

Source: Designed by author

If visit count is taken into consideration (visit count means the number of visits inside an AOI, which can be one or more fixation in the same area before leaving said AOI), similar results are found. Again, animation has a bigger effect on Company Websites and e-commerce, but less on Facebook and opposite on Twitter, with animation causing less fixations and, consequently, fewer saccades – less scan on the screen, as seen on Table 5:

Table 5 - Visit Count on All AOIs

	Static Company Website	Animated Company website	Difference in visit count	Static e-commerce	Animated e-commerce	Difference in visit count
Women	2,66	2,88	0,22	2,66	2,93	0,27
Men	2,61	2,77	0,16	2,51	2,83	0,32
Twitter High	3,07	3,12	0,05	2,52	2,72	0,2
Twitter Low	2,55	2,79	0,24	2,62	2,94	0,32
facebook High	2,64	2,81	0,17	2,62	2,83	0,21
facebook Low	2,8	2,86	0,06	2,41	3,33	0,92
Website High	2,64	2,8	0,16	2,57	2,81	0,24
Website Low	2,24	3,31	1,07	2,6	2,83	0,23
e-commerce high	2,61	2,72	0,11	2,47	2,83	0,36
e-commerce low	2,1	3,31	1,21	2,69	2,96	0,27
All Recordings	2,6	2,84	0,24	2,57	2,87	0,3
	Static Facebook Post	Animated Facebook Post	Difference in visit count	Static Twitter Post	Animated Twitter Post	Difference in visit count
Women	2,53	2,44	-0,09	2,4	2,32	-0,08
Men	2,59	2,63	0,04	2,81	2,68	-0,13
Twitter High	2,65	2,46	-0,19	2,7	2,43	-0,27
Twitter Low	2,54	2,56	0,02	2,57	2,53	-0,04
facebook High	2,52	2,56	0,04	2,69	2,49	-0,2
facebook Low	2,75	2,52	-0,23	2,2	2,68	0,48
Website High	2,53	2,56	0,03	2,66	2,66	0
Website Low	2,39	2,75	0,36	2,65	2,3	-0,35
e-commerce high	2,56	2,5	-0,06	2,63	2,61	-0,02
e-commerce low	2,39	2,43	0,04	2,53	1,96	-0,57
All Recordings	2,54	2,54	0	2,61	2,51	-0,1

Source: Designed by author

It is possible to analyze this through the gaze plots of the participants as well. In order to keep the image as clean as possible and understandable, Figures 17 through 20 are all gaze plots of only four out of the 50 participants (8%). Of the four participants chosen, two are male and two are female and all of them are in the young adult category, in order to have both variation and homogeneity in this sample, used only so it would be possible to visualize the results graphically. This four were randomly selected within the profile of participants

Figure 17 - Company Website Gaze Plots



Source: Designed by author

Figure 17 and Figure 18 show the gaze plots of simulated company websites and e-commerce websites, respectively. On Figure 17 it is possible to notice that the gaze is more distributed on the image to the left, with the animated logo. In the image to the right, completely static, visual scan of the screen is more concentrated. Since the consumer saw the movement in the logo on the top of the page, it might search for more visual cues that are unexpected or even be primed to move its attention more, since he or she saw movement already. In Figure 18, the gaze plots of the simulated e-commerce are very similar. The difference lies on the bigger concentration of fixations in the animated logo (left). It's interesting to see that specific fixations on the logo are some of the first and others are some of the last, *i.e.*, the brand can be the beginning of the process, where the consumer tries to make sense of what he or she is seeing and who is responsible for that business, then scans the image looking for the information available and returns to the brand, almost closing a cycle, that might end up with or without the purchase, but the branding efforts can be optimized because the logo will influence the search for information as well as the information will again give meaning to the brand.

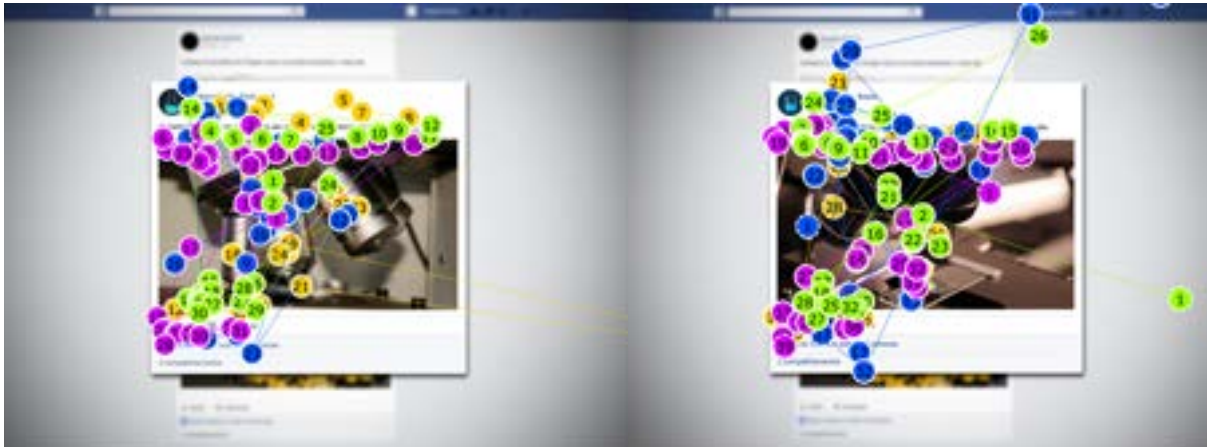
Figure 18 - E-Commerce Gaze Plots



Source: Designed by author

Social networks, as seen on Figures 19 and 20, were the ones where behavior was different considering the use (or not) of moving brands. In Figure 19, the image on the left (animated logo) have fixations more concentrated. The image to the right (static logo) is also very concentrated but allowed the participants to scan the scene a little more. In the animated logo, people stayed close to the image; in the other they could wander more, maybe because they were more accustomed to what they were seeing. The animation might have had the effect of keeping attention close to see if something else could happen.

Figure 19 - Facebook Posts Gaze Plots

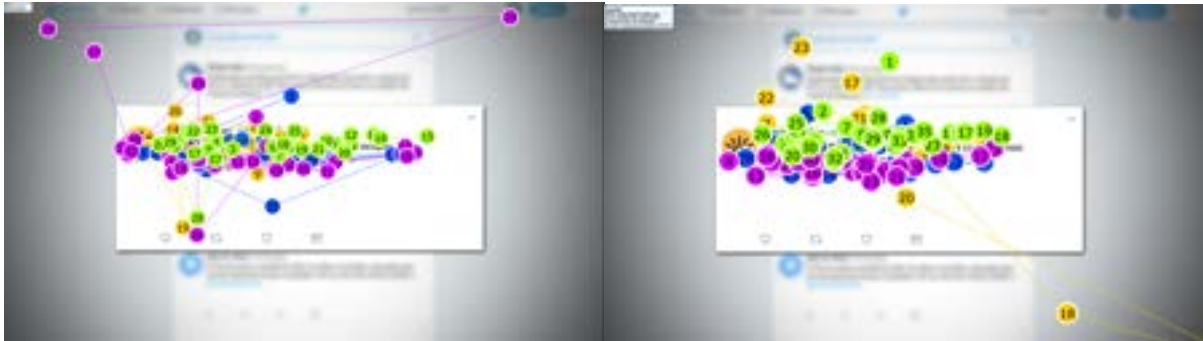


Source: Designed by author

On Twitter posts, since there is less content, fixations were more concentrated and saccades shorter. One of the participants in the animated scenario (left) felt free to explore the scene, which also happened with one of the participants in the static image (right), but in a minor degree. The main difference was that in the animation there were more fixations, probably because there was less content to observe, so attention went to the most interesting stimulus, after all the information was acquired. In support of this, it is possible to see that the fixations on the logo are intermediate or final fixations. That also corroborates with the notion that the person might try to make sense of the content, then check the source and bring some information

with the consumer himself (herself) as he (she) looks at the brand. The search process ends with possible assessments of the brand, not only the content read.

Figure 20 - Twitter Posts Gaze Plots



Source: Designed by author.

With all this information, to answer RQ3 (*Can moving brands help promote a search routine for the consumer?*), it was seen that there are evidences of a different routine, especially if taking in consideration the connection between the content and the environment. If the website is unknown, the animated brand can help the consumer make sense of the objects, how they relate with one another and then come back to the brand and understand it in the context in which it was presented. In social media, content can be more important than the brands and the branding effort of animating the logos might not be fruitful for the company, even though it might get more attention than some other objects in a scene. Moving brands are a resource that can be used with some advantages regarding the attention of the consumer, but the differentiation in search that it promotes is mild and therefore should be used if the brand can see benefits in the differences it promotes.

5. FINAL CONSIDERATIONS

Moving brands or animated logos are a somewhat new topic for analysis and relevant since web-based businesses grow in an accelerated rate. With branding being an important part of marketing and logos being an important part of brandings, it makes sense to try to comprehend how these signs are seen by different audiences.

The present study aimed at understanding how the use of moving brands can affect the visual search routine of a person, based on how that person really sees the screens where these brands might be. Attention, through the eye-tracking, is a way to comprehend what are the objects in a scene that will get attention first or last and what is in between; it is possible to understand what the path of the eye is and try to grasp on this knowledge to create better web stimulus that will have more impact on consumers and people in general.

First, this study discovered that moving brands can be the starting point of visual hierarchy in the web, depending on where on the web. Considering more traditional websites such as e-commerce and company websites, the moving brand has a more prominent importance. In newer formats, such as social networks and social media, behavior is slightly different. In the environments where the target has a more passive role, such as a “third party” website, animation will get more attention at the first sight, the viewer will have a more exploratory behavior towards the stimuli on the screen.

On the other hand, in web applications such as Facebook or Twitter, social networks, the audience has a more active role, with the possibility of interacting with the sender of a message, for example. In this sort of setting, the content is king, and people will pay more attention to the content than to other stimulus. The environment is more controlled, people know what to expect from Facebook and Twitter regarding design. The different attentional behavior regarding the moving brands may come from the fact that these social networks are more known by diverse audiences (even though they don't use as much, they what it looks like) and the routine might be rooted deeper in the mind of the consumer, not giving much space for the eye to wander; attention is more goal-directed (JANISZEWSKI, 1998).

What the moving brands can do in these less receptive medias is prime the viewer to a less static state of attention, make the consumer prepare for movement. This was only hinted in the data collected. They have the potential to influence the rest of the web environment, not only be, itself, a passive sign to begin the search routine of the web user. Thus, Research Question 1.1 was partially confirmed, so moving brands can be the starting point in the visual

hierarchy, not only of branding efforts but through other aspects of promotions and communication, it only depends on where and how the public relates to the media.

As a way to complement the understanding from this first question, Research Question 1.2 was formulated in order to complement RQ1.1, is asked: *Is there a difference between moving brands and traditional brands as a first fixation point?* To which the answer is: Yes, there is, but not as previously thought. It is not a clear and direct relationship between animation and first moment attention. This study, *a priori*, believed that animation being a change in state would get more attention throughout the entire time, which was not true. For the moving brands to have an impact at first sight, it depends on personal characteristics of the audience, be it demographic or behavioral variables, as well as characteristics of the medium, as seen in the first research question.

In the quest to understand the search routine, this study first tried to comprehend attention at a first sight, then moved to less measures less fixated on time. First, it analyzed what is seen first, then what is seen next. Therefore, Research Question 2 was created to try to understand if the moving brands would promote more attention, for itself and for the other objects and signs in a given web screen. Again, the answer was only partial support, since the medium has influence on behavior and the web is polymorphic, different, varied, assorted and mixed.

Animated brands, generally speaking, will get more attention time for its movement, it takes more time to assimilate its full meaning, because it takes time for the shape to change, be it one second or several. In some cases, animation will make the consumer look for more information, since it is surprised with this new format, that is not as common or widespread as static logos. But if the time is limited, there might be a tradeoff in the visual attention; the consumer will have to choose if he or she wants to scan the image as whole or if it wants to gather more information. Given enough time, the consumer will look for all the information needed and return a few more times to the brand, bringing better results to branding efforts. However, if the time is short, the attention towards an animated logo may “cannibalize” the time that consumer would use to make a better sense of a scene or information. In this case, once more, the medium will also have impact and the relationship the consumer has with it, what he or she looks for in that environment.

That being understood, the present study aimed at a broader way of thinking a screenshot of a web-based media and questioned: *can moving brands help promote a search routine for the consumer?* Evidence is that yes, it can. Using the data collected the impact is mild; mostly because of the information already gathered in the first research questions. This last one looked at the behavior of fixations and subsequent saccades as a way to create a wider map of visual attention in a scene, to search more but in a consistent way. In consonance with what was seen

before, yet again it is possible to divide the attention that explores a new place, a new website, a new stimulus and the attention of a person who knows a media and will look for what it wants in a predetermined routine. In this second case, the medium will have a stronger influence on the scan path the eye makes, but in the first case, the animated logos and the moving brands can help the consumer amplify his search process, be it through a curiosity of what comes next or simply as a way to impact him before he makes sense of what is being sent to him and after he (thinks he) understands the images and contents on a given screen or website (any one of the studied types, or even other that were not included in this study).

Managerial implications of this study are the understanding of how to better apply branding efforts and how to direct the attention of the consumer to where the organization believes he or she should be looking at. Changing design features can be expensive but can also help different organizations. If they want to convey meaningful and concise messages, it is important to know not only what to say, but how and where as well.

This study builds on the literature of attention and search routine with important aspects regarding web content and design and branding efforts through animation. The study reinforced the ideas of exploratory and goal directed searches, connecting it with attention literature through behavior analysis, not behavior predisposition or attitude, thanks to the eye-tracking equipment. As the study tried to understand some aspects of the phenomenon, new possibilities emerged, as the use of animation as a prime for the consumer to be more active in the search routine process or attention transfer and how the fixations and saccades in an animated logo can help bring meaning to other objects and signs in an image or screen.

One of the main strengths of this work is the use of eye-tracking, but that also bring some limitations. First of all, the sample has to be investigated one at a time, whereas in other studies sturdier data could be acquired through bigger sample sizes, maybe stronger effects would be found. At the same time, this study did not take into consideration the opinions and attitudes of the consumer, only behavior. Of course, it was a choice that was made, but future studies could couple behavioral data with perceptions, attitudes and opinions of the consumers, combining different qualitative and quantitative data. More experiments can help this research to evolve, using new variables be it new scales, investigation of different environments or different data collection methods, in order to get more complete data and find new information regarding moving brands, animation, or different design and branding efforts.

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APPENDIX

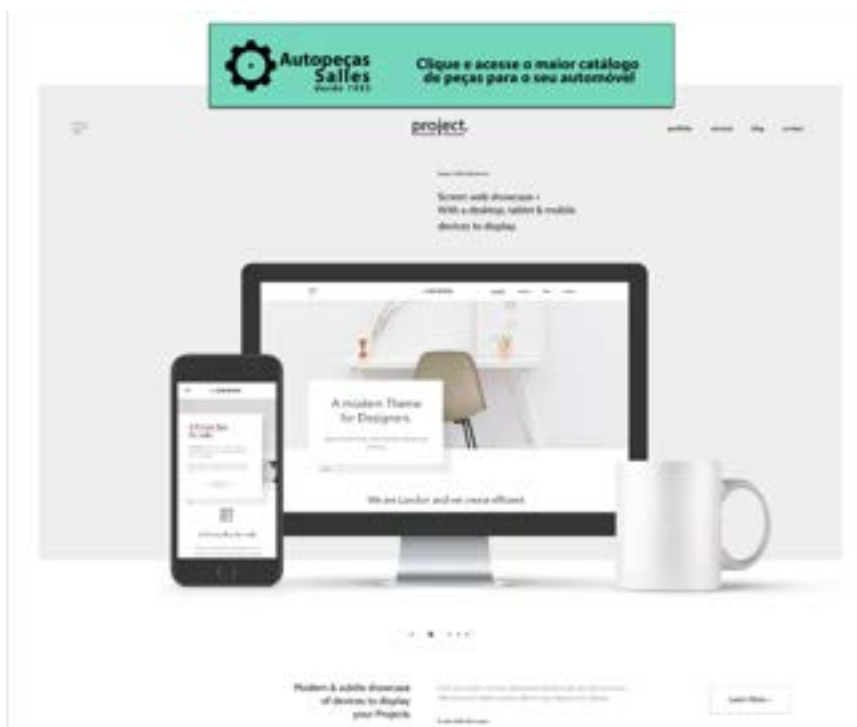
Appendix A – Screenshots of the Images Used

Figure 21 - Facebook Simulated Timeline



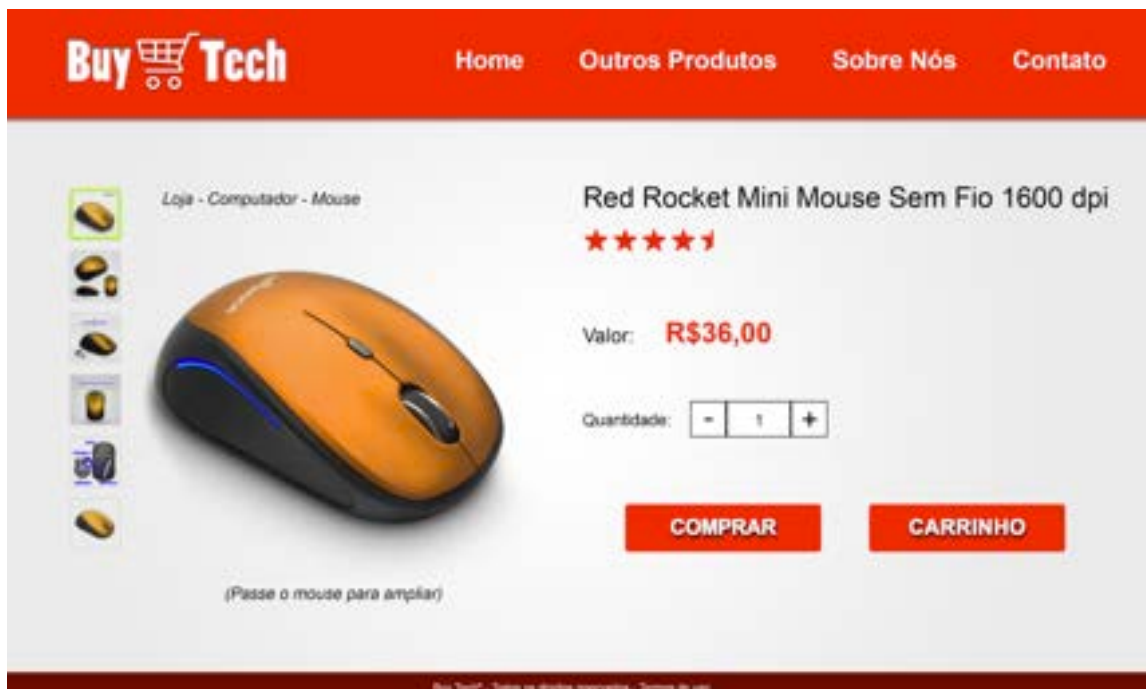
Source: Designed by author.

Figure 22 - Simulated Company Website with Static in-Banner Logo



Source: Designed by author.

Figure 23 - Simulated e-Commerce with Static Logo



Source: Designed by author.

Figure 24 - Simulated Facebook Post with Static Logo



Source: Designed by author.

Figure 25 - Simulated Facebook Post with Animated Logo



Source: Designed by author.

Figure 26 - Simulated Twitter Post with Static Logo



Source: Designed by author.

Figure 27 - Simulated Twitter Post with Animated Logo



Source: Designed by author.

Figure 28 - Simulated e-Commerce with Animated Logo



Source: Designed by author.

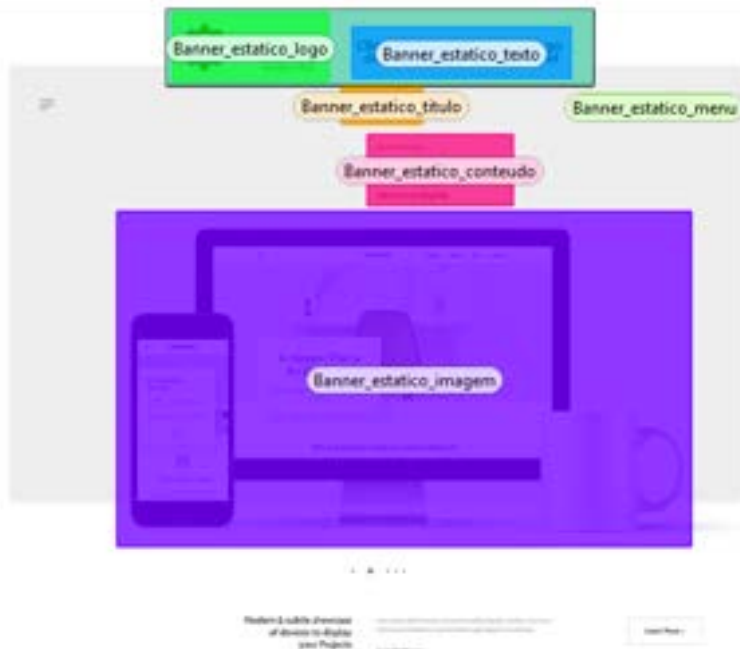
Appendix B – Areas of Interest

Figure 29 - Animated Company Website AOIs



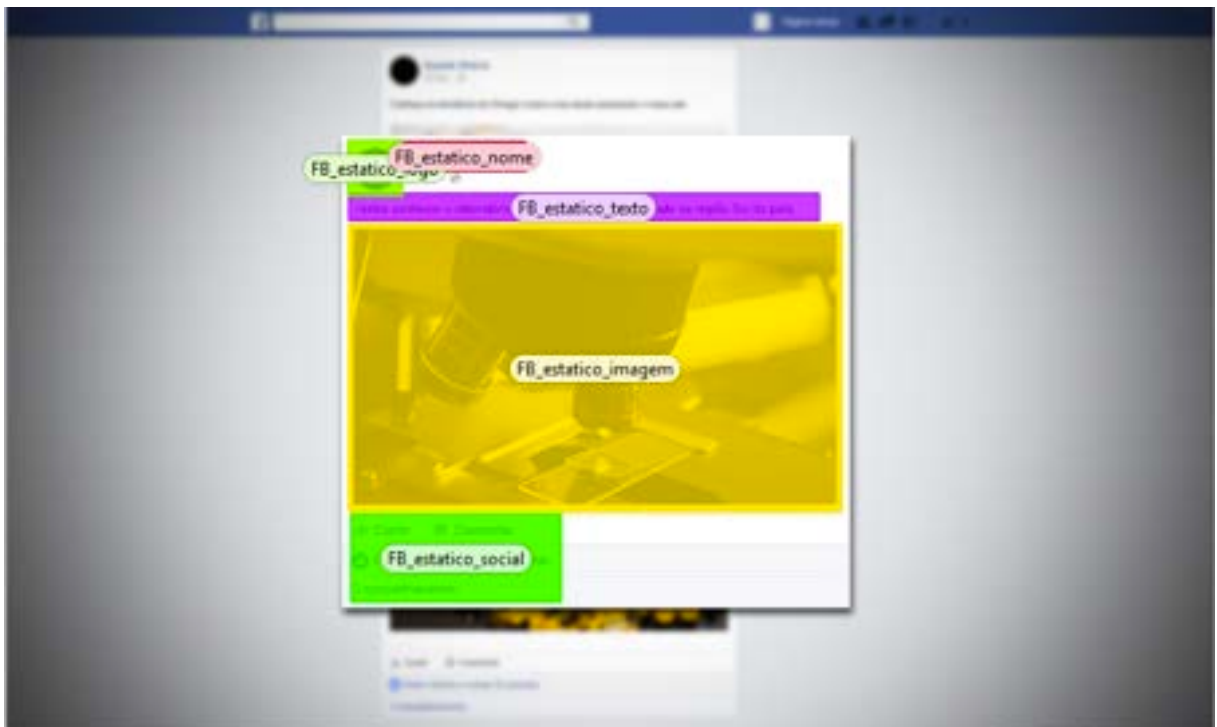
Source: Designed by author.

Figure 30 - Static Company Website AOIs



Source: Designed by author.

Figure 31 - Static Facebook Post AOIs



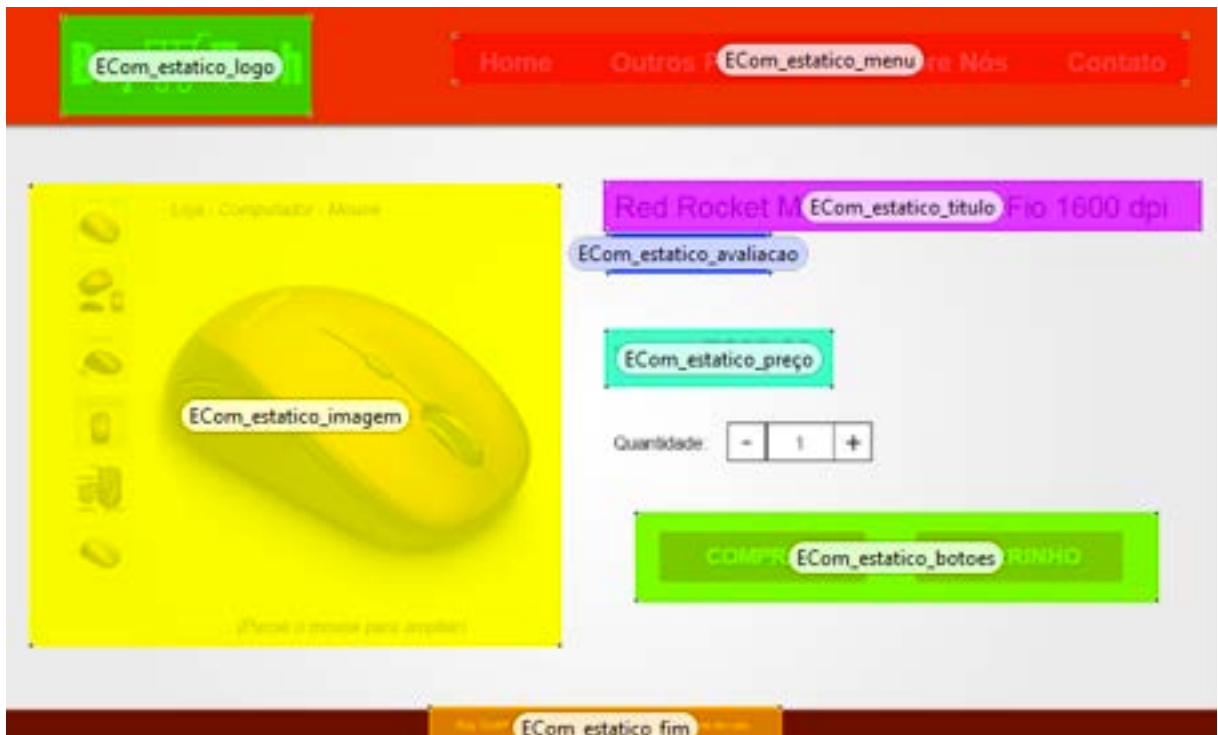
Source: Designed by author.

Figure 32 - Animated Facebook Post AOIs



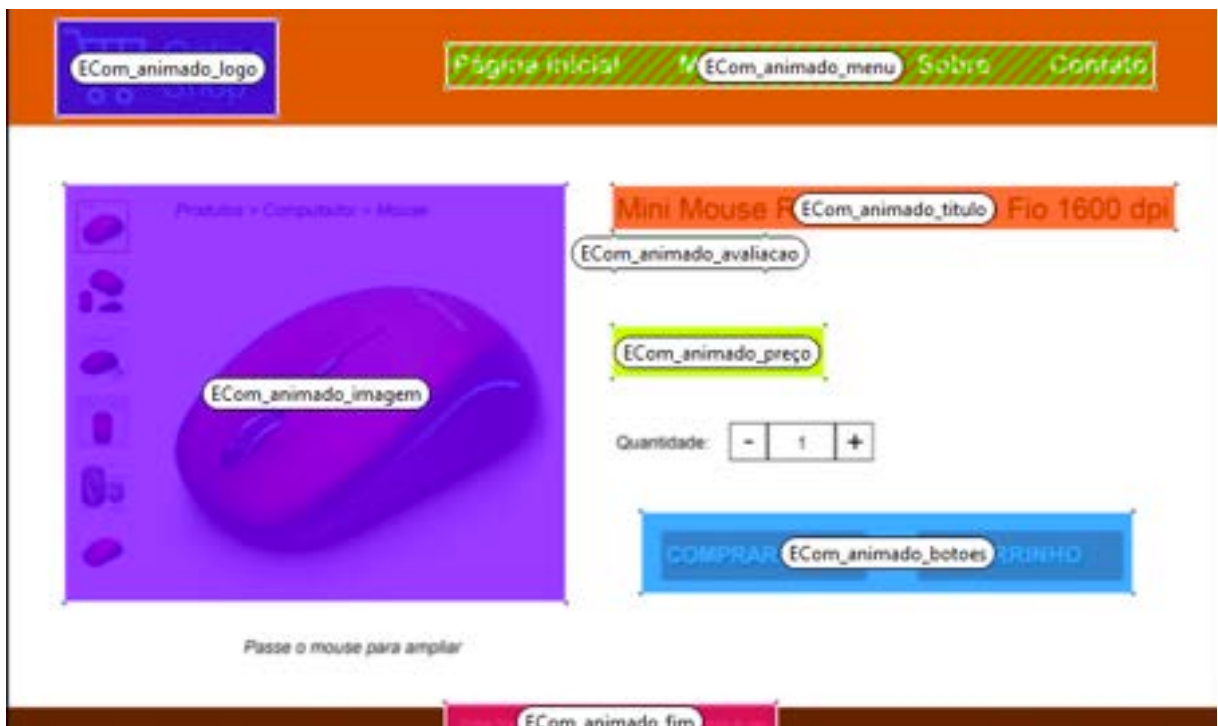
Source: Designed by author.

Figure 33 - Static e-Commerce AOIs



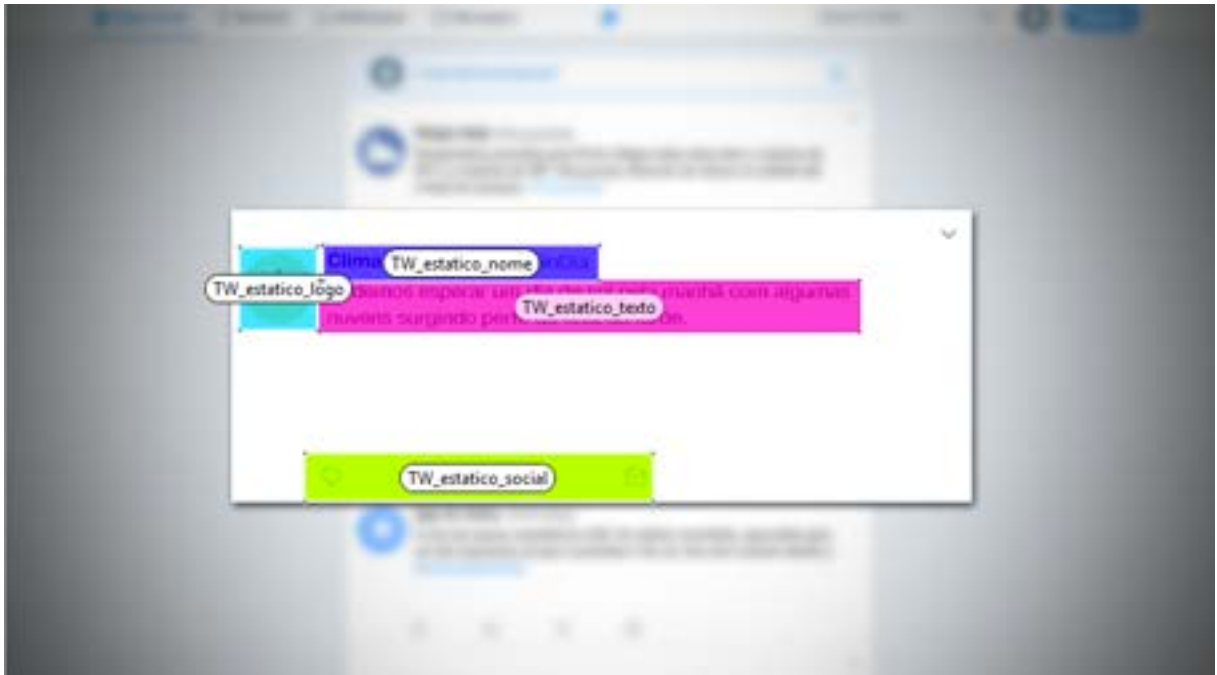
Source: Designed by author.

Figure 34 - Animated e-Commerce AOIs



Source: Designed by author.

Figure 35 - Static Twitter post AOIs



Source: Designed by author.

Figure 36 - Animated Twitter Post AOIs



Source: Designed by author.

Figure 37 - Twitter Timeline AOIs



Source: Designed by author.