

The influence of brand anthropomorphism in user's online engagement



THE INFLUENCE OF BRAND ANTHROPOMORPHISM IN
USER'S ONLINE ENGAGEMENT: AN EXPLORATORY
STUDY IN THE HEALTHY FOOD CONTEXT

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Resumo

O uso do Antropomorfismo como estratégia de criação de conteúdo está amplamente disseminado, estando presente num contexto online através de diferentes formatos, contudo, existem apenas alguns estudos que avaliam a eficácia dessa estratégia.

O presente estudo pretende preencher essa lacuna, explorando o Antropomorfismo nas redes sociais como estratégia para melhorar o envolvimento dos utilizadores, bem como avaliar o seu possível contributo na promoção de hábitos alimentares saudáveis, de informações nutricionais e de atividade física para combater a obesidade, através de uma análise de conteúdo às publicações das marcas nas suas páginas no Facebook.

O estudo centra-se em três dimensões do Antropomorfismo relacionadas com a aparência externa dos produtos. Para tal, foram recolhidas 415 publicações, das quais 315 deviam apresentar um dos tipos de Antropomorfismo que estão presentes em uma das dimensões. As restantes 100 publicações não apresentavam caracteres humanizados.

Os resultados obtidos através da comparação entre publicações humanizadas e publicações não-humanizadas concluíram que o Antropomorfismo das marcas online teve um impacto mais positivo no número de “gostos”, sugerindo que esta pode ser uma estratégia para enriquecer o conteúdo online, e interagir com os utilizadores de forma a despertar atitudes positivas por parte dos mesmos, em relação à página da marca. Além disso, o envolvimento dos utilizadores não foi influenciado pelo tipo de conteúdo usado nas publicações humanizadas. Alguns estudos fornecidos são consistentes com estes resultados.

Devido à singularidade da pesquisa e às publicações recolhidas apenas se terem focado em três dimensões, outras estratégias antropomórficas deverão ser estudadas neste contexto.

Palavras-chave: Antropomorfismo das Marcas, Criação de Conteúdo, Internet, Redes Sociais

JEL Classification: M31- Marketing; M37- Advertising

Abstract

The use of Anthropomorphism as a strategy for creating content is widely disseminated, being present in an online context through different formats; however, there are only a few studies that evaluate the effectiveness of these strategies.

The current research tries to address this gap and explores Anthropomorphism in social networks as a strategy to improve users' engagement, and its possible contribution to the promotion of healthy eating habits, nutritional information and physical activity to fight obesity, through a content analysis of brand publications on their Facebook pages.

The study focuses on three dimensions of Anthropomorphism related to the external appearance of brand products. In this sense, there were collected 415 posts, of which 315 had to show one of the anthropomorphic characters presented in one of the dimensions. The remaining 100 posts did not present anthropomorphic characters.

The results obtained by comparing the humanized posts with the non-humanized ones allowed concluding that brand Anthropomorphism online had a higher positive impact on the number of likes, suggesting that it can be a strategy to enrich content online, and interact with users in order to arouse positive attitudes towards the brand page. Furthermore, it was concluded that the users' engagement did not differ by content type used in the anthropomorphized posts.

Due to the uniqueness of the research, and the posts collected only have focused on three dimensions of Anthropomorphism; other anthropomorphic strategies should be studied in this context.

Key Words: Brand Anthropomorphism, Content Creation, Internet, Social Networks

JEL Classification: M31- Marketing; M37- Advertising

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1. Introduction

The way consumers access and share information has been changing, especially due to the development of Web 2.0, known as social media. Social media includes Internet-based applications such as blogs, content communities and social networking sites, which allow users to create, edit, share and interact with online content. They have also revolutionized the way people communicate and shop, as well as the way ideas and information about products and services spread all over the world. As a result, we are witnessing a modification in the market power, which is no longer in the hands of companies.

Therefore, in the Digital Age we live in, if companies want to follow this new type of communication, they must be where the consumer is. To achieve this, they need not only to be present online, namely by setting up their own website or a page on a social network but also develop collaborative relationships in those places, since consumer interaction and participation can contribute to the value creation.

This requires the development of a digital marketing strategy, which should be integrated with the other channels used. That strategy will help marketers understand consumers' needs and wants better, the perception that consumers have about the brands, as well as the best ways to approach them and satisfy their needs, in order to develop long-term relationships.

The need to create long-term relationships based on satisfaction and brand loyalty make marketers invest in a more emotional communication, sometimes even attributing brands physical and personality traits of humans.

Consequently, brands are becoming a lot more humanized/anthropomorphized. Humanizing a brand means to make it more human-like, by giving it, for example, a face or a part of the face and elevating it with stories, to involve customers who may identify themselves with that brand.

Aggarwal and McGill (2007) concluded that consumers are more likely to evaluate a product positively if it has been anthropomorphized, especially if it reflects the personality traits they believe to be positive. In another study, Aggarwal and McGill (2012) concluded that when a brand was anthropomorphized and people liked it, they seemed to be more willing to follow the behaviour advised by that brand. On the other hand, if they did not, they would reveal a reversed behaviour. These findings prove that Anthropomorphism may contribute to the change of a habit. This study was conducted in a health context, where a health brand was

manipulated. It showed that when customers like such an anthropomorphized brand, they are more open to following a healthy lifestyle.

Although Anthropomorphism has been studied in the marketing literature, it has yet to be further researched in the field of the social media (Hudson *et al.*, 2016). Its impact on social media metrics, particularly on Facebook metrics, such as the number of likes, comments, and shares, have not been studied yet. However, it is expected that, as it happened in the studies of (Aggarwal and McGill, 2007; Aggarwal and McGill, 2012), if a product is anthropomorphized in a social network, consumers are more likely to evaluate it positively, for instance, by putting a like on a post or sharing it.

To validate these expectations, we propose an exploratory study to examine the Anthropomorphism in social networks; more precisely its impact on likes, comments, and shares on Facebook brand pages. To begin with, the goal is to provide evidence about the usefulness of this strategy online to improve users' engagement. In a second stage, the impact of specific types of contents in likes, comments, and shares in humanized posts is going to be measured, to identify which type of content (always focused on healthy eating habits, nutrition tips, food benefits and physical exercise) that combined with this strategy, could have a positive contribution to the promotion of healthy eating habits and physical activity in order to fight obesity.

To achieve these goals, the food nutrition and healthy lifestyle context were chosen, as recommended by the World Health Organization (WHO). This organization defends that companies may play an important role in obesity prevention; not only by producing healthy products, but also through the way they communicate those products, in order to influence people's consumption.

According to the World Health Organization (WHO), obesity rates have more than doubled since 1980. Predictions are that they will continue to grow, becoming a problem not only in high-income countries but more recently, also in low and middle-income countries. WHO, governments, international partners, civil society, non-governmental organizations and the private sector all play a preponderant role in contributing to obesity prevention, especially in a time where the search for healthy products is growing, and consumers' mindset about this type of food is changing, showing more willingness to pay more for products that privilege health and weight loss (Nielsen, 2015). This is possible to observe in the Naturally healthy

(NH) offering, esteemed at USD 249 billion globally in 2016, expecting to grow USD 42 billion by 2021 (Euromonitor, 2017).

Measuring the consumers' engagement online creates a matter of interest for the insights that can be obtained. It allows, for instance, to identify which type of posts can generate more interactions especially regarding content, the kind of followers that are engaging most with brand posts, and to attract more consumers to the website (Socialbakers, 2014). In this context, by producing content that is interesting for costumers, brands will not only engage more with them but also contribute to the promotion of a healthy lifestyle, thus lowering obesity rates and other diseases associated with unhealthy behaviours.

2. Literature Review

2.1 Obesity over the world

According to the World Health Organization (WHOa, 2016), a global health organization that has been engaged since 1990, in combating different diseases such as obesity and overweight, define them as “...*abnormal or excessive fat accumulation that may impair health*”. Worldwide obesity has more than doubled since 1980. Besides that, in 2014 nearly 1.9 billion adults over the age of 18 were overweight (39% of the world's adult population). Of these, over 600 million were obese (13% of the world's adult population).

Concerning children, WHO estimated that in 2014 there were 41 million children under the age of 5 overweight or obese. If this trend continues, in 2025, the number of obese or overweight children is going to be 70 million (WHOOb, x). If in the past obesity and overweight were problems linked to high-income countries, now these problems are growing in low and middle income countries, mainly in urban settings. Africa is one of the countries where it's possible to verify this reality due to the number of children who are overweight or obese, which has practically doubled from 5.4 million in 1990 to 10.6 million in 2014. In that year, Asia had nearly half of the children under 5 overweight or obese in the world, representing 41 million children.

In Portugal, according to a survey made by (INE, 2014) in 2014, there were 4.5 million of Portuguese adults overweight, and 1.4 million were obese (represents 52.8% of total population), which represented a growth of 1.9 percentage points compared to 2005/2006. Regarding children, a study made by (APCOI, x) in 2013/2014, showed that 33.3% of children between the age of 2 and 12 were overweight, 16.8% of that are obese. (APCOI, x) also said that in the European Commission, Portugal is one of the countries with the biggest number of children affected by these diseases.

These diseases appear when there is an energy disparity between calories consumed and calories expended, which can occur due to an augmented ingestion of energy-dense foods that contain higher levels of fat, and more physical inactivity as a result of the sedentary life, a consequence of many forms of work, shifting modes of transportation, and increasing urbanization (WHOa, 2016).

Being overweight and obesity are linked to other diseases such as cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers. Childhood obesity is connected to a bigger probability of obesity, early death and disability in adulthood, breathing difficulties,

increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects (WHOa, 2016).

In order to fight these diseases, supportive environments, as well as communities, are vital in modelling people's choices, by advising healthier foods and regular physical activity (WHOa, 2016). The food industry can also play a major role in this fight by ensuring the implementation of policies that allow physical activity and healthier dietary choices (WHOa, 2016). It is also important to have these policies easily accessible to all consumers and limit the marketing of foods high in sugars, salt and fats, especially the food produced for children and teenagers (WHOa, 2016).

2.2 The role of communication in changing eating habits

Nutrition Marketing is defined as all the marketing of food and beverages techniques, which invest in health and nutrition information further than the minimum requirements. It comprises television marketing, radio or food labels (Colby *et al.*, 2012).

This means that marketing influences the consumption behaviour and, as suggested by WHO, it can play an important role on changing food habits towards a healthy lifestyle. Other authors have studied the impact of marketing in changing food habits, for instance, the impact of food marketing on children and teenagers, how it can contribute to obesity in these age scales, and what can be done to reduce this reality (Harris *et al.*, 2009; Galbraith-Emami and Lobstein, 2013).

Chandon and Wansink (2012) presented recent food marketing practices and show how they may influence food intake (for instance price promotions, branding and labelling, altering packages and the size of serving containers), how brands can achieve their business goals and, at the same time, help people to embrace healthy food habits.

Bublitz and Peracchio (2015) examined some practices conducted by snack food and beverage industries with hedonic foods that can be used to promote healthy foods choices, in order to increase the consumption of this industry. They concluded that the determination to stimulate healthy eating should incorporate not only the traditional food marketing tactics to highlight flavour and sensory properties possible to generate an affective answer, but also combine it with nutrient content (for example, combine humour with nutrient content).

When ads activate an emotional response, they are usually better at modelling attitudes in the direction of the ad and the brand (Geuens, De Pelsmacker and Faseur, 2011).

Creativity can be preponderant in the promotion of healthy food, for instance, giving creative names to those foods because it impacts consumers to try it (Wansink, van Ittersum and Painter, 2005). The positioning can also be important because healthy products sometimes bring to mind negative taste expectation from consumers who have the mindset that if food is healthy, it must not taste very good (Ragunathan, Naylor and Hoyer, 2006).

Other marketing techniques to promote the healthy food are product packaging, retail displays, and alternative media, which are social media, online and mobile (Bublitz and Peracchio, 2015).

There are several benefits for society if there is a change in the Marketing communication of food and beverage consumption, and Bublitz and Peracchio (2015) propose some of them for farmers/producers, corporate entities, consumers and society/public policies.

2.3 Social Media

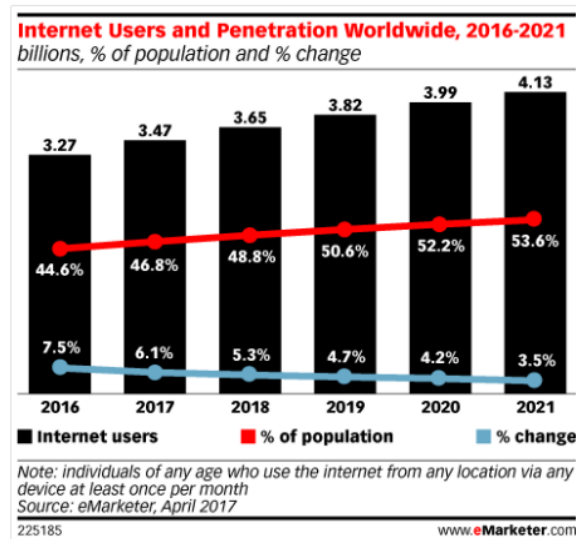
In the last decade, the technological sector was marked by the appearance of Web 2.0. It is defined by Cooke and Buckley (2008:277) as “...*the new generation of tools and services that allow private individuals to publish and collaborate in ways previously available only to corporations with serious budgets, or to dedicated enthusiasts and semi-professional web builders*”.

Social Media appears as a consequence of Web 2.0, being defined by Kaplan and Haenlein (2010:61) as a “...*group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content*” and classified into six different categories: collaborative projects, blogs and micro blogs, content communities, social networking sites, virtual game worlds and virtual social worlds.

With this development, consumers are able not only to communicate but also to share content online, as well as to have access to a huge amount of information, creating multiple styles of computer-mediated communication that result in community foundation (Cooke and Buckley, 2008). As a result, the number of users online does not stop growing, and it tends to continue. If in December 1995 the number of Internet users was 16 million (0.4% of world population),

in June 2017 this value grew to 3.835 billion users (51% of world population) (Internet Growth Statistics, 2017). Concerning eMarketer (2017), the tendency is to continue growing until 2021 (Figure 1.), especially due to the development of e-commerce and mobile Internet.

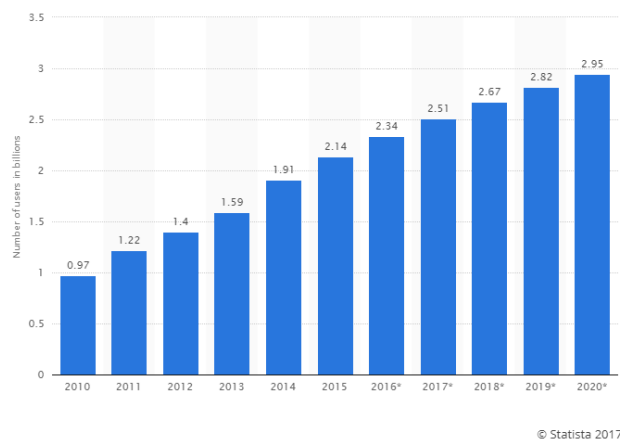
Figure 1- Internet Users and Penetration Worldwide, 2016-2021, in billions and % change



Source: eMarketer

In line with social media users, concerning Statista (2017b), this number will grow from 0.97 billion in 2010 to 2.67 billion users in 2018, and in 2020 it is predicted to launch 2.95 billion users (Figure 2.).

Figure 2- Number of social media users worldwide from 2010 to 2020 (in billions)



Source: Statista 2017

The study of social media and its impact on consumers and organizations is progressively attracting academic attention as well as strategists and marketers: The impact of social media on brand building (Moro, Rita and Vala, 2015; Hudson *et al.*, 2016), motivations for users to share content (Fu, Wu and Cho, 2017), popularity of brand posts (De Vries, Gensler, and Leeftang, 2012; Sabate *et al.*, 2014), and brand communities (Zaglia, 2013).

2.3.1 The role of social network sites (SNS) in changing food habits

Social network sites are a part of social media, being defined by Boyd and Ellison (2010) as web-based facilities that let individuals build a public or semi-public profile within a limited system, articulate a list of other users with whom they share a social network and view a list of their connections as well as the connections of others. There, users can create a profile, include text and visual information, as well as audio and video content, blogging, instant messaging, chatting, update notifications to appear in friends profile and plan meetings (Zaglia, 2013). Popular social network sites are Facebook, LinkedIn, and Pinterest.

Several companies have profiles on social networking sites to support the creation of brand communities (Muniz and O' Guinn, 2001), engagement (Schivinski, Christodoulides and Dabrowski, 2016), for the purpose of marketing research (Kozinets, 2002), positioning, gaining insights for product innovation, increase the interest for the brand and to build meaningful relationships with users (Roederkerk and Pauwels, 2016). Additionally, brands can gain awareness through the quickest way to products and services; and opinions can be spread (Berger and Milkman, 2012).

Brand communities are “... *specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand (...), it is marked by a shared consciousness, rituals and traditions, and a sense of moral responsibility*” (Muniz and O' Guinn, 2001: 412). They also exist in social network sites, and they can play an important role in changing food habits towards healthy choices, with their capacity to connect consumers, enable many-to-many communication (Gensler *et al.*, 2013) and sharing information (Närvänen, Kartastenpää and Kuusela, 2013).

Regarding brand communities for commercial purposes, the actively user's participation brings benefits to the brand, especially loyalty and a growth in the purchase intention (Algesheimer, Borle, Dholakia and Singh, 2010), and the sharing of opinions on a particular

product/brand contributes for the creation of a communication based on word-of-mouth (McAlexander *et al.*, 2002).

Concerning the food and lifestyle communities, they present a huge impact on modelling identity and in the sharing of new food regimes and philosophies for being healthier, are becoming popular (Närvänen, Kartastenpää and Kuusela, 2013).

In the health context, health communication is a vital issue in disease prevention and health promotion (Liang and Scammon, 2011). Health-related Facebook pages as well as brand pages can be useful for keeping and promoting that kind of communication. First, posts integrate information and messages to inform, motivate, and remind users to engage in health behaviours. Second, posts can invite users to find more health information (Woolley and Peterson, 2012). Furthermore, Facebook allows users to become members of an extensive variety of interest groups linked to health, some of them are private, and give the opportunity for users to actively participate with their doubts and share their opinions, as well as sending private messages to their network of friends (Ballantine and Stephenson, 2011).

Nowadays, it is also possible to find social network sites linked to health, such as myfitnesspal.com and DailyBurn.com. Those online communities provide a way of communication for their members in order to give social support, monitor food consumption and create challenges to encourage them to modify their lifestyles (Ba and Wang, 2013). In March 2015, Google recorded more than 71 million of support groups in the health and wellness group (de la Peña and Quintanilla, 2015). This shows the significance of digital media in the delivery of support to improve health and change behaviours.

2.4 The importance of measuring consumer engagement online

According to Scheinbaum (2016:342) *digital engagement* is an “...*online behaviour resulting from a consumer's thoughts, emotional connection, and intrinsic motivation to interact and cooperate with a brand or its community members in a digital, mobile, or social media setting*”. Consumers come into contact with brands through social media, by reading, writing, watching, commenting, "liking," sharing, and so on, which make them move from the stage of "observer" to a "media contributor"(Schivinski, Christodoulides and Dabrowski, 2016). Muntinga, Moorman and Smit (2011) explored the motivations for consumers engage in brand-related activities online. For that, they created the concept of COBRA, a behavioural construct that means consumer brand-related activity. For them, there are three levels of

consumer engagement online: consuming, contributing and creating. Those online activities are influenced by consumers' motivation to be online, such as entertainment, integration and social interaction, personal identity, information, remuneration, and empowerment (Muntinga, Moorman and Smit, 2011).

For marketers, as was said before, this is a way to interact with existing and potential customers and gain unmediated consumer insights faster than in the past (Hudson *et al.*, 2016).

Those insights are obtained through social media analytics. According to Zeng *et al.* (2010: 14), "...*Social media analytics is concerned with developing and evaluating informatics tools and frameworks to collect, monitor, analyse, summarise, and visualise Social media data, usually driven by specific requirements from a target application.*" It includes business intelligence tools such as reporting, dash-boarding, visualisation, search, event-driven alerting and text mining (Alavi, 2016). Measuring clicks, conversions, shares, traffic and web analytics are simple examples of social media analytics.

In the last years, new models of distribution appeared as a consequence of the development of the Internet and the need of building long-term relationships with consumers. Beck and Rygl (2015) proposed a categorization for those models: the "multichannel", "cross-channel" and "omni-channel". The "omni-channel" is viewed as the future of e-commerce, being described by the authors previews as a distribution channel where consumers enjoy all of the channels that are now provided by technology to communicate, such as a physical store, catalogue, telephone, online shop and mobile shop.

As a result, the insights obtained from consumers through the creation of metrics to analyse consumers engagement online, are crucial to attract consumers to the websites, provide useful information and create high personalized relationships, in a digital Era where the buyers process starts online, in any place the consumer is, the consumer is more informed, follows recommendations of other consumers and does not want to lose time.

By developing meaningful campaigns to attract consumers' attention online may result in a bigger volume of word-of-mouth and possibly raise the company's revenue (Pletikosa and Michahelles, 2013).

2.5 Facebook, a huge platform to measure consumer's engagement

Facebook is the most popular social network with 1.988 billion monthly active users as of August 2017, followed by Youtube (1.5 billion) and WhatsApp (1.2 billion) (Statista, 2017c). According to “Digital in 2017 Global Overview Report” from *We Are Social and Hootsuite*, in January of the same year, 87% of Facebook users accessed the platform through mobile devices, 55% used Facebook each day, 44% of profiles were declared as a Female while 56% as a Male profile (We are social, 2017). Concerning the distribution of Facebook users by age in the same report, the majority of users are 18 years old, followed by the group of users that are 26 years old and +65 years old, showing that Facebook does not have age boundaries.

It provides several facilities for companies to use for marketing drive: Facebook Ads, Facebook Brand Pages, Instagram, Audience Network and Atlas (Facebook, 2017a), which help companies launch their goals, for instance create awareness, generate leads, or increase sales.

The *brand pages* or “fan pages” (Sabate *et al.*, 2014:1002) are “...*brand oriented profiles which have access to extra tools such as exhaustive analytics, better content and fans administration.*”

We call a “*post*” the content shared on brand pages, and this content is the central part of the page, identified as “*wall*” or timeline. The page can have one or more administrators, which are responsible for managing the page creating, and removing content presented in the page. The members of the brand page are “users” or “fans” (Pletikosa and Michahelles, 2013).

On a Facebook brand page, users are allowed to engage with a company through posting content on the brand page (if the policy set by the company gives permission for that), commenting a post, show interest in an existing post by clicking the “like” button or other emojis and sharing the post on their profile wall or on a friend's profile (Pletikosa and Michahelles, 2013). These actions produce a story, which appear on the wall of all their friends, demonstrating a form of WOM communication and putting users as brand evangelists (Pletikosa and Michahelles, 2013).

Engage, or as Facebook attributes “*Page Engagement*”, reflects the total number of actions that users take on a Facebook (Facebook, 2017b). This metric shows how users interacted with the brand page and posts because of the ads, revealing how significant the ads were to the consumers (Facebook, 2017b).

Measuring the consumers engagement online is preponderant for the insights that can be obtained on consumers who interact with the brand once Facebook provides statistics about demographics (age and gender breakdowns, education levels, job titles, relationship statuses, etc), interests (hobbies and products they may be interested in purchasing) and behaviours (associates relationship status, income, family size and location) of those consumers (Facebook, 2017a). This data helps brands to know better their target, as well as it can help in the creation of “personas” for future campaigns in order to reach more costumers similar to them (Facebook, 2017a).

Regarding the content of a post, the content is the tool that motivates interactions. So, it is important for brands to, not only publish content trying to address customers' motivations, but also providing interesting content for them when and where they need (Sabate *et al.*, 2014). A study conducted by Smith (2013), also concluded that users who live positive experiences with a brand's content on Facebook pages have a bigger probability to do a social media action than people who do not live those experiences like post a positive content, saying they prefer the brand, as well as practice an advocacy action, for instance recommend the brand.

Consequently, through the measurement of consumer engagement on Facebook, it is also possible to know which type of content in the posts can generate more interactions, and, in that sense, discover which is the type of content that is more interesting for consumers. When content satisfies customers, they can share it (Sabate *et al.*, 2014).

Also, when a brand collects a high volume of interactions from their social media activity, there is a high chance of increasing the traffic to their websites (Socialbakers, 2014).

For that, it's crucial for companies not only develop metrics to forecast the impact of individual published posts but also personalize the promotion of products and services, in order to optimize the posts (Moro, Rita and Vala, 2015).

2.6 Anthropomorphism

Anthropomorphism refers to the attribution of a human form, human characteristics or human behaviour to nonhuman things (Bartneck, Croft and Kulic, 2009). Epley, Waytz, and Cacioppo (2007) conjecture that it includes attributing mind intentions, effortful thinking, emotional states, and behavioural features to non-human objects.

It comes from the Greek words anthro_pos (meaning “human”) and morphe_ (meaning “shape” or “form”), and it is more than just attributing life to the non-living (i.e., animism).

Anthropomorphism implicates going beyond behavioural descriptions of fictional or observable actions to symbolize a mental agent or physical features using humanlike descriptors and can play an important role in social connection when human connection is missing (Epley, Waytz, and Cacioppo, 2007).

This concept has been explored in different academic disciplines such as psychological research, which has tried to show how people tend to anthropomorphize objects, for instance, cars (Windhager *et al.*, 2008) non-human agents, like supernatural agents (Epley *et al.*, 2008), and even to pets (Chartrand *et al.*, 2008). In marketing research, Batra *et al.* (2012) examined how consumers experience emotions towards brands that are usually felt between humans (love), Aggarwal and McGill (2007) showed how anthropomorphizing affects the liking of products, while Aggarwal and McGill (2012) the purchase behaviour. Delbaere *et al.* (2011) classified personification as a kind of Anthropomorphism and showed that personification presented in print advertising can lead to more positive emotions and bigger brand liking. Kim and McGill (2011) studied how Anthropomorphism effects risk perceptions and behaviour.

People can view the same brand on different levels of brand Anthropomorphism because the perception is affected by individual and brand factors (Hudson *et al.*, 2016). Children seem to anthropomorphize nonhuman agents more than adults (Epley, Waytz, and Cacioppo, 2007).

2.6.1 Anthropomorphism in marketing

Puzakova, Kwak, and Rocereto (2009:413) presented the concept of *anthropomorphized brands*, defining them as “...brands perceived by consumers as actual human beings with various emotional states, mind, soul, and conscious behaviours that can act as prominent members of social ties” and presented effectance motivation and sociality motivation as the reasons for consumers anthropomorphize brands. The higher the brand Anthropomorphism, the more probable consumers will apply social norms to observe and deal with the relationships with the brands (Hudson *et al.*, 2016).

Although the concept has been discussed among theorists for many years (Hudson *et al.*, 2016), in academic research, the consumers tend to anthropomorphize branded products that caught scholars' attention only recently (Guido and Peluso, 2015).

It usually happens in marketing, occasionally because marketers propose humanizing a brand or product and, other times because consumers see the human in the non-human language

(Aggarwal and McGill, 2012). Furthermore, products that can be anthropomorphized have a better opportunity of being successful in the long-term (Aggarwal and McGill, 2007), and consumers are less willing to replace them (Chandler and Schwarz, 2010).

As a result, it is possible to find different forms of Anthropomorphism. Some products show humanlike characteristics to make them more unique and memorable (e.g., the form of the Coke bottle), to allocate specific qualities that demonstrate what they stand for, and to make them more appealing and pleasant, for instance, ads for analogue clocks usually show 10:10 as the time, to show a smiling face. Marketers also create brand characters, mascots, and spokes-characters. They also give names and faces to brands as well as human emotions. Brand names are occasionally selected to evoke images of real people, and brand communication normally includes using first-person language (Aggarwal and McGill, 2012).

Rauschnabel and Ahuvia (2014) concluded that Anthropomorphism can be a powerful antecedent to brand love and proposed four ways to raise the level of perceived Anthropomorphism of brands: Communication in the first person, use of stimuli that imitate human characteristics, create a strong brand personality and interaction through social media.

Communication in the first person means, for instance, that there is a slogan which speaks in the first person "Hello, I am the brand X", increasing Anthropomorphism compared with slogans in third person. The chocolate brand Lindt followed this kind of communication by showing a packaging, which talks in the first person, for example "Hello, my name is Cookies & Cream". About the language in communication, some brands substitute personal pronouns such as "he" or "she" instead of "it" in order to inspire consumers to think of the products in human terms, as well as by mentioning to their "product family" as a substitute of their "product line" (Aggarwal and McGill, 2007).

The use of stimuli that copy human characteristics is a strategy already presented in the auto industry, where manufacturers frequently reproduce a humanoid expression when designing the front of a car (Aggarwal and McGill, 2007), or even in logos and pictures of the product (Delbaere *et al.*, 2011). Some brands, like 'Ralph Lauren' or 'Mr. Proper' show real or fictitious human names.

Generating a robust brand personality can also happen when using testimonials or a celebrity spokesperson, whose personality may be fit with the brand. In advertisements, the spokesperson that promotes the product is frequently the soul of the advertisement. Its characteristics such as popularity or trustworthiness have the ability to take control of

consumers' attention and impact purchase behaviour (Bhutada, Rollins and Perri, 2016). However, sometimes a spokesperson can damage the image of the brand when they become associated to scandals. Compared to a spokesperson, the animated spokes-character is more adaptable and easier to control (Bhutada, Rollins and Perri, 2016). A spokes-character consists in an animate being or animated object that is used to promote a product (Phillips, 1996). Consequently, a huge number of companies have implemented them in advertising promotion. M&M chocolate characters, and the Michelin Man are examples of spokes-characters.

2.6.2 Dimensions of brand Anthropomorphism

Concerning Guido and Peluso (2015) it is possible to identify two dimensions of anthropomorphic perception of branded products: the first one concerning the external appearance of branded products, and the second centred on the concept of self-brand congruity.

For the first dimension, some studies have suggested that an anthropomorphic perception of branded products might happen through an apparent similarity between the external appearance of such products and some human physical traits, for instance, a product package that seems to have a human body (Guido and Peluso, 2015).

Aggarwal and McGill, (2007) through their study on schema congruity theory, showed that the simplicity with which consumers can anthropomorphize products, depends on the schema in which products are presented and the presence or absence of product features that are human-like (such as a 'smiling' grille in a car). They concluded that products that are presented as human but which have a deficiency in human features are evaluated less positively than products that are presented as human and which have human-like features. Further, anthropomorphizing a product can generate more positive evaluations only when the type of person that comes to mind is related to positive moods.

The second dimension, self-brand congruity, is the level in which products reproduce consumers' perceptions of their selves, for instance, a product whose image is consistent with an actual or ideal personality trait of consumers (Sirgy, 1982). This can happen because consumers have the habit of selecting branded products that help them express their social self-views (Aaker, 1999).

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The self-congruity effect on product choice explains the consumers' trends to perceive themselves in their favorite brands (Lam *et al.*, 2013).

Brands are evaluated upon the perceived similarity between their self-concept and human personalities that they observe. When the evaluation is positive, which represents the situations where consumers recognize the image of a brand as similar to their own self-concept, they will develop higher levels of brand preferences and brand loyalty (Puzakova, Kwak, and Rocereto, 2009).

3. Research questions

The main goal of the investigation is to examine the Anthropomorphism in social network sites, as a strategy to change habits, namely in the promotion of healthy eating habits, nutritional information and physical activity to fight obesity. In order to do that, two models of investigation were proposed. In Model 1, was examined the Anthropomorphism in social networks, more precisely its impact on likes, comments and shares on humanized and non-humanized posts, with the goal to provide evidence about the usefulness of this online strategy to improve users' engagement. And, in Model 2, was measured the impact of specific types of contents in likes, comments and shares on humanized posts, in order to identify which type of content (always focused on healthy eating habits, nutrition tips, food benefits and physical exercise) combined best with this strategy and that could have a positive contribution in the promotion of healthy food habits and physical activity to fight obesity. For this reason, the food nutrition and healthy lifestyle context was chosen, due to the positive contribution that marketing communications can provide, constituting a vehicle to change eating habits, not only in an offline context (through packaging, changing prices, labelling, and even television advertising), but also in an online context, especially in communication through social networks.

Regarding Model 1, (Nan *et al.*, 2006) observed the influence of web-based anthropomorphic agents on consumers' attitudes concerning the website and the brand. They found that the presence (versus absence) of an anthropomorphic agent resulted in significantly more favourable attitudes towards the website, which in return contributed to more web traffic and the increase in the web return rate. However, it revealed minimal effect on attitudes towards the brand, probably because of prior experiences with the product category (Nan *et al.*, 2006). The authors suggested connecting anthropomorphic agents more closely with the brand to overcome this problem, for example, through the creation of a humanlike animated brand logo. This will transfer the social presence to the brand, generating more positive brand attitudes, which is increased by anthropomorphic agents. If the attitude towards the brand is more positive, it means that consumers are more willing to purchase a product.

Furthermore, they concluded that the presence of the anthropomorphic agent gave more credibility to the website, as well as positive emotional responses.

Consistent with these results, Hudson *et al.* (2016) investigated brand Anthropomorphism in consumer brand relationships in the digital world, and concluded that anthropomorphizing

brands will not guarantee a robust relationship between the brand and consumer; however, it can constitute an important vehicle and facilitate an interpersonal view on social media interactions with a brand.

Consequently, the first hypothesis aims to validate that brand Anthropomorphism, present in social networks through the humanization of brand posts, will generate more likes, more comments and more shares than non-humanized brand posts.

H1: Humanized posts have a bigger positive impact in the number of likes, comments and shares than non-humanized posts.

Concerning Model 2, it is known that marketers can play an important role in changing eating habits towards a healthy lifestyle (WHO, 2016). This is possible, for instance, by using some strategies applied to the consumption of hedonic foods in the promotion of healthy food, specifically, combining healthy benefit contents with emotions and sensory dimensions (Bublitz and Peracchio, 2015).

Kite *et al.* (2016) focused on measuring the features of Facebook posts that are connected with higher user engagement in Australian public health organisations Facebook pages. In order to achieve this, they developed a framework to identify the communication techniques used.

Concerning the type of content presented in Facebook posts of the pages that were analysed, they identified seven types of content (“call-to-action”, “humour”, “informative”, “positive emotional appeal”, “fear appeal”, “testimonial” and “instructive”), and tested their impact on the number of comments, likes and shares.

They concluded that posts with humorous content received fewer likes and shares, but more comments than posts with “call-to-action” content thanks to the greatly subjective nature of humour-posts that are considered funny by some users, may not be by others.

While posts with “informative” content were two times more shared, they had no visible effect on likes or comments. Rather, posts that comprise new information about a public health issue seem to suggest a greater level of interest and engagement from users. Another explanation for this is that public health organisations are generating emotive content that does not produce enough emotions in users to encourage engagement beyond liking a post or are targeting the ‘wrong’ emotions.

“Positive emotional appeal” content produced more likes, but less shares than “call-to-action” content.

Posts with testimonials received less shares than “call-to-action” posts.

Posts with “fear appeal” content got more comments on average than “call-to-action” posts, while “instructive” posts received fewer.

Other authors have shown the impact of different types of content on online engagement: (De Vries, Gensler and Leeflang, (2012); Pletikosa and Michahelles, 2013).

De Vries, Gensler, and Leeflang, (2012) scrutinised the attractiveness of brand posts, by analysing them on Facebook and online advertising. They observed that the presence of “informative” content in a brand post was not significantly related to the number of likes, whereas the “entertainment” content was a bit more significant but negatively related to the number of likes. This may occur because these kinds of posts encompass content that is unconnected to the brand. Finally, the number of comments presented in brand posts was neither influenced by “informative” nor by “entertainment” contents.

Pletikosa and Michahelles, (2013) also analysed the characteristics of the content created by companies that have impact on the level of online engagement on Facebook brand pages. They concluded that the “entertaining” content had a huge influence on consumers’ engagement on all levels: comments, likes and shares. While brand posts with “informative” content presented high levels of likes and comments, they did not observe any effect on the number of shares, suggesting that the brand product loses significance outside communities.

For (Muntinga *et al.*, 2011) entertainment and information are two motivations for online engagement with brand-related content through consumption, creation, and contribution.

However, as the studies presented are not conclusive, since different authors show different results, and no study was found that combines online engagement with Anthropomorphism and a specific content, we formulated the remaining hypothesis based on the assumption of Kite *et al.*, (2016): using “call-to-action” content as a reference since it is the one that best entices people to act in a direct way. Although these authors applied their content classification in public health organizations, we will apply that classification in commercial pages. Is proposed:

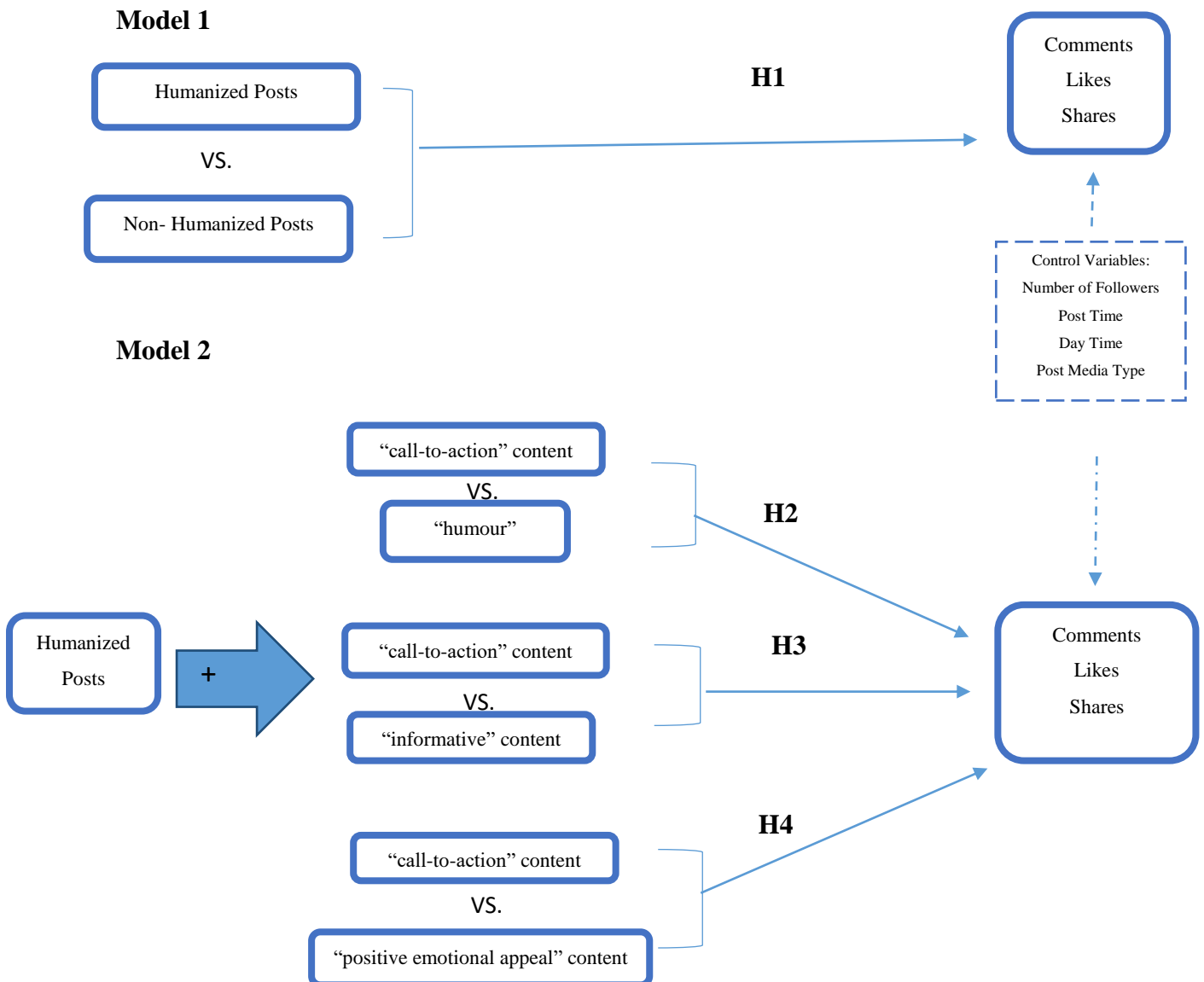
H2: Humanized posts with “Call-to-action” content generate more likes, more comments and more shares than the humanized posts with “humour” content.

H3: Humanized posts with “Call-to-action” content generate more likes, more comments and more shares than the humanized posts with “informative” content.

H4: Humanized posts with “Call-to-action” content generate more likes, more comments and more shares than the humanized posts with “Positive Emotional Appeal” content.

With the goal of better understanding the hypothesis applied in this study and the relationship between each variable, we built a conceptual framework presented in Figure 3.

Figure 3- Conceptual Framework Proposed



4. Methodology

4.1 Research Approach

According to Malhotra and Birks (2007:69), the research design can be classified as *exploratory* or *conclusive*. While the conclusive research is characterised by the authors as “...*the measurement of clearly defined marketing phenomena*” the exploratory research consists in “...*a flexible and evolving approach to understand marketing phenomena that are inherently difficult to measure*”. The same author, finds the exploratory research significant in situations where the researcher does not have sufficient understanding to continue with the research project, is flexible and versatile, and is not common to apply questionnaires, large samples and probability sampling plans. As it is not conclusive, the focus of the investigation may shift continuously as new visions are revealed, giving more opportunity for the researcher be creative.

This study presents an exploratory research because were explored variables in a different context than the ones applied in the previous studies, and as Anthropomorphism was not yet much explored in social media, more precisely, its impact in consumers engagement (number of likes, comments and shares), and literature about this relationship was not found, furthermore, questionnaires were substituted by counting of data.

4.2 Sample

Malhotra and Birks (2007:405) define *Universe/ Population* as “...*the aggregate of all the elements, sharing some common set of characteristics, that comprise the universe for the purpose of the marketing research problem*”. As a result, the Facebook brand pages linked to FMCG industry, more precisely food and beverage, constitutes the population/universe of the study. The social media platform Facebook was chosen because, first of all, it is the most popular social network. Second, because of the engagement that users can have with a company, through posting content on the wall, commenting posts made by companies, show curiosity for a post by clicking the like button, and sharing posts on a profile. Third, because of the tools provided to marketers to build their presence online.

About the FMGC industry - food and beverage, is directly linked to the theme of the dissertation - promoting healthy food habits, nutritional information and physical activities. This industry is characterized for having goods which are planned for everyday private

consumption and includes food and non-food categories such as food and beverages, personal care, household, cleaning products and so one.

The brand pages selected are presented in the following table (Appendix 1) because they are connected to the prepositions and theme of the study, have more than 10.000 followers, and theirs posts contained, at least, an anthropomorphic character (within the characters selected in this study), a message about at least one of the following topics: healthy habits, nutritional information or elicit physical activities, as well as engagement (likes, and/or comments and/or shares). Only commercial brand pages were selected. Only 100 brand posts do not contain anthropomorphic characters.

The brand pages are official and presented in different countries around the world, consequently some brand posts were translated in order to transmit the message.

The *sample size*, “...the number of elements to be included in a study” (Malhotra and Birks, 2007:408), includes 415 brand posts. No more than 20 posts for brand were collected. This sample size was chosen because, according to Uma (2003), a sample size between 50 and 500 is suitable for researches.

The sample technique chosen was *quota sampling*, defined by Malhotra and Birks (2007:412) as “...a non-probability sampling technique that is a two-stage restricted judgemental sampling. The first stage consists of developing control categories or quotas of population elements. In the second stage, sample elements are selected based on convenience or judgement”. Consequently, in the first stage were selected the variables for the analyses and the specific characteristic to choose the post, and in the second stage the posts were selected one-by-one based on that categories.

4.3 Variables for Investigation

The research variables used emerged mostly from previous studies. The content follows the characterization made by Kite *et al.*, (2016). They classified the content of the posts collected as it is presented in Table 1.

Table 1- Characterization of the type of content by the originals' authors

Type of Content	Description
Call-to-Action	Encourages users to undertake a specific action. (e.g. call a quitline, make an appointment, register for a program or event etc.). A call-to-action was given precedence of instructive or informative messages.
Humour	Uses any humorous technique (e.g. sarcasm, jokes, memes etc.) to convey a health message.
Informative	Provides information on a health issue, its associated behaviours and/or associated consequences or benefits.
Positive Emotional Appeal	Aims to elicit positive emotions like hope and excitement in users. Also includes posts that aim to generate a positive feeling about the brand.
Fear Appeal	Aims to elicit fear or other negative emotions in users.
Testimonial	Use of 'real' people and/or tells a personal story to encourage behaviour change or to generate emotions about the brand or the health issue. A testimonial was given precedence over emotional appeals.
Instructive	Provides instruction on how to do a behaviour

Source: Kite *et al.* (2016)

However, as this characterization was elaborated for public health organisations, some adaptations were made in order to be adapted to commercial pages for FMCG industry- food and beverage (Table 3.).

With regards to anthropomorphic characters, initially, the focus was on the different scales which were linked to different strategies. But, due to the subjectivity of the analyses, each post was characterized with the scale proposed by Guido and Peluso (2015), this means just considering the external appearance of brand products. These authors suggested a scale that contains three dimensions: Human Body Lineaments, Human Facial Physiognomy and Self-Brand Congruity to measure brand Anthropomorphism.

This study focused in the first and the second dimensions, which evaluate the degree to which the exterior appearance of a branded product bring to mind the contours of a human body and the physiognomy of a human face. Each dimension evaluates the post according to the following characteristics:

Table 2- Anthropomorphic Dimensions

Human Facial Physiognomy	Human Body Lineaments
This branded product seems to have a human face	This branded product looks like a person
This branded product seems to have a nose	This branded product seems to have a human neck
This branded product seems to have eyes	This branded product seems to have a human trunk
This branded product seems to have a mouth	
This branded product seems to have ears	

Source: Guido and Peluso (2015)

The last dimension evaluates the level to which such a product reproduces how consumers recognise themselves.

Additionally, a third dimension was created to include posts that contain both dimensions (Human Facial Physiognomy and Human Body Lineaments) (Table 3.).

Concerning the outputs, for each post it was gathered the number of like emoji, comments and shares. Regarding the likes, the number of likes presented in the posts was collected. About comments, just counted the main ones to simplify the score. The shares were scored by just taking out of the post the number presented (Table 3.).

About the control variables, first of all, each post was classified by the day of the week (Monday, Tuesday, Wednesday, Thursday and Friday) and the weekend (Saturday and Sunday) of the posts' publication, and by the moment of the day, when the post was posted (00:00pm- 12:00am, 12:00-02:00pm, 02:00pm- 06:00pm, 06:00pm-00:00pm), in order to take in count, the working time, breaks and also the life after work (Table 3.). This information was controlled because nowadays profile walls are full of content that comes from the network, companies, etc. As a result, if the brand does not choose the time that engages more consumers to see the post, the post will not be seen (Pletikosa and Michahelles, 2013).

Second, different studies have pointed out that social features like the number of friends or followers, have impact in retweet ability and commenting activity. Zhang *et al.* (2014) in the study about post popularity, discovered that the more followers a user shows, the greater potential audience messages posted by this user will have. As a result, each post was separated concerning the number of followers of the brand page. For that, we created six

intervals of brand followers: (10.000-210.000; 210.001-410.000; 410.001-610.000; 810.001-1.000.000; and+1.000.00)" (Table 3.).

Third, the post media type was also controlled, hence a post with a photo, a message or a video have different consequences in user's participation (Table 3.). These media types denote different levels of vividness (Daft and Lengel, 1986) as well as different levels of interactivity (Steuer, 1992). Each post was characterized by (text, picture, text and picture, video and text and video). Other variables considered for statistical analyses are presented in (Table 3).

4.4 Data Collection

4.4.1 Secondary Data

Secondary Data is presented by Malhotra and Birks (2007:817) as "...data collected for some purpose other than the problem at hand". In this study, Secondary Data involves an in-depth literature review based on scientific articles, internet websites, reports provided by companies, all about social networks and consumer participation in that social networks namely Facebook, as well brand Anthropomorphism, obesity and food marketing.

4.4.2 Primary Data

Malhotra and Birks (2007:45) define *Primary Data* as "...data originated by the researcher specifically to address the research problem". In this study, Primary Data consists of the direct observations of posts presented in Facebook brand pages and its collection. For this collection a framework was built in an Excel sheet (Table 3), in order to organize the information collected. That framework was created based on the literature review as well as the personal opinion of the researchers. The selection of brand pages was random, once they followed the Facebook recommendations to view other pages, although the posts chosen implied a judgment in the selection, as it was revealed previously.

Consequently, the process of collecting posts included the following steps: First, an excel sheet framework was built based on the literature review. Second, a Facebook research was made about brand pages of FMCG food and beverage. Third, it was observed if the brand page had more than 10.000 followers. Fourth, it was explored the posts that were posted between the interval chosen for the analyses. Fifth, the posts that fulfilled the requirements were selected. Sixth, after collecting the posts, the framework was filled concerning the

characteristics presented. The last step was the production of descriptive statistics about each variable.

Brand posts were collected between 1st January of 2016 and 8th of July of 2017, on Facebook brand pages.

Table 3-ExcelSheet for the collection of brand posts

Category	Characteristics	Author	Post Number
Type of Content			
Call to Action	Encourages users to undertake a specific action. Online (e.g. play a game online, answer a question, registration in an event.) or offline applying to a specific behaviour (eg. eating a healthy food, practising a physical activity, take care of health).	Kite <i>et al.</i> , (2016)	
Humour	Uses any humorous technique (e.g. sarcasm, jokes, memes etc.) to convey a health message about healthy habits, nutrition and physical activities.		
Informative	Provides information about healthy habits, and physical activities, its associated behaviours and/or associated consequences or benefits, as well information about the benefits of the products and its composition.		
Positive Emotional Appeal	Aims to elicit positive emotions like hope and excitement in users. Also includes posts that aim to generate a positive feeling about the brand.		
Fear Appeal	Aims to elicit fear or other negative emotions in users.		
Testimonial	Use of 'real' people and/or tells a personal story to encourage behaviour change or to generate emotions about the brand or the health issue, as well as advices of nutritionists.		
Instructive	Provides instruction on how to do a behaviour, for example execute a recipe.		
Anthropomorphic Characters			
Human Facial Physiognomy	This branded product seems to have a human face	Guido and Peluso, (2015)	
	This branded product seems to have a nose		
	This branded product seems to have eyes		
	This branded product seems to have a mouth		
	This branded product seems to have ears		
Human Body Lineaments	This branded product look like a person	Guido and Peluso, (2015)	
	This branded product seems to have a human neck		
	This branded product seems to have a human trunk		

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Category	Characteristics	Author	Post Number
Human Facial Physiognomy and Human Body Lineaments	The branded product seems to have characters of both dimensions		
No Anthropomorphism	Identification of posts that do not contain anthropomorphic characters considering the previews characterization.		
Post Engagement	Likes (Number of likes per post)		
	Comments (Number of comments per post)		
	Shares (Number of shares per post)		
Control Variables			
Week Day	Monday (The post was published on Monday)		
	Tuesday (The post was published on Tuesday)		
	Wednesday (The post was published on Wednesday)		
	Thursday (The post was published on Thursday)		
	Friday (The post was published on Friday)		
	Weekend (The post was published at the Weekend)		
Time of the Day	12:00 am inc- 12:00 pm (The post was published between 12:00 am inc- 12:00 pm)		
	12:00 pm inc - 02:00pm (The post was published between 12:00 pm inc - 02:00pm)		
	02:00pm inc -06:00pm (The post was published between 02:00pm inc -06:00pm)		
	06:00pm inc- 12:00 am (The post was published between 06:00pm inc- 12:00 am)		
Media Type	Text (The post includes a written message)		
	Picture (The post just includes a picture)		
	Text and Picture (The post includes a written message and a picture)		
	Video (The post just includes a video)		
	Text and Video (The post includes a written message and a video)		

Category	Characteristics	Post Number	Post Number
Followers	The number of followers is between 10.000-210.000		
	The number of followers is between 210.001-410.000		
	The number of followers is between 410.001-610.000		
	The number of followers is between 810.001-1.000.000		
	The number of followers is between +1.000.000		
Other Variables			
Brand Country	Identification of the country of the brand page.		

4.5 Data Analysis

The research hypotheses presented in the previous chapter were tested with a set of statistical analyses, including:

- Descriptive statistics;
- Two models were created, in order to test the hypothesis: while the Model 1 tests the differences in the mean of likes, comments and shares for humanized and non- humanized posts in Facebook, the Model 2 tests the differences in the mean of likes, comments and shares for four types of content, just considering humanized posts. In both models, it was applied a statistical parametric test (Independent Samples T Test) and, when its assumptions were not achieved it was applied the no-parametric test equivalent (Mann- Whitney). A random selection of SPSS was also applied in Model 1 in order to balance the sample.
- The reference to accept or reject the null hypothesis was a significance level of $p \leq 0.05$.
- Tests to the different assumptions about the distribution of variables for the application of the Independent Samples T Test: Kolmogorov-Smirnof (normality of the distribution) and Levene's Test (homogeneity of variances);
- The statistical analyses were conducted with SPSS (Statistical Package for the Social Sciences), version 23 for Windows;
- The appendix shows all the outputs produced in SPSS, to present in the sample characterization and hypothesis testing.

5. Results Analysis

5.1 Sample Characterization

In this chapter, it is presented the data collected through the analyses to the Facebook posts as well as the results of the hypothesis tested. The number of posts collected was 415, from 74 different brands. Each brand has in mean 6 posts. 315 out of 415 posts, contained at least one anthropomorphic character and the message pretended, while the remaining 100 just presented the message (Appendix 1).

Figure 4- Distribution of the sample by number of brand pages per country (%)

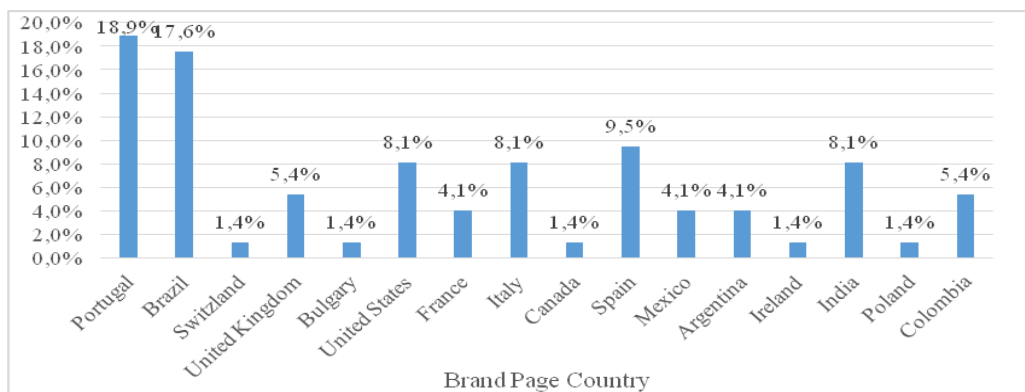


Figure 4. represents the number of brand pages per country. The brand pages are divided by sixteen countries. Portugal is the country with more brand pages (18,9%), followed by Brazil (17,6%), Spain (9,5%) and so on. Each country contains, in mean, about 5 brand pages (Appendix 1).

Figure 5- Presentation of the number of followers of the brand page, by brand page (%)

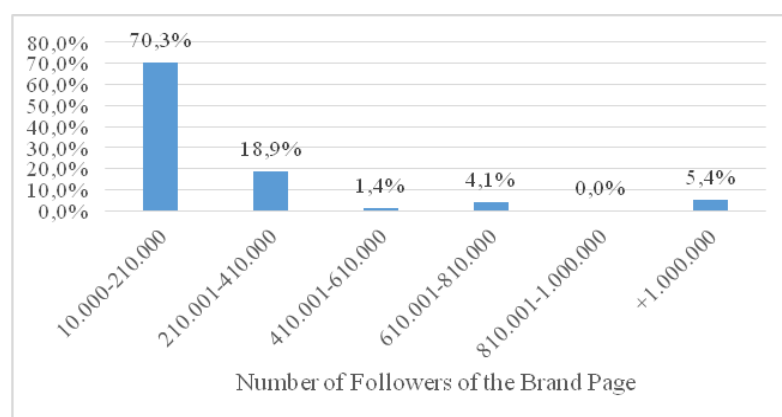


Figure 5. illustrates the number of followers by brand page. The number of followers was distributed per brand page through six intervals. Most of the brand pages have between “10.000 and 210.000” followers (70,2%). There are no brand pages with many followers

between “810.001 and 1.000.000”. 5,4% represents the percentage of brand pages that have more than 1.000.000 followers (Appendix 1).

Figure 6- Distribution of the sample by media type (%)

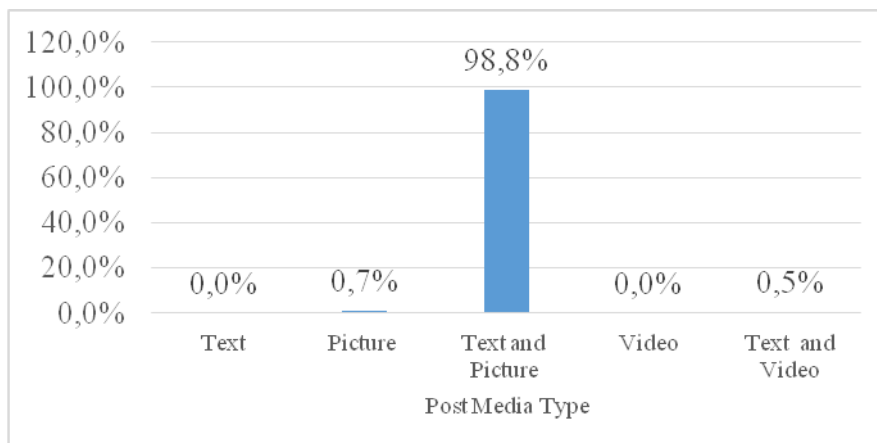


Figure 6. distributes the posts by media type. The type of media most common is the “text and picture” presented 98,8% of the posts. This means that the post has a written message associated and the picture (Appendix 2).

5.1.1 Measuring Global Engagement by Humanized vs. Non - Humanized Posts

Table 4- Distribution of the number of likes, comments and shares, by humanized vs. non-humanized posts

Type of Engagement	Humanized Posts		Non-Humanized Posts	
	Count	(%)	Count	(%)
Likes	216788	79,8	54745	20,2
Comments	7020	84,2	1319	15,8
Shares	10930	79,1	2892	20,9

Table 4. shows the global number of likes, comment and shares, for humanized and not-humanized posts. Humanized posts obtained more likes (79,8%) than the non – humanized posts (20,2%). Regarding comments, the humanized posts achieved more comments (84,2%) than the others not humanized (15,8%). Last but not least, the percentage of shares illustrates that the humanized posts (79,1%) got more shares than the non-humanized posts (20,9%) (Appendix 3).

5.1.2 Type of Content Characterization

Figure 7- Characterization of the sample by type of content (%)

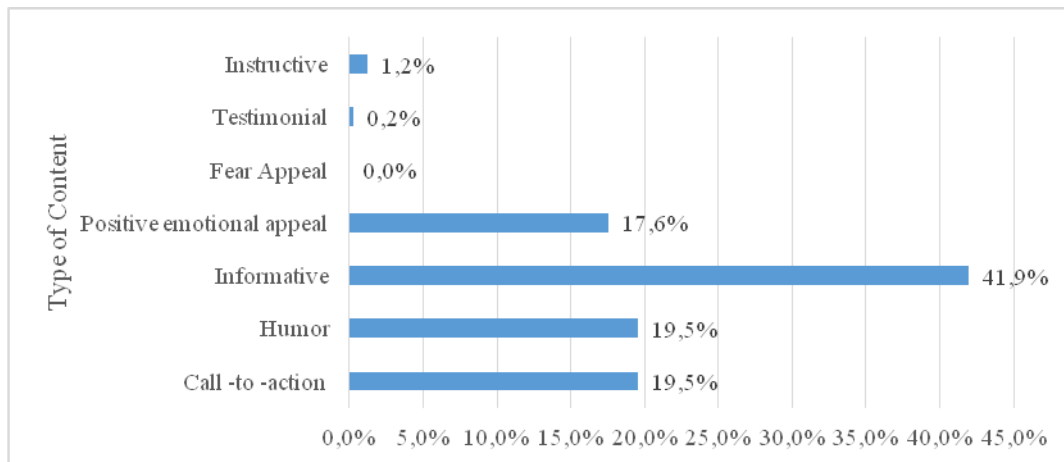


Figure 7. expresses the total posts dispersed by the type of content. The type of content with more posts is “informative” (41,9%), followed by “call-to-action” (19,5%) and “humour” (19,5%), “positive emotional appeal” (17,6%), “instructive” (1,2%) and “testimonial” (0,2%). There are not posts with a “fear appeal” content (Appendix 4).

Table 5- Distribution of the sample by type of content and separated by humanized and non-humanized posts

Type of Content	Humanized Posts		Non-Humanized Posts	
	Frequency (number of posts)	(%)	Frequency (number of posts)	(%)
Call-to-action	78	24,8	3	3,0
Humour	81	25,7	0	0,0
Informative	80	25,4	94	94,0
Positive emotional appeal	71	22,5	2	2,0
Fear appeal	-	-	-	-
Testimonial	0	0,0	1	1,0
Instructive	5	1,6	0	0,0
Total	315	100,0	100	100,0

Table 5. illustrates the total posts disseminated by the type of content and by humanized vs. non-humanized posts. The type of content with more posts for the humanized posts is “humour” (25,7%), followed by “informative” (25,4%) and “call-to-action” (24,8%), “positive emotional appeal” (22,5%), and “instructive” (1,6%). There are not humanized

posts with “testimonial” content. For the non-humanized posts, “informative” content is the type of content most common (94,2%), followed by “call- to-action” (3,0%), “positive emotional appeal” (2,0%) and “testimonial” (1,0%). The remaining categories did not present posts. “Fear appeal” did not present results because there is no sample for that category (Appendix 5). In Appendix 6 is possible to observe examples posts collected for each type of content identified.

5.1.2.1 Measuring the engagement online based on the type of content identified

Table 6- Distribution of number of likes regarding the type of content and separated by humanized and non-humanized posts

Type of Content	Humanized Posts			Non-Humanized Posts	
	Count (Number of likes)	(%)	Mean	Count (Number of likes)	(%)
Call-to-action	39856	18,4	511	42	0,1
Humour	55548	25,6	686	0	0,0
Informative	66239	30,6	828	54664	99,9
Positive emotional appeal	52405	24,2	738	14	0,0
Fear appeal	-	-	-	-	-
Testimonial	0	0,0	0	25	0,0
Instructive	2740	1,3	548	0	0,0

Table 6. illustrates the number of likes based on the type of content of the posts and by humanized vs. non-humanized posts. In the humanized posts, the type of content “informative” was the one that received more likes (30,6%), followed by “humour” (25,6%), “positive emotional appeal” (24,2%) and “call-to-action” (18,4%), while “instructive” was the one that received less likes (1,3%). “Testimonial” content did not show likes because there are not humanized posts with this type of content. For the non-humanized posts, the type “informative” received the highest percentage of likes (99,9%), followed by “call-to-action” (0,1%) and “testimonial” with an insignificance percentage. “Fear appeal” did not present results because there is no sample for that category (Appendix 7).

Table 7- Distribution of number of comments regarding the type of content and separated by humanized and non-humanized posts

Type of Content	Humanized Posts			Non-Humanized Posts	
	Count (number of comments)	(%)	Mean	Count (number of comments)	(%)
Call-to-action	3427	48,8	44	0	0,0
Humour	2186	31,1	27	0	0,0
Informative	980	14,0	12	1319	100,0
Positive emotional appeal	353	5,0	5	0	0,0
Fear appeal	-	-	-	-	-
Testimonial	0	0,0	0	0	0,0
Instructive	74	1,1	15	0	0,0

Table 7. illustrates the number of comments based on the type of content of the posts and by humanized vs. non-humanized posts. In the humanized posts, the type of content “call-to-action” was the one that received more comments (48,8%), while the type “instructive” was the one that received less comments (1,1%). For the non-humanized posts, posts with the type of content “informative” got all the comments (100,0%). The remaining types of content did not receive any comments. “Fear appeal” did not present results because there is no sample for that category (Appendix 7).

Table 8- Distribution of number of shares regarding the type of content and separated by humanized and non-humanized posts

Type of Content	Humanized Posts			Non-Humanized Posts	
	Count (Number of shares)	(%)	Mean	Count (Number of shares)	(%)
Call-to-action	3069	28,1	39	2	0,1
Humour	3291	30,1	41	0	0,0
Informative	2505	22,9	31	2885	99,8
Positive emotional appeal	1720	15,7	24	0	0,0
Fear appeal	-	-	-	-	-
Testimonial	0	0,0	0	5	0,2
Instructive	345	3,2	69	0	0,0

Table 8. represents the distribution of number of shares considering the type content of the posts and its distribution by humanized and non-humanized posts. According to the table, for humanized posts the type of content that shows the highest return in the number of shares was the type “humour” (30,1%), while “instructive” achieved the smallest number (3,2%). About the non-humanized posts, the ones with the type of content “informative” obtained the highest return in the number of shares (99,8%), while “testimonial” content achieved the lowest return (0,2%). “Fear appeal” did not present results because there is no sample for that category (Appendix 7).

5.1.3 Anthropomorphism Characterization

Figure 8- Distribution of the humanized posts by type of anthropomorphic dimensions(%)

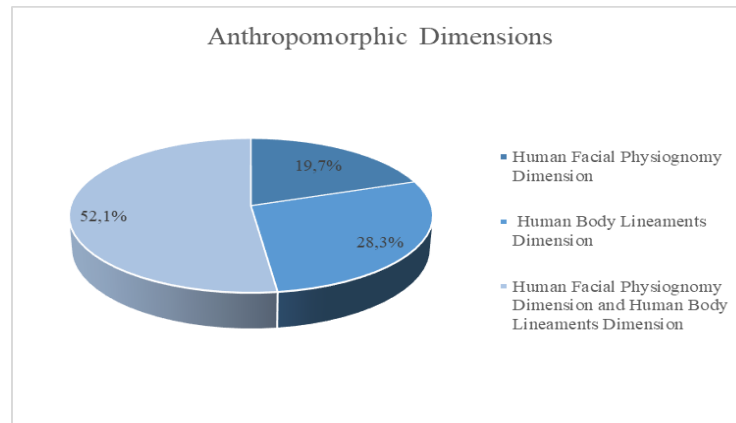


Figure 8. classifies each post humanized by type of external appearance, that is, “Human Facial Physiognomy Dimension”- if the post seems to have a face, or just a nose, or eyes, or a mouth, or ears; “Human Body Lineaments Dimension”-if the post seems to look like a person, or have a human neck, or have a human trunk; “Human Facial Physiognomy and Human Body Lineaments Dimension”- if the posts expresses anthropomorphic features presented in the body as well as in the face. The group with more posts was the last one with 52,1% of the posts, followed by the second with 28,3% of the posts, and the first one with the remaining posts (19,7%) (Appendix 8). Some of these posts seemed to have a childlike character.

Figure 9- Distribution of anthropomorphic posts by “Human Facial Physiognomy Dimension”(%)

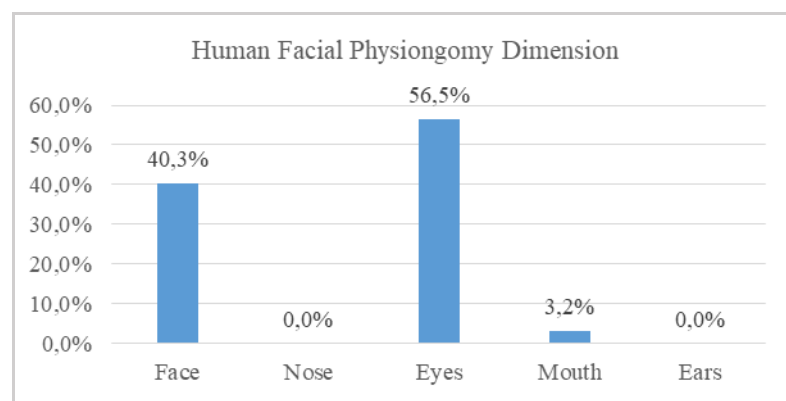


Figure 9. divides the humanized posts that contain the “Human Facial Physiognomy Dimension”, by the type of anthropomorphic character related to the face. These posts were classified by the presence of: a human face “this branded product seems to have a human

face”, nose “this branded product seems to have a nose”, eyes “this branded product seems to have eyes”, mouth “this branded product seems to have a mouth” and ears “this brand product seems to have ears”. The eyes category is the one that demonstrates more posts (56,5%), followed by the presence of human face (40,3%). Just 3,2% of the humanized posts contain only a mouth. The remaining categories do not have expression (Appendix 9). Appendix 10 contains examples of posts with “Human Facial Physiognomy Dimension”.

Figure 10- Distribution of anthropomorphic posts by “Human Body Lineaments Dimension”(%)

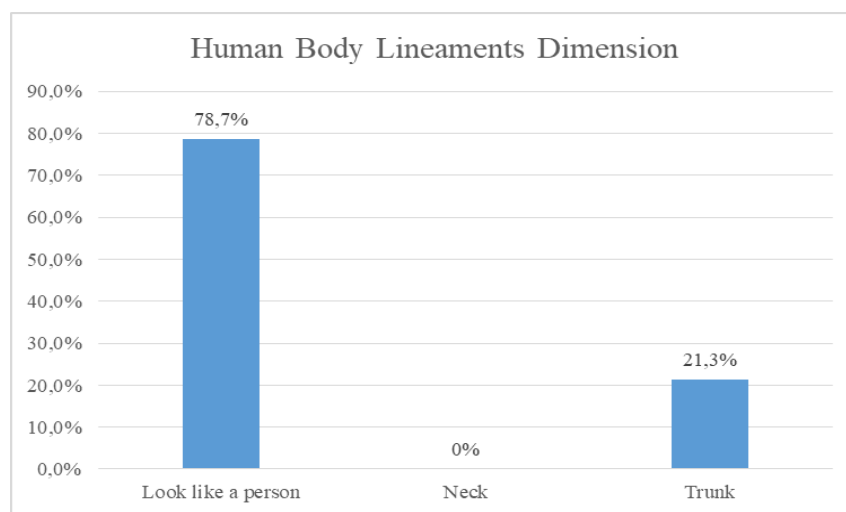


Figure 10. classifies the humanized posts by “Human Body Lineaments Dimension”, by the type of anthropomorphic character related to the body. These posts are distributed by the look like a person “This branded product looks like a person”, presence of a human neck “This branded product seems to have a human neck” and existence of a human trunk “This branded product seems to have a human trunk”. Most of the posts shows a look like a person (78,7%), while 21,3% have a trunk. (Appendix 11). Appendix 12 contains examples of posts with “Human Body Lineaments Dimension”, and Appendix 13 the “Human Facial Physiognomy and Human Body Lineaments Dimension”.

5.1.3.1 Measuring the engagement online based on anthropomorphic characters

Table 9- Distribution of number of likes regarding the anthropomorphic dimensions

Anthropomorphic Dimensions	Count (Number of likes)	(%)	Mean of likes
Human Facial Physiognomy Dimension	13829	6,4	223
Human Body Lineaments Dimension	72725	33,5	817
Human Facial Physiognomy Dimension and Human Body Lineaments Dimension	130234	60,1	794

Table 9. represents the number of likes for each type of anthropomorphic dimension presented. According to the table, the number of likes was bigger when the post presented “Human Facial Physiognomy and Human Body Lineaments Dimension” (60,1%), and smaller when the post showed “Human Facial Physiognomy Dimension” (6,4%) (Appendix 14).

Table 10- Distribution of number of comments regarding the anthropomorphic dimensions

Anthropomorphic Dimensions	Count (Number of comments)	(%)	Mean of Comments
Human Facial Physiognomy Dimension	175	2,5	3
Human Body Lineaments Dimension	1077	15,3	12
Human Facial Physiognomy Dimension and Human Body Lineaments Dimension	5768	82,2	35

Table 10. illustrates the number of comments for each type of anthropomorphic dimension analysed. It tells that the number of likes was bigger when the post presented “Human Facial Physiognomy and Human Body Lineaments Dimension” (82,2%). The dimension with less percentage of comments was “Human Facial Physiognomy Dimension” (2,5%) (Appendix 15).

Table 11- Distribution of number of shares regarding the anthropomorphic dimensions

Anthropomorphic Dimensions	Count (Number of shares)	(%)	Mean of Shares
Human Facial Physiognomy Dimension	1034	9,5	17
Human Body Lineaments Dimension	1872	17,1	21
Human Facial Physiognomy Dimension and Human Body Lineaments Dimension	8024	73,4	49

Table 11. shows the number of shares for each type of anthropomorphic dimension explored. The results provided evidences that the number of shares was bigger when the post presented “Human Facial Physiognomy and Human Body Lineaments Dimension” (73,4%), followed by “Human Body Lineaments Dimension” (17,1%) and “Human Facial Physiognomy Dimension” (9,5%) (Appendix 16).

5.1.4 Time of the Post Published Characterization

5.1.4.1 Distribution of posts publication per day

Figure 11- Distribution of the sample by they of the week when the post was published (%)

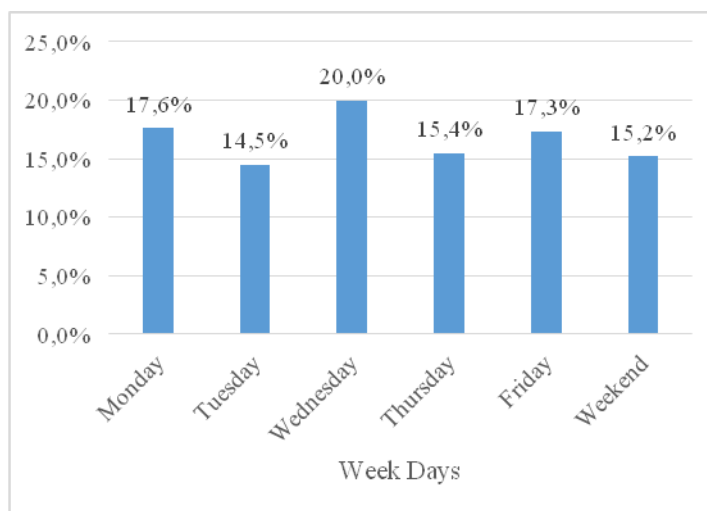


Figure 11 distributes the posts by the day of the week when the post was published, and that distribution is roughly equal. “Monday”, “Tuesday”, “Wednesday”, “Thursday”, “Friday” and “Weekend” were considered. The category “Weekend” is composed by the posts that were published on Saturday and Sunday. The day of the week with more posts was “Wednesday”

with 20,0% of posts, followed by “Monday” (17,6%), “Friday” (17,3%), “Thursday” (15,4%) and the “Weekend” with 15,2%. The day with less posts was “Tuesday” (14,5% of the posts) (Appendix 17).

5.1.4.1.1 Measuring the engagement online based on the day of the posts' publication

Table 12- Distribution of number of likes concerning the day of the posts' publication

Week Day	Count (Number of likes)	(%)	Mean of Likes
Monday	42133	15,5	577
Tuesday	52513	19,3	875
Wednesday	56409	20,8	680
Thursday	53370	19,7	834
Friday	47756	17,6	663
Weekend	19352	7,1	307

Table 12. shows the number of likes concerning the day of the posts publication. It is possible to visualize that “Wednesday” was the day whose posts obtained the highest percentage of likes (20,8%), followed by “Thursday” with 19,7%, “Tuesday” (19,3%) Friday (17,6%), Monday (15,5%), and finally the “Weekend” (7,1%) Appendix 18).

Table 13- Distribution of number of comments concerning the day of the posts' publication

Week Day	Count (Number of comments)	(%)	Mean of Comments
Monday	676	8,1	9
Tuesday	687	8,2	12
Wednesday	1037	12,4	13
Thursday	4015	48,1	63
Friday	746	8,9	10
Weekend	1178	14,1	19

Table 13. presents the number of comments based on the day of the posts' publication, the highest number of comments was on “Thursday” (48,1%), followed by “Weekend” (14,1%), “Wednesday” (12,4%) and so on. While “Monday” was the day of the week when posts obtained less comments (8,1%) (Appendix 19).

Table 14- Distribution of number of shares considering the day of the posts' publication

Week Day	Count (Number of shares)	(%)	Mean of Shares
Monday	2686	19,4	37
Tuesday	1555	11,3	26
Wednesday	2840	20,5	34
Thursday	3241	23,4	51
Friday	2085	15,1	29
Weekend	1415	10,2	23

Table 14. illustrates the number of shares regarding the day of the posts' publication. As it is possible to see, the moment of the week that demonstrates more sharing of the posts, was on "Thursday" (23,4%), while the day of the week whose shares of posts appeared in a smaller number was on the "Weekend" (10,2%). "Thursday" was followed by "Wednesday" (20,5%), "Monday" (19,4%) and "Friday" (15,1%) (Appendix 20).

5.1.4.2 Distribution of posts publication per hour

Figure 12- Distribution of the sample by time of the day of the posts' publication (%)

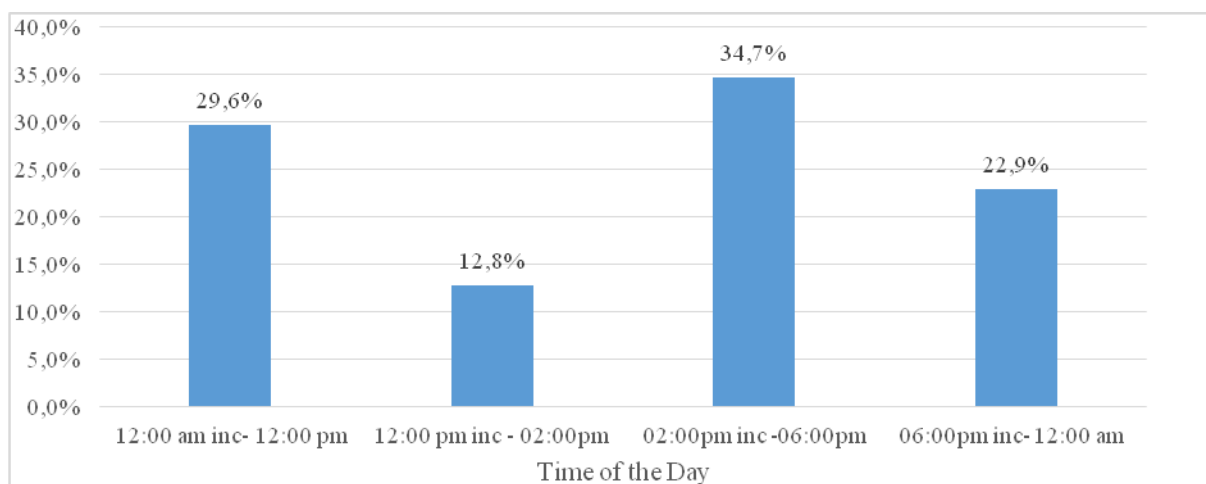


Figure 12. shows all the posts separated by period of the day when they were published. The time is divided in four intervals: morning "12:00 am inc- 12:00 pm"; lunch "12:00 pm inc - 02:00pm"; afternoon "02:00pm inc -06:00pm" and evening "06:00pm inc- 12:00 am". The time of the day when more posts were published was in the afternoon, between "02:00pm-06:00pm" with 34,7% of the posts, followed by morning (29,6%), evening (22,9%) and lunch in the end with 12,8% (Appendix 21).

5.1.4.2.1 Measuring the engagement online based on the hour of the posts' publication

Table 15- Distribution of number of likes concerning the moment of the day of the posts' publication

Intervals	Count (Number of likes)	(%)	Mean of Likes
12:00 am inc- 12:00 pm	71646	26,4	583
12:00 pm inc - 02:00pm	42129	15,5	795
02:00pm inc -06:00pm	94338	34,7	655
06:00pm inc- 12:00 am	63420	23,4	668

Table 15. demonstrates the number of likes based on the hour of the posts' publication. "02:00pm inc -06:00pm" was the moment of the day whose posts obtained more likes (34,7%), then was "12:00 am inc- 12:00 pm" (26,4%), "06:00pm inc -12:00am" pm (23,4%), and, in the end appeared "12:00pm inc- 02:00 am" (15,5%) (Appendix 22).

Table 16- Distribution of number of comments in relation to the moment of the day of the posts' publication

Intervals	Count (Number of comments)	(%)	Mean of Comments
12:00 am inc- 12:00 pm	1345	16,1	11
12:00 pm inc - 02:00pm	4282	51,3	81
02:00pm inc -06:00pm	1663	19,9	12
06:00pm inc- 12:00 am	1049	12,6	11

Table 16. shows the number of comments considering the hour of posts' publication. "12:00 pm inc - 02:00pm" was the moment of the day whose posts published in that time obtained more comments (51,3%). That number was followed by "02:00pm inc -06:00pm" (19,9%) and "12:00 am inc- 12:00 pm" (16,1%). "06:00pm inc- 12:00 am" was the time of the day when the posts received less comments (12,6%) (Appendix 23).

Table 17- Distribution of number of shares based on the moment of the day of the posts' publication

Intervals	Count (Number of shares)	(%)	Mean of Shares
12:00 am inc- 12:00 pm	2802	20,3	23
12:00 pm inc - 02:00pm	3465	25,1	65
02:00pm inc -06:00pm	4942	35,8	34
06:00pm inc- 12:00 am	2613	18,9	28

Table 16 shows the number of sharings concerning the hour of posts' publication. "02:00 pm inc - 06:00pm" was the moment of the day whose number of shares was bigger (35,8%). That number was followed by "12:00 am inc- 02:00 pm" (25,1%) and "12:00 am inc- 12:00 pm" (20,3%). "06:00pm inc -12:00am" was the moment of the day where the posts received less shares (18,9%) (Appendix 24).

5.2 Hypothesis Validation

As it was presented in the previous chapter, the hypothesis test implied the creation of two models of analyses.

Model 1

The Model 1 aims to validate that posts which present anthropomorphic characters have a bigger positive impact in the number of likes, number of comments and number of shares, than the posts which do not present that characters. For that, through the random selection of SPSS, were selected 80 posts with anthropomorphic characters and 80 posts without anthropomorphic characters, the type of content of all posts was "informative" and based on a message about at least one of the following subjects: the promotion of healthy habits, nutritional information and physical activities to fight obesity. The reference to accept or reject the null hypothesis was a significance level of $p \leq .05$.

5.2.1 Test of Hypothesis 1

Humanized posts have a bigger positive impact in the number of likes, comments and shares than non-humanized posts.

Number of Likes

Table 18- Results of Independent- Samples T Test to compare the mean of number of likes between humanized posts and non-humanized posts

	Humanized Posts vs. Non- Humanized Posts	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of likes per post	Humanized Posts	80,00	827,99	2519,95	0,03
	Non- Humanized Posts	80,00	196,51	384,46	

Through the Kolmogorov-Smirnov test was possible to confirm that the two samples come from populations with a normal distribution concerning the variable under analyses “number of likes per post” because $(p = .44) > (p = .05)$, which allows to run the Independent- Samples T Test. According to the Levene’s test, the equality of variances is not assumed once $(p = .00) < (p = .05)$. According to Table 18., there was a significant difference in the mean of number of likes for humanized posts ($M = 827.99, SD = 2519.95$) and non- humanized posts ($M = 196.51, SD = 384.46$); $t(82.68) = 2.216, p = .03$. Consequently, the mean of likes per post was bigger when the posts were humanized than non-humanized (Appendix 25).

Number of Comments

Table 19- Results of Independent- Samples T Test to compare the mean of number of comments between humanized posts and non-humanized posts

	Humanized Posts vs. Non- Humanized Posts	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of comments per post	Humanized Posts	80,00	12,25	32,21	0,90
	Non- Humanized Posts	80,00	11,59	37,21	

The Kolmogorov-Smirnov Test informed that the two samples come from populations with a normal distribution concerning the variable under analyses “number of comments per post” because $(p = .33) > (p = .05)$, which permits to run the Independent- Samples T Test. According to the Levene’s test, the equality of variances is assumed once $(p = .89) > (p = .05)$. Based on the results of Table 19., there was not a significant difference in the mean of number of comments for humanized posts ($M = 12.25, SD = 32.21$) and non- humanized posts ($M = 11.59, SD = 37.21$); $t(158) = .12, p = .90$ (Appendix 25).

Number of Shares

Table 20- Results of Independent- Samples T Test to compare the mean of number of shares between “humanized posts” and “non-humanized posts

Regarding the Kolmogorov-Smirnov Test, the two samples come from populations with a

	Humanized Posts vs. Non- Humanized Posts	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of shares per post	Humanized Posts	80	31,31	82,18	,29
	Non- Humanized Posts	80	20,10	44,62	

normal distribution concerning the variable under analyses “number of shares per post” because $(p = .44) > (p = .05)$, giving permission to run the Independent- Samples T Test. According to the Levene’s test, the equality of variances is assumed as $(p = .14) > (p = .05)$. There was not a significant difference in the scores for humanized posts ($M = 31.31$, $SD = 82.18$) and non- humanized posts ($M = 20.10$, $SD = 44.62$) conditions; $t(158) = 1.07$, $p = .29$ (Appendix 25).

Model 2

The Model 2 aims to identify the type of content that can generate a bigger number of likes, comments and shares, just considering the humanized posts, and includes the validation of Hypothesis 2, Hypothesis 3 and Hypothesis 4. The results are presented by comparison to the type of content “call-to-action”. This model includes the 315 posts and the reference to accept or reject the null hypothesis was a significance level of $p \leq .05$.

5.2.2 Test of Hypothesis 2

Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Humour” content.

Number of Likes

Table 21- Results of Independent- Samples T Test to compare the mean of number of likes between “call-to- action” content and “humour” content

	Type of Content	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of likes per post	"Call-to-action" Content	78	510,97	1142,26	0,39
	"Humour" Content	81	685,78	1418,09	

The Kolmogorov-Smirnov Test illustrated that the two samples come from populations with a normal distribution according to the variable under analyses “number of likes per post” because $(p = .26) > (p = .05)$, consequently is possible to compute the Independent- Samples T Test. About the Levene’s test, the equality of variances is assumed once $(p = .29) > (p = .05)$. There was not a significant difference in the mean of likes for the “call –to-action” content ($M = 510.97, SD = 1142.26$) and “humour” content ($M = 685.78, SD = 1418.09$); $t(157) = -.85, p = .39$ (Appendix 26).

Number of Comments

Table 22- Results of Independent- Samples T Test to compare the mean of number of comments between “call-to- action” content and “humour” content

	Type of Content	N	Mean	Std. Deviation	Sig.(2-tailed)
Number of comments per post	"Call-to-action" Content	78	43,94	266,43	0,61
	"Humour" Content	81	26,99	133,33	

The Kolmogorov-Smirnov Test showed that the two samples come from populations with a normal distribution concerning the variable under analyses “number of comments per post” because $(p = .89) > (p = .05)$, so it is possible to run the Independent- Samples T Test . According to the Levene’s test, the equality of variances was assumed once $(p = .30) > (p = .05)$. There was not a significant difference in the means for the “call –to-action” content ($M = 43.94, SD = 266.43$) and the “humour” content ($M = 26.99, SD = 133.33$); $t(157) = .51, p = .61$. (Appendix 26).

Number of Shares

Table 23- Results of Independent- Samples T Test to compare the mean of number of shares between “call-to- action” content and “humour” content

	Type of Content	N	Mean	Std. Deviation	Sig.(2-tailed)
Number of shares per post	"Call-to-action" Content	78	39,35	108,37	0,95
	"Humour" Content	81	40,63	141,91	

The Kolmogorov-Smirnov test was conducted to confirm that the two samples come from populations with a normal distribution concerning the variable under analyses “number of shares per post” because $(p = .90) > (p = .05)$, as a result the Independent- Samples T Test can be run. The Levene’s test revealed that the equality of variances was accomplished $(p = .90) > (p = .05)$. There was not a significant difference in the scores for the “call –to-action” content ($M = 39.35, SD = 108.37$) and “humour” content ($M = 40.63, SD = 141.91$); $t(157) = -.06, p = .95$ (Appendix 26).

5.2.3 Test of Hypothesis 3

Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Informative” content.

Number of Likes

Table 24- Results of Mann-Whitney Test compare the distribution of number of likes between “call-to -action” content and “informative” content

	Type of Content	N	Mean Rank	Sum of Ranks
Number of likes per post	"Call-to-action" Content	78	86,42	6740,50
	"Informative" Content	80	72,76	5820,50

The Kolmogorov-Smirnov demonstrated that the two samples do not come from populations with a normal distribution according to the variable under analyses “number of likes per post” because $(p = .01) < (p = .05)$. As a result, the parametric- test Independent- Samples T Test could not to be led. Instead, the Mann-Whitney Test was performed in order to test the equality of the distribution of the number of likes for the “informative” content and “call-to-

action” content. The test indicated that the distribution of likes is not different for the “call-to-action” content ($Mdn = 86.42$) and “informative” content ($Mdn = 72.76$), $U = 2580.50$, $p = .06$ (Appendix 27).

Number of Comments

Table 25- Results of Independent- Samples T Test to compare the mean of number of comments between “call-to- action” content and “informative” content

	Type of Content	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of comments per post	"Call-to-action" Content	78	43,94	266,43	0,30
	"Informative" Content	80	12,25	32,21	

The Kolmogorov-Smirnov test showed that the two samples come from populations with a normal distribution concerning the variable under analyses “number of comments per post” because ($p = .96$) > ($p = .05$), it is able to conduct the Independent- Samples T Test. For the Levene’s test, the equality of variances is not assumed because ($p = .049$) < ($p = .05$) there was not a significant difference in the scores for the “call –to-action” ($M = 43.94$, $SD = 266.43$) and the “informative” content ($M = 12.25$, $SD = 32.21$); $t (79.19) = 1.04$, $p = .3$ (Appendix 27).

Number of Shares

Table 26- Results of Independent- Samples T Test to compare the mean of number of shares between “call-to-action” content and “informative” content

	Type of Content	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of shares per post	"Call-to-action" Content	78	39,35	108,37	0,60
	"Informative" Content	80	31,31	82,18	

The Kolmogorov-Smirnov test was explored in order to confirm that the two samples come from populations with a normal distribution concerning the variable under analyses “number of shares per post” because ($p = .96$) > ($p = .05$). The Levene’s test revealed that the equality of variances was accomplished ($p = .22$) > ($p = .05$). There was not a significant difference in the means for the “call –to-action” content ($M = 39.35$, $SD = 108.37$) and “informative” content ($M = 31.31$, $SD = 82.18$); $t (156) = .53$, $p = .60$ (Appendix 27).

5.2.4 Test of Hypothesis 4

Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Positive Emotional Appeal” content.

Number of Likes

Table 27- Results of Independent- Samples T Test to compare the mean of number of likes between “call-to- action” content and “positive emotional appeal” content

	Type of Content	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of likes per post	"Call-to-action" Content	78	510,97	1142,26	,39
	"Positive emotional appeal" Content	71	738,10	1981,19	

The Kolmogorov-Smirnov test was able to conclude that the two samples come from populations with a normal distribution concerning the variable under analyses “number of likes per post” because $(p = .15) > (p = .05)$, which allows the conduction of the Independent –Samples T Test. Regarding to the Levene’s test, the equality of variances is assumed once $(p = .11) > (p = .05)$. There was not a significant difference in the mean for the “call –to-action” content ($M = 510.97$, $SD = 1142.26$) and “positive emotional appeal” content ($M = 738.10$, $SD = 1981.19$); $t(147) = -.87$, $p = .39$ (Appendix 28).

Number of Comments

Table 28- Results of Mann- Whitney test to test the equality of the distribution of the number comments for “call-to- action” content and “positive emotional appeal” content

	Type of Content	N	Mean Rank	Sum of Ranks
Number of comments per post	"Call-to-action" Content	78	81,57	6362,50
	"Positive emotional appeal" Content	71	67,78	4812,50

The Kolmogorov-Smirnov Test showed that the two samples did not come from populations with a normal distribution concerning the variable under analyses “number of comments per post” because $(p = .048) < (p = .05)$. As a result, the parametric-test Independent- Samples T Test could not to be piloted. The no-parametric equivalent Mann-Whitney test was conducted.

The number of comments was greater for “call-to-action” content ($Mdn = 81.57$) than for “positive emotional appeal” content ($Mdn = 67.78$) and, $U = 2256.5, p = .04$ (Appendix 28).

Number of Shares

Table 29- Results of Independent- Samples T Test to compare the mean of number of shares between “call-to- action” content and “positive emotional appeal” content

	Type of Content	N	Mean	Std. Deviation	Sig. (2-tailed)
Number of shares per post	"Call-to-action" Content	78	39,35	108,37	,33
	"Positive emotional appeal" Content	71	24,23	77,28	

The Kolmogorov-Smirnov test indicated that the two samples come from populations with a normal distribution concerning the variable under analyses “number of shares per post” because ($p = .99$) > ($p = .05$), making it possible to conduct the Independent-Samples T Test. The Levene’s test revealed that the equality of variances was accomplished ($p = .08$) > ($p = .05$). There was not a significant difference in the means for the “call-to-action” content ($M= 39.35, SD=108.37$) and “positive emotional appeal” content ($M= 24.23, SD= 72.28$); $t(147)=.97, p =.33$ (Appendix 28).

5.2.5 Summary of Hypothesis Validation

Table 30- Summary of results provided by the tests paramentrics and no- parametrics

Hypothesis	Likes	Comments	Shares	Conclusion
Hypothesis 1: Humanized posts have a bigger positive impact in the number of likes, comments and shares than non-humanized posts.	√	X	X	Partially Accepted
Hypothesis 2: Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Humour” content.	X	X	X	Rejected
Hypothesis 3: Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Informative” content.	X	X	X	Rejected
Hypothesis 4: Humanized posts with “Call-to-action” content, generate more likes, more comments and more shares than the humanized posts with “Positive emotional appeal” content.	X	√	X	Partially Accepted

6. Discussion of Results

6.1 Conclusions

The use of Anthropomorphism as a strategy for creating content is widely disseminated, being present in an online context through different formats, for instance, in social networks brand posts that contain spokes-characters, brands speaking in the first person, expressing emotions or products presenting humanlike characters.

However, there are few studies that evaluate the effectiveness of these strategies, no study was found measuring Anthropomorphism from the perspective of users' engagement, that is, its impact in the number of likes, comments and shares.

The current research tries to address this gap and explores Anthropomorphism in social networks as a strategy to improve users' engagement, and its possible contribution to the promotion of healthy eating habits, nutritional information and physical activity to fight obesity, through a content analysis of brand publications on their Facebook pages.

To do that, there was a focus on three dimension of brand Anthropomorphism linked to the external appearance of branded products: "Human Facial Physiognomy", "Human Body Lineaments", and it was introduced a third dimension "Human Facial Physiognomy and Human Body Lineaments" for posts that contained characters from both dimensions.

The study focuses on three dimensions of Anthropomorphism related to the external appearance of brand products. In this sense, there were collected 415 posts from Facebook brand pages, of which 315 had to show one of the anthropomorphic characters presented in one of the dimensions. The remaining 100 posts did not present anthropomorphic characters.

The results obtained by comparing the humanized posts with the non-humanized ones allowed concluding that brand Anthropomorphism online had a higher positive impact on the number of likes, suggesting that it can be a strategy to enrich content online, and interact with users in order to arouse positive attitudes towards the brand page. Furthermore, it was concluded that the users' engagement did not differ by content type used in the anthropomorphized posts. These findings are supported by literature (Nan *et al.*, 2006; Hudson *et al.*, 2016).

Concerning the type of content, the results were not consistent with Kite *et al.*, (2016). So, as for the number of comments, only the "positive emotional appeal" content showed fewer comments than the "call-to-action" one. However, if we consider the studies by De Vries, Gensler, and Leeflang, (2012), and Pletikosa and Michahelles, (2013), which applied their studies in commercial pages, we can see some similarities.

When looking at the days with the highest post rates, Wednesday definitely ranked first. Even the number of likes was higher on that day. Yet the number of comments and shares was bigger when the posts were published on Thursday. This allows concluding that posts published on weekdays can produce more users' engagement than posts published on the weekend because the frequency of posts was bigger during the week, as well as the number of interactions. One possible explanation could be that users spend more time online interacting with brands during workdays than on the weekend.

Concerning the time frame when most posts are published during the day, people seem to be more active from 2 p.m. to 6 p.m. This time frame also registered the highest number in likes and shares. Yet, people seem to prefer to write a comment from midday to 2 p.m. These findings were surprising, since a greater number of interactions were expected to take place in the evening.

6.2 Implications for Marketing

Considering the analyses of the "call-to-action" content, it did not reveal itself as a crucial factor in the increase in users' engagement. However, although there are no significant differences between the different types of content in humanized posts, we observed a higher frequency of likes when humanized posts were "informative", higher return in comments on the "call-to-action" content, and more shares if the content is humorous.

Concerning the application of the study in FMCG- food and beverage industry, although an Anthropomorphism communication combined with a specific type of content and based on the promotion of healthy eating habits, nutritional information and physical activity, to fight obesity, does not guarantee more user's engagement, there is evidence out of the social media context that this strategy can work.

In an online context, users seem to like getting informative content about nutrition, regardless of the presence or absence of Anthropomorphism. So, marketers of this industry should keep fighting to contribute to a healthier world, and not abandon this goal online and offline because the health industry is growing and being healthy is becoming a trend, for some consumers even a lifestyle. Since this issue is regarded as a matter of interest of today and tomorrow, other strategies should be studied in order to continue the fight and create useful content for users.

6.3 Limitations of the Investigation

It is possible to identify some limitations that could be taken into count for future investigations.

The first limitation was the subjectivity of the analyses. As this was an exploratory study, the posts selection was made based on the judgement of the author. If in the beginning it started by analysing different strategies of brand Anthropomorphism, the selection was finished just considering the external appearance of brand products in order to decrease the impact of subjectivity.

The second limitation was the scope of the study. The results were obtained through the analyses of Facebook pages of brands of FMCG- food and beverage, and the content of the posts were all about healthy eating habits, and/or nutritional information and/or promotion of physical activities. Therefore, our findings only make sense when applied to this industry. Extrapolating the results to other industries requires a new validation of the hypothesis tested.

The third limitation involved the lack of studies on brand Anthropomorphism in an online context. No studies were found regarding measured brand Anthropomorphism as a vehicle to increase users' engagement and contribute to the change of habits, more precisely healthy habits. Since this is a new approach, future studies should be done to validate or refute the accuracy of the results obtained.

The fourth limitation was that the anthropomorphic characters presented in the posts, were associated with a childlike character, which can make a product look less sophisticated. On the other hand, food is a basic need that involves a low risk in the buying process, compared with a gadget or a car, for instance. Thus, communicating food with anthropomorphic characters may not grasp users' attention as much as the promotion of a new gadget that uses those same characters.

The fifth limitation includes the lack of analyses of the media types. These were not explored very much because the way the posts were selected skewed the analyses.

6.4 Contributions and suggestions for future investigation

For future investigations, is recommended that a survey should be done to verify the link between users' engagement online concerning brand Anthropomorphism, and the availability

to follow a specific behaviour or even to buy a product because just liking it is not enough when taking into consideration the complexity of human behaviour.

Also, it would be interesting to make the same analyses in a different area, for instance, in the technology markets to see if the users' behaviour would be the same if a product involved more purchase risk.

Furthermore, other anthropomorphic strategies should be evaluated, for instance, the first-person point of view or exploring the emotional side, represented by the self-brand congruity, because the external appearance of the brand product here analysed is just a small part of brand Anthropomorphism.

Besides all this, it would also be interesting to study if the childlike character of some posts has a different return in users' engagement compared with humanized posts that do not remind users of children, and if there are differences between men and women regarding brand Anthropomorphism perception.

Finally, and considering the media type, future studies could include the impact of different media types on users' engagement in humanized posts.

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8. Appendix

Appendix 1 - Identification of the brand pages selected

Brand Name	Number of Followers per Page	Number of posts per name	Brand Page Country	Food vs. Beverage
Mimosa	44 766,00	16	Portugal	Food
Cem Porcento	27 181,00	18	Portugal	Food
a Vaca que ri	162 837,00	11	Portugal	Food
The Primal Pantry	20 414,00	4	Portugal	Food
Bimbo Portugal	36 748,00	8	Portugal	Food
Vitaminas	67 259,00	3	Portugal	Food
Iglo	61 321,00	2	Portugal	Food
Babybel	1 080 902,00	4	Portugal	Food
Herbalife	4 815 206,00	2	Portugal	Food
Compal	377 900,00	2	Portugal	Beverage
Limiano	104 280,00	5	Portugal	Food
Fruut	69 102,00	4	Portugal	Food
SAZÓN Brasil	3 173 003,00	7	Brazil	Food
Chiquita	536 053,00	2	Switzerland	Food
Eat natural	11 509,00	4	United Kingdom	Food
RooBar - Organic 100% Raw + Superfoods	14 287,00	10	Bulgary	Food
GoGo squeeZ	750 499,00	8	United States	Food
Bem Brasil Alimentos	43 905,00	4	Brazil	Food
Daco Bello	21 978,00	1	France	Food
Fhom Alimentos	15 642,00	7	Brazil	Food
Vitalin Sem Glúten	17 949,00	12	Brazil	Food
Santàl	326 188,00	7	Italy	Beverage
Goodbelly	182 938,00	8	United States	Food
Lenti	88 980,00	1	Italy	Food
Ponti	167 088,00	1	Italy	Food

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Yomo	105 418,00	1	Italy	Food
Made in Nature	156 184,00	2	United States	Food
Planters Canada	27 468,00	7	Canada	Food
Beanitos	54 119,00	3	United States	Food
Grefusa	335 829,00	12	Spain	Food
Mi Gurt	282 761,00	6	Spain	Food
Vive Soy	47 993,00	6	Spain	Food
Bimbo España	294 966,00	2	Spain	Food
Trina Portugal	26 078,00	4	Portugal	Beverage
Trina Espana	236 510,00	2	Spain	Beverage
La Huerta	199 550,00	20	Mexico	Food
Jugos Citric	195 590,00	5	Argentina	Beverage
Lance Snacks	259 556,00	3	United States	Food
Tajin	4 495 558,00	2	Mexico	Food
Maitre Prunille	17 804,00	1	France	Food
Sin Popitas te falta algo	70 168,00	2	Spain	Food
Don Simón	40 230,00	4	Spain	Food
Avonmore Milk	63 430,00	5	Ireland	Food
Onken Dairy	100 390,00	1	United Kingdom	Food
Sunny D	57 661,00	2	United Kingdom	Beverage
Gits	242 570,00	9	India	Food
Parle G	382 926,00	1	India	Food
Claudi and Fin	18 318,00	8	United Kingdom	Food
Ramdev	130 086,00	3	India	Food
Wingreens	120 838,00	6	India	Food
Oleev	350 031,00	6	India	Food
Bagrry's	75 156,00	10	India	Food
Manzotin	10 502,00	5	Italy	Food
Nutty Bavarian	298 269,00	4	Brazil	Food

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Good Soy	44 898,00	2	Brazil	Food
Electrolit	351489,00	5	Mexico	Beverage
Granarolo	320 057,00	6	Italy	Food
Blédina Portugal	49 261,00	15	Portugal	Food
Agua de Coco Sococo	70 550,00	1	Brazil	Beverage
Nestle Pureza Vital Argentina	123 030,00	8	Argentina	Beverage
Agua Villa del Sur	703 577,00	1	Argentina	Beverage
Phinus Alimentos	26 905,00	3	Brazil	Food
Da Magrinha	22 003,00	4	Brazil	Food
Hortifruti	144 728,00	15	Brazil	Food
Meu Biju	52 010,00	11	Brazil	Food
Oba Hortifruti	133 653,00	14	Brazil	Food
Alpina	357 705,00	2	Colombia	Beverage
Colanta Oficial	174 307,00	16	Colombia	Food
Huevos Santa Anita	58 529,00	4	Colombia	Food
Algarra Oficial	48 627,00	4	Colombia	Food
Perle du Nord	28 752,00	2	France	Food
Southern Breeze Sweet Tea	88 831,00	6	United States	Beverage
Andros Owoce ze smakiem	13414	1	Poland	Beverage
Momentos Yep	260 052,00	2	Brazil	Food

Appendix 2- Characterization of the sample by type of media

Post Media Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Picture	3	0.7	0.7	0.7
	Texto and picture	410	98.8	98.8	99.5
	Video and text	2	0.5	0.5	100.0
	Total	415	100.0	100.0	

Appendix 3- Distribution of the number of likes, comments and shares, by humanized vs. non- humanized posts

Number of Likes

Humanized Posts vs. Non-Humanized Posts					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Humanized Posts	216788	79.8	79.8	79.8
	Non- Humanized Posts	54745	20.2	20.2	100.0
	Total	271533	100.0	100.0	

Number of Comments

Humanized Posts vs. Non-Humanized Posts					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Humanized Posts	7020	84.2	84.2	84.2
	Non- Humanized Posts	1319	15.8	15.8	100.0
	Total	8339	100.0	100.0	

Number of Shares

Humanized Posts vs. Non-Humanized Posts					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Humanized Posts	10930	79.1	79.1	79.1
	Non- Humanized Posts	2892	20.9	20.9	100.0
	Total	13822	100.0	100.0	

Appendix 4- Characterization of the sample by type of content



Type of Content					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Call to action	81	19.5	19.5	19.5
	Humour	81	19.5	19.5	39.0
	Informative	174	41.9	41.9	81.0
	Positive emotional appeal	73	17.6	17.6	98.6
	Testimonial	1	0.2	0.2	98.8
	Instructive	5	1.2	1.2	100.0
	Total	415	100.0	100.0	

Appendix 5- Distribution of the sample by type of content and separated by humanized and non-humanized posts


Humanized Posts vs. Non-Humanized Posts * Type of content Crosstabulation									
			Type of Content						Total
			Call-to-action	Humour	Informative	Positive emotional appeal	Testimonial	Instructive	
Humanized Posts vs. Non-Humanized Posts	Humanized Posts	Count	78	81	80	71	0	5	315
		% within Humanized Posts vs. Non-Humanized Posts	24.8%	25.7%	25.4%	22.5%	0.0%	1.6%	100.0%
	Non-Humanized Posts	Count	3	0	94	2	1	0	100
		% within Non-Humanized Posts	3.0%	0.0%	94.0%	2.0%	1.0%	0.0%	100.0%
Total		Count	81	81	174	73	1	5	415
		% within Humanized Posts vs. Non-Humanized Posts	19.5%	19.5%	41.9%	17.6%	.2%	1.2%	100.0%

Appendix 6- Examples of posts collected for each type of content identified



Examples of posts with the content "call-to-action", separated by humanized and non-humanized characters

Humanized Posts	Non- Humanized Posts
Call-to-Action Content	
 <p>Grefusa 1/2 · 🌐</p> <p>Sabías que... en Grefusa, sólo empleamos aceite de oliva y girasol en la elaboración de nuestros productos. #SinGrasasVegetales http://bit.ly/grefunutricion</p> <p>👍 Gosto 💬 Comentar ➦ Partilhar</p>	 <p>Vive Soy 18/4 · 🌐</p> <p>Hacer ejercicio nos ayuda a sentirnos mejor, ¿por qué no realizarlo durante todo el año? Anímate a mantener el ritmo para que siempre te sientas activo y feliz ¡A moverse! 🏃🏻‍♂️🏃🏻‍♀️ https://goo.gl/j4V6Xi</p> <p>👍 Gosto 💬 Comentar ➦ Partilhar</p>


Example of post with the content "humour"

Humanized Posts	Non- Humanized Posts
Humour Content	
 <p>Babybel 0/2 · 🌐</p> <p>Que dois ricos queijos!</p> <p>Sabias que não temo corantes nem conservantes? Seu mesmo não!</p> <p>Ele que bom, poré tá. É eu estou cheio de cálcio e proteínas!</p> <p>👍 Gosto 💬 Comentar ➦ Partilhar</p>	<p>Not applied</p>

Example of posts with the content "informative", separated by humanized and non-humanized characters


Humanized Posts	Non- Humanized Posts
Informative Content	
 <p>Hortifruti 1/6 · €</p> <p>Além de ajudar a reduzir o colesterol ruim e outras gorduras no sangue, protegendo o corpo de doenças cardíacas, obesidade e diabetes, a maçã, consumida com a casca, nutre os músculos, impedindo a atrofia muscular na maioridade. #ficadica #vidasaudavel #nahortifrutitem</p> <p>Sou ainda melhor com casca!</p> <p>Gosto Comentar Partilhar</p>	 <p>La Huerta 29/3 · €</p> <p>¿Sabías que? El mango es antioxidante y anticancerígeno. Se trata de un fruto rico en ácidos como el málico y mirístico, vitamina A y vitamina C, que dotan al organismo, para luchar contra los radicales libres y posee una efectiva lucha anticancerígena, gracias a estas vitaminas y a los flavonoides como la quercitina. Por su contenido en vitamina A es importante para la salud.</p> <p>Mango en Cubos</p> <p>La Huerta www.lahuerta.com.mx #LaHuerta</p> <p>Gosto Comentar Partilhar</p>

Example of posts with the content "positive emotional appeal", separated by humanized and non-humanized characters


Humanized Posts	Non- Humanized Posts
Positive Emotional Appeal	
 <p>Vitalin Sem Glúten 21 de Agosto de 2016 · €</p> <p>Conte com o time de produtos #Vitalin para manter uma alimentação saudável e ter mais disposição. Exercite bons hábitos sempre! #PratiqueVitalin #vitalin #vitalinsemgluten #saudavelcomosesentirbem #SemGlúten #SemLactose #Saudável #VidaSaudável #Saboroso</p> <p>CONQUISTA A VITÓRIA QUEM PRÁTICA UMA VIDA SAUDÁVEL TODOS OS DIAS</p> <p>Gosto Comentar Partilhar</p>	 <p>MiGurt 30 de Novembro de 2016 · €</p> <p>Sabemos que te gusta tener una vida saludable y mantener una figura de revista, pero a veces cuesta un poco no salirse de la rutina, por eso te recomendamos que te rodees de personas que también sigan un estilo de vida que promueva la salud y una dieta equilibrada, de esta forma podrán potenciar y será más difícil fallar 😊 #EnFormaConMiGurtLight</p> <p>AMBIENTE SAUDÁVEL. vida fitness</p> <p>Gosto Comentar Partilhar</p>

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Example of post with the content "testimonial"

Humanized Posts	Non- Humanized Posts
Testimonial	
Not Applied	 <p>Avni Kaul Nutritionist and Wellness Coach New Delhi</p>

Example of post with the content "instructive"

Humanized Posts	Non- Humanized Posts
Instructive	
 <p>OVOS À MODA DA FRUIT</p> <p>Que tal um prato de ovos estrelados e batatas fritas? Este momento Fruit não parece nada mas... é muito saudável! Na verdade, os ovos são feitos de iogurte grego light e duas metades de pêssego e as batatas fritas não são mais que palitos de maçã. Engana bem, não engana?</p> <p>Disponham o iogurte como se fossem claras e coloquem as metades de pêssego no meio. Juntem os palitos de maçã sem casca. Por cima podem colocar bocadinhos de Fruit como se fosse cebola frita. É um prato que seria altamente calórico não passa de um lanche ou uma sobremesa saudável e cheia de nutrientes essenciais.</p> <p>Uma boa forma de fazer com que os mais pequenos comam fruta e de juntar um pouco mais de diversão aos pratos 😊</p> <p>Que acham deste faça-você-mesmo?</p>	Not Applied

Appendix 7- Distribution of number of likes, comments and shares regarding the type of content and separated by humanized and non-humanized posts

Number of Likes

Humanized Posts vs. Non-Humanized Posts * Type of content Crosstabulation

			Type of Content						Total
			Call-to-action	Humour	Informative	Positive emotional appeal	Testimonial	Instructive	
Humanized Posts vs. Non-Humanized Posts	Humanized Posts	Count	39856	55548	66239	52405	0	2740	216788
		% within Humanized Posts vs. Non-Humanized Posts	18.4%	25.6%	30.6%	24.2%	0.0%	1.3%	100,0%
	Non-Humanized Posts	Count	42	0	54664	14	25	0	54745
		% within Humanized Posts vs. Non-Humanized Posts	0.1%	0.0%	99.9%	0.0%	0.0%	0.0%	100.0%
Total	Count	39898	55548	120903	52419	25	2740	271533	
	% within Humanized Posts vs. Non-Humanized Posts	14.7%	20.5%	44.5%	19.3%	0.0%	1.0%	100.0%	

Presentation of the mean of likes, concerning the type of content for humanized posts

Report			
Number of likes per post			
Type of content	Mean	N	Std. Deviation
Call to action	510.97	78	1142.26
Humour	685.78	81	1418.09
Informative	827.99	80	2519.95
Positive emotional appeal	738.10	71	1981.19
Instructive	548.00	5	354.16
Total	688.22	315	1822.15

Number of Comments

Humanized Posts vs. Non-Humanized Posts * Type of content Crosstabulation								
			Type of Content					Total
			Call-to-action	Humour	Informative	Positive emotional appeal	Instructive	
Humanized Posts vs. Non-Humanized Posts	Humanized Posts	Count	3427	2186	980	353	74	7020
		% within Humanized Posts vs. Non-Humanized Posts	48.8%	31.1%	14.0%	5.0%	1.1%	100,0%
	Non-Humanized Posts	Count	0	0	1319	0	0	1319
		% within Humanized Posts vs. Non-Humanized Posts	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Total		Count	3427	2186	2299	353	74	8339
		% within Humanized Posts vs. Non-Humanized Posts	41.1%	26.2%	27.6%	4.2%	0.9%	100.0%

Presentation of the mean of comments, concerning the type of content for humanized posts

Report			
Number of comments per post			
Type of content	Mean	N	Std. Deviation
Call to action	43.94	78	266.43
Humour	26.99	81	133.33
Informative	12.25	80	32.21
Positive emotional appeal	4.97	71	9.39
Instructive	14.80	5	11.78
Total	22.29	315	149.79

Number of Shares

Humanized Posts vs. Non-Humanized Posts * Type of content Crosstabulation									
			Type of Content						Total
			Call -to-action	Humour	Informative	Positive emotional appeal	Testimonial	Instructive	
Humanized Posts vs. Non-Humanized Posts	Humanized Posts	Count	3069	3291	2505	1720	0	345	10930
		% within Humanized Posts vs. Non-Humanized Posts	28.1%	30.1%	22.9%	15.7%	0.0%	3.2%	100.0%
	Non-Humanized Posts	Count	2	0	2885	0	5	0	2892
		% within Humanized Posts vs. Non-Humanized Posts	0.1%	0.0%	99.8%	0.0%	0.2%	0.0%	100.0%
Total		Count	3071	3291	5390	1720	5	345	13822
		% within Humanized Posts vs. Non-Humanized Posts	22.2%	23.8%	39.0%	12.4%	0.0%	2.5%	100.0%

Presentation of the mean of shares, concerning the type of content for humanized posts

Report			
Number of shares per post			
Type of content	Mean	N	Std. Deviation
Call to action	39.35	78	108.37
Humour	40.63	81	141.91
Informative	31.31	80	82.18
Positive emotional appeal	24.23	71	77.28
Instructive	69.00	5	36.37
Total	34.70	315	105.45

Appendix 8- Distribution of the humanized posts by anthropomorphic dimensions

Humanized posts separated by anthropomorphic dimensions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Human Facial Physiognomy	62	19.7	19.7	19.7
	Human Body Lineaments	89	28.3	28.3	47.9
	Human Facial Physiognomy and Human Body Lineaments	164	52.1	52.1	100.0
	Total	315	100.0	100.0	

Appendix 9- Distribution of humanized posts by Human Facial Physiognomy (%)

Human Facial Physiognomy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Face	25	40.3	40.3	40.3
	Eyes	35	56.5	56.5	96.8
	Mouth	2	3.2	3.2	100.0
	Total	62	100.0	100.0	

Appendix 10- Examples of posts collected to demonstrate the Human Facial Physiognomy



Appendix 11- Distribution of humanized posts by Human Body Lineaments (%)

Human Body Lineaments					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Look like a person	70	78.7	78.7	78.7
	Trunk	19	21.3	21.3	100.0
	Total	89	100.0	100.0	

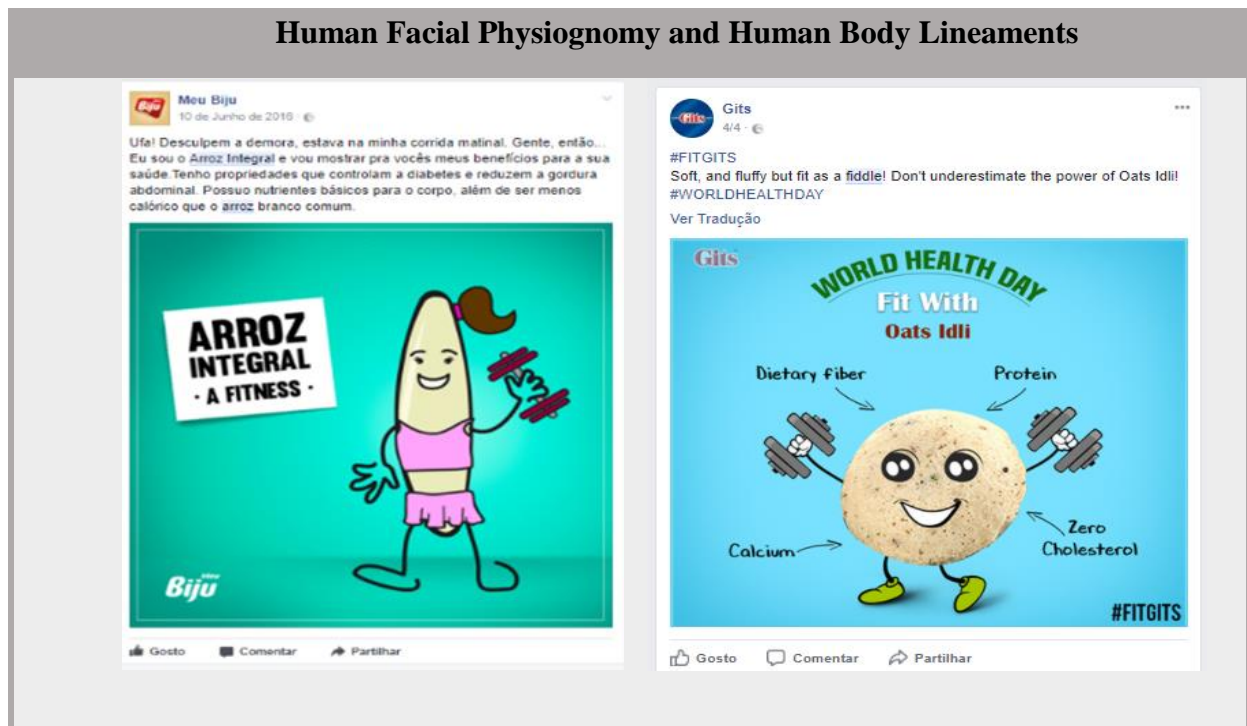
Appendix 12- Examples of posts collected to demonstrate the Human Body Lineaments

Examples of posts with the Human Body Lineaments



Appendix 13- Examples of posts collected to demonstrate the Human Facial Physiognomy and Human Body Lineaments

Example of post with Human Facial Physiognomy and Human Body Lineaments



Appendix 14- Distribution of number of likes regarding the anthropomorphic dimensions

Humanized posts separated by anthropomorphic dimensions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Human Facial Physiognomy	13829	6.4	6.4	6.4
	Human Body Lineaments	72725	33.5	33.5	39.9
	Human Facial Physiognomy and Human Body Lineaments	130234	60.1	60.1	100.0
	Total	216788	100.0	100.0	

Presentation of mean of likes by posts regarding the anthropomorphic dimensions

Report			
Number of likes per post			
Humanized posts separated by dimension	Mean	N	Std. Deviation
Human Facial Physiognomy	223.05	62	359.11
Human Body Lineaments	817.13	89	2709.75
Human Facial Physiognomy and Human Body Lineaments	794.11	164	1510.27
Total	688.22	315	1822.15

Appendix 15- Distribution of number of comments regarding the anthropomorphic dimensions

Humanized posts separated by anthropomorphic dimensions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Human Facial Physiognomy	175	2.5	2.5	2.5
	Human Body Lineaments	1077	15.3	15.3	17.8
	Human Facial Physiognomy and Human Body Lineaments	5768	82.2	82.2	100.0
	Total	7020	100.0	100.0	

Presentation of mean of comments by posts regarding the anthropomorphic dimensions

Report			
Number of comments per post			
Humanized posts separated anthropomorphic dimension	Mean	N	Std. Deviation
Human Facial Physiognomy	2.82	62	5.68
Human Body Lineaments	12.10	89	31.20
Human Facial Physiognomy and Human Body Lineaments	35.17	164	205.70
Total	22.29	315	149.79

Appendix 16- Distribution of number of shares regarding the anthropomorphic dimensions

Humanized posts separated by anthropomorphic dimensions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Human Facial Physiognomy	1034	9.5	9.5	9.5
	Human Body Lineaments	1872	17.1	17.1	26.6
	Human Facial Physiognomy and Human Body Lineaments	8024	73.4	73.4	100.0
	Total	10930	100.0	100.0	

Presentation of mean of shares by post regarding the anthropomorphic dimensions

Report			
Number of shares per post			
Humanized posts separated by feature	Mean	N	Std. Deviation
Human Facial Physiognomy	16.68	62	57.23
Human Body Lineaments	21.03	89	44.71
Human Facial Physiognomy and Human Body Lineaments	48.93	164	136.70
Total	34.70	315	105.45

Appendix 17- Distribution of the sample by day of the week when the post was published

Week day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monday	73	17.6	17.6	17.6
	Tuesday	60	14.5	14.5	32.0
	Wednesday	83	20.0	20.0	52.0
	Thursday	64	15.4	15.4	67.5
	Friday	72	17.3	17.3	84.8
	Weekend	63	15.2	15.2	100.0
	Total	415	100.0	100.0	

Appendix 18- Distribution of number of likes concerning the day of the posts' publication

Week day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monday	42133	15.5	15.5	15.5
	Tuesday	52513	19.3	19.3	34.9
	Wednesday	56409	20.8	20.8	55.6
	Thursday	53370	19.7	19.7	75.3
	Friday	47756	17.6	17.6	92.9
	Weekend	19352	7.1	7.1	100.0
	Total	271533	100.0	100.0	

Presentation of mean of likes by post regarding the day of the posts' publication

Report			
Number of likes per post			
Week day when the post was published	Mean	N	Std. Deviation
Monday	577.16	73	1120.72
Tuesday	875.22	60	2343.78
Wednesday	679.63	83	1798.08
Thursday	833.91	64	1879.75
Friday	663.28	72	1910.88
Weekend	307.17	63	621.53
Total	654.30	415	1701.48

Appendix 19- Distribution of number of comments concerning the day of the posts' publication

Week day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monday	676	8.1	8.1	8.1
	Tuesday	687	8.2	8.2	16.3
	Wednesday	1037	12.4	12.4	28.8
	Thursday	4015	48.1	48.1	76.9
	Friday	746	8.9	8.9	85.9
	Weekend	1178	14.1	14.1	100.0
	Total	8339	100.0	100.0	

Presentation of mean of comments by post regarding the day of the posts' publication

Report			
Number of comments per post			
Week day when the post was published	Mean	N	Std. Deviation
Monday	9.26	73	25.43
Tuesday	11.45	60	27.43
Wednesday	12.49	83	28.91
Thursday	62.73	64	320.87
Friday	10.36	72	23.75
Weekend	18.70	63	76.51
Total	20.09	415	131.79

Appendix 20- Distribution of number of shares considering the day of the posts' publication

Week day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monday	2686	19.4	19.4	19.4
	Tuesday	1555	11.3	11.3	30.7
	Wednesday	2840	20.5	20.5	51.2
	Thursday	3241	23.4	23.4	74.7
	Friday	2085	15.1	15.1	89.8
	Weekend	1415	10.2	10.2	100.0
	Total	13822	100.0	100.0	

Presentation of mean of shares regarding the day of the posts' publication

Report			
Number of shares per post			
Week day when the post was published	Mean	N	Std. Deviation
Monday	36.79	73	90.53
Tuesday	25.92	60	55.87
Wednesday	34.22	83	85.68
Thursday	50.64	64	176.50
Friday	28.96	72	68.12
Weekend	22.46	63	56.00
Total	33.31	415	97.00

Appendix 21- Distribution of the sample by time of the day of the posts' publication (%)

Time of the day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12:00 am inc- 12:00 pm	123	29.6	29.6	29.6
	12:00 pm inc - 02:00pm	53	12.8	12.8	42.4
	02:00pm inc -06:00pm	144	34.7	34.7	77.1
	06:00pm inc- 12:00 am	95	22.9	22.9	100.0
	Total	415	100.0	100.0	

Appendix 22- Distribution of number of likes in relation to the moment of the day of the posts' publication

Time of the day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12:00 am inc- 12:00 pm	71646	26.4	26.4	26.4
	12:00 pm inc - 02:00pm	42129	15.5	15.5	41.9
	02:00pm inc -06:00pm	94338	34.7	34.7	76.6
	06:00pm inc- 12:00 am	63420	23.4	23.4	100.0
	Total	271533	100.0	100.0	

Presentation of mean of likes by post regarding the moment of the day of the posts' publication

Report			
Number of likes per post			
Time of the day when the post was published	Mean	N	Std. Deviation
12:00 am inc- 12:00 pm	582.49	123	1262.16
12:00 pm inc - 02:00pm	794.89	53	1823.94
02:00pm inc -06:00pm	655.13	144	1587.23
06:00pm inc- 12:00 am	667.58	95	2234.26
Total	654.30	415	1701.48

Appendix 23- Distribution of number of comments in relation to the moment of the day of the posts' publication

Time of the day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12:00 am inc- 12:00 pm	1345	16.1	16.1	16.1
	12:00 pm inc - 02:00pm	4282	51.3	51.3	67.5
	02:00pm inc -06:00pm	1663	19.9	19.9	87.4
	06:00pm inc- 12:00 am	1049	12.6	12.6	100.0
	Total	8339	100.0	100.0	

Presentation of mean of comments by post regarding the moment of the day of the posts' publication

Report			
Number of comments per post			
Time of the day when the post was published	Mean	N	Std. Deviation
12:00 am inc- 12:00 pm	10.93	123	30.33
12:00 pm inc - 02:00pm	80.79	53	351.85
02:00pm inc -06:00pm	11.55	144	48.16
06:00pm inc- 12:00 am	11.04	95	30.02
Total	20.09	415	131.79

Appendix 24- Distribution of number of shares based on the moment of the day of the posts' publication

Time of the day when the post was published					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12:00 am inc- 12:00 pm	2802	20.3	20.3	20.3
	12:00 pm inc - 02:00pm	3465	25.1	25.1	45.3
	02:00pm inc -06:00pm	4942	35.8	35.8	81.1
	06:00pm inc- 12:00 am	2613	18.9	18.9	100.0
	Total	13822	100.0	100.0	

Presentation of mean of shares regarding the moment of the day of the posts' publication

Report			
Number of shares per post			
Time of the day when the post was published	Mean	N	Std. Deviation
12:00 am inc- 12:00 pm	22.78	123	47.99
12:00 pm inc - 02:00pm	65.38	53	198.71
02:00pm inc -06:00pm	34.32	144	90.94
06:00pm inc- 12:00 am	27.51	95	57.11
Total	33.31	415	97.00

Appendix 25- Results of Kolmogorov- Smirnov Test and Independent Samples T Test, to test Hypothesis 1

Number of Likes

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Humanized Posts vs. Non- Humanized Posts		N
Number of likes per post	Humanized Posts	80
	Non-Humanized Posts	80
	Total	160

Test Statistics ^a		
		Number of likes per post
Most Extreme Differences	Absolute	.14
	Positive	.06
	Negative	-.14
Kolmogorov-Smirnov Z		.87
Asymp. Sig. (2-tailed)		.44
a.Grouping Variable: Posts humanized vs. non- humanized		

T-Test

Group Statistics					
Humanized Posts vs. Non- Humanized Posts		N	Mean	Std. Deviation	Std. Error Mean
Number of likes per post	Humanized Posts	80	827.99	2519.95	281.74
	Non-Humanized Posts	80	196.51	384.46	42.98

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of likes per post	Equal variances assumed	14.93	.00	2.22	15.00	.03	631.48	285.00	68.58	1194.37
	Equal variances not assumed			2.22	82.68	.03	631.48	285.00	64.59	1198.36

Number of Comments

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Humanized Posts vs. Non- Humanized Posts		N
Number of comments per post	Humanized Posts	80
	Non-Humanized Posts	80
	Total	160

Test Statistics^a		
		Number of comments per post
Most Extreme Differences	Absolute	.15
	Positive	-.01
	Negative	-.15
Kolmogorov-Smirnov Z		.95
Asymp. Sig. (2-tailed)		.33
a. Grouping Variable: Posts humanized vs. non- humanized		

T-Test

Group Statistics					
Humanized Posts vs. Non- Humanized Posts		N	Mean	Std. Deviation	Std. Error Mean
Number of comments per post	Humanized Posts	80	12.25	32.21	3.60
	Non- Humanized Posts	80	11.59	37.21	4.16

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of comments per post	Equal variances assumed	.02	.89	.12	158.00	.90	.66	5.50	-10.21	11.53
	Equal variances not assumed			.12	154.81	.90	.66	5.50	-10.21	11.53

Number of Shares

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Humanized Posts vs. Non- Humanized Posts		N
Number of shares per post	Humanized Posts	80
	Non-Humanized Posts	80
	Total	160

Test Statistics ^a		
		Number of shares per post
Most Extreme Differences	Absolute	.14
	Positive	.00
	Negative	-.14
Kolmogorov-Smirnov Z		.87
Asymp. Sig. (2-tailed)		.44

a. Grouping Variable: Posts humanized vs. non- humanized

T-Test

Group Statistics					
Humanized Posts vs.Non- Humanized Posts		N	Mean	Std. Deviation	Std. Error Mean
Number of shares per post	Humanized Posts	80	31.31	82.18	9.19
	Non-Humanized Posts	80	20.10	44.62	4.99

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of shares per post	Equal variances assumed	2.23	.14	1.07	158.00	.29	11.21	10.46	-9.44	31.86
	Equal variances not assumed			1.07	121.85	.29	11.21	10.46	-9.49	31.91

Appendix 26- Results of Kolmogorov- Smirnov Test and Independent Sample T Test, to test Hypothesis 2

Number of Likes

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of likes per post	Call-to-action	78
	Humour	81
	Total	159

Test Statistics ^a		
		Number of likes per post
Most Extreme Differences	Absolute	.16
	Positive	.10
	Negative	-.16
Kolmogorov-Smirnov Z		1.01
Asymp. Sig. (2-tailed)		.26
a. Grouping Variable: Type of content		

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of likes per post	Call-to-action	78	510.97	1142.26	129.34
	Humour	81	685.78	1418.09	157.57

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of likes per post	Equal variances assumed	1.11	.29	-.85	157.00	.39	-174.80	204.68	-579.08	229.47
	Equal variances not assumed			-.86	152.29	.39	-174.80	203.85	-577.54	227.93

Number of Comments

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of comments per post	Call-to-action	78
	Humour	81
	Total	159

Test Statistics ^a		
		Number of comments per post
Most Extreme Differences	Absolute	.09
	Positive	.05
	Negative	-.09
Kolmogorov-Smirnov Z		.58
Asymp. Sig. (2-tailed)		.89

a. Grouping Variable: Type of content

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of comments per post	Call-to-action	78	43.94	266.43	30.17
	Humour	81	26.99	133.33	14.81

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of comments per post	Equal variances assumed	1.10	.30	.51	157.00	.61	16.95	33.23	-48.68	82.58
	Equal variances not assumed			.50	112.33	.62	16.95	33.61	-49.64	83.54

Number of Shares

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of shares per post	Call-to-action	78
	Humour	81
	Total	159

Test Statistics ^a		
		Number of shares per post
Most Extreme Differences	Absolute	.09
	Positive	.09
	Negative	-.06
Kolmogorov-Smirnov Z		.57
Asymp. Sig. (2-tailed)		.90

a. Grouping Variable: Type of content

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of shares per post	Call-to-action	78	39.35	108.37	12.27
	Humour	81	40.63	141.91	15.77

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of shares per post	Equal variances assumed	.01	.90	-.06	157.00	.95	-1.28	20.08	-40.94	38.38
	Equal variances not assumed			-.06	149.34	.95	-1.28	19.98	-40.76	38.20

Appendix 27- Results of Kolmogorov- Smirnov Test, Independent Sample T Test and Mann-Whitney, to test Hypothesis 3

Number of Likes

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of likes per post	Call-to- action	78
	Informative	80
	Total	158

Test Statistics ^a		
		Number of likes per post
Most Extreme Differences	Absolute	.26
	Positive	.26
	Negative	-.05
Kolmogorov-Smirnov Z		1.61
Asymp. Sig. (2-tailed)		.01

a. Grouping Variable: Type of content

Mann-Whitney Test

Ranks				
Type of Content		N	Mean Rank	Sum of Ranks
Number of likes per post	Call-to- action	78	86.42	6740.50
	Informative	80	72.76	5820.50
	Total	158		

Test Statistics ^a	
	Number of likes per post
Mann-Whitney U	2580.50
Wilcoxon W	5820.50
Z	-1.88
Asymp. Sig. (2-tailed)	.06

a. Grouping Variable: Type of content

Number of Comments

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of comments per post	Call-to- action	78
	Informative	80
	Total	158

Test Statistics ^a		
		Number of comments per post
Most Extreme Differences	Absolute	.08
	Positive	.08
	Negative	-.04
Kolmogorov-Smirnov Z		.51
Asymp. Sig. (2-tailed)		.96
a. Grouping Variable: Type of content		

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of comments per post	Call-to- action	78	43.94	266.43	30.17
	Informative	80	12.25	32.21	3.60

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of comments per post	Equal variances assumed	3.91	.05	1.06	156.00	.29	31.69	30.01	-27.59	90.96
	Equal variances not assumed			1.04	79.19	.30	31.69	30.38	-28.79	92.16

Number of Shares

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of shares per post	Call-to- action	78
	Informative	80
	Total	158

Test Statistics ^a		
		Number of shares per post
Most Extreme Differences	Absolute	.08
	Positive	.05
	Negative	-.08
Kolmogorov-Smirnov Z		.50
Asymp. Sig. (2-tailed)		.96
a. Grouping Variable: Type of content		

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of shares per post	Call-to- action	78	39.35	108.37	12.27
	Informative	80	31.31	82.18	9.19

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of shares per post	Equal variances assumed	1.53	.22	.53	156.00	.60	8.03	15.28	-22.14	38.21
	Equal variances not assumed			.52	143.56	.60	8.03	15.33	-22.27	38.33

Appendix 28- Results of Kolmogorov- Smirnov Test, Independent Sample T Test and Mann-Whitney, to test Hypothesis 4

Number of Likes

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of likes per post	Call-to- action	78
	Positive emotional appeal	71
	Total	149

Test Statistics ^a		
		Number of likes per post
Most Extreme Differences	Absolute	.19
	Positive	.08
	Negative	-.19
Kolmogorov-Smirnov Z		1.14
Asymp. Sig. (2-tailed)		.15

a. Grouping Variable: Type of content

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of likes per post	Call-to- action	78	510.97	1142.26	129.34
	Positive emotional appeal	71	738.10	1981.19	235.12

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of likes per post	Equal variances assumed	2.53	.11	-.87	147.00	.39	-227.12	262.06	-745.02	290.77
	Equal variances not assumed			-.85	109.64	.40	-227.12	268.35	-758.95	304.70

Number of Comments

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of comments per post	Call-to- action	78
	Positive emotional appeal	71
	Total	149

Test Statistics ^a		
		Number of comments per post
Most Extreme Differences	Absolute	.22
	Positive	.04
	Negative	-.22
Kolmogorov-Smirnov Z		1.36
Asymp. Sig. (2-tailed)		.048
a. Grouping Variable: Type of content		

Mann-Whitney Test

Ranks				
Type of Content		N	Mean Rank	Sum of Ranks
Number of comments per post	Call-to-action	78	81.57	6362.50
	Positive emotional appeal	71	67.78	4812.50
	Total	149		

Test Statistics ^a	
	Number of comments per post
Mann-Whitney U	2256.50
Wilcoxon W	4812.50
Z	-2.01
Asymp. Sig. (2-tailed)	.04
a. Grouping Variable: Type of content	

Number of Shares

Two Sample- Kolmogorov-Smirnov Test

Frequencies		
Type of Content		N
Number of shares per post	Call-to- action	78
	Positive emotional appeal	71
	Total	149

Test Statistics ^a		
		Number of shares per post
Most Extreme Differences	Absolute	.07
	Positive	.04
	Negative	-.07
Kolmogorov-Smirnov Z		.44
Asymp. Sig. (2-tailed)		.99
a. Grouping Variable: Type of content		

T-Test

Group Statistics					
Type of Content		N	Mean	Std. Deviation	Std. Error Mean
Number of shares per post	Call-to- action	78	39.35	108.37	1227
	Positive emotional appeal	71	24.23	77.28	9.17

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Number of shares per post	Equal variances assumed	3.21	.08	.97	147.00	.33	15.12	15.56	-15.62	45.87
	Equal variances not assumed			.99	139.26	.33	15.12	15.32	-15.17	45.41