"May the likes be with you" *

A case study of the effect of social presence and humor appreciation on customers' engagement with brand-generated Instagram posts.

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Abstract

A case study of an existing French brand is presented by means of a content analysis of its Instagram posts and an online survey among 80 French speaking participants. The content analysis of the brand's feed revealed six content themes. Focusing on the humorous theme, the main purpose of the study was to test the relationship between social presence and customers' engagement and humor appreciation and customers' engagement. An exploratory analysis of the effect of the other themes was included in order to provide insights into the general effect of social presence and type of theme on customers' engagement. The main analysis about social presence did not provide support for the expected hypotheses, however the exploratory analysis showed that for some themes identified in the brand's feed, the relationship between social presence and the number of likes was significant. The results showed that humor appreciation has a positive effect on the number of likes whereas no effect was found for the number of comments. The results offer both scientific and practical contributions. Present research complements previous work in the social media marketing context with real data observations based on a fine-grained approach and suggestions for future research approaches in the context. From a managerial perspective, the results offer relevant observations about customers' engagement with brand-generated content based on its visual characteristics.

Keywords: Social media marketing; visual brand-generated content; social presence; humor; consumers' engagement; Instagram.

*The quotation in the title is taken from a post of Shanty Biscuits from November 20, 2019

Introduction

Social media marketing is a kind of marketing that develops through social media communities such as social network sites or blogs (Neti, 2011). In contrast to traditional media marketers who focused mostly on promoting product purchase (Erdoğmuş & Cicek, 2012), the goal of social media marketers shifted to encouraging customers' engagement with posts because engagement and enthusiasm are the direct result of satisfied and emotional-bonded customers and therefore, represent the key to successful marketing strategies (Pansari & Kumar, 2017). Consequently, customers' engagement becomes a main goal that companies should aspire to and the need to answer the question of how engagement can be encouraged effectively rises.

Creating social content suitable for that purpose can be challenging (Ashley & Tuten, 2015). While focusing on the issue of maximizing psychological engagement, brand managers are confronted with two main challenges (Ashley & Tuten, 2015). The first challenge is related to the generation of messages that are creative enough to stand out from the others (Ashley & Tuten, 2015). Customers are exposed to much more advertising content than before, therefore they become more resistant to it and harder to impress (Rumbo, 2002). The second challenge regards the subjective variation of consumers' attitudes towards the content (Ashley & Tuten, 2015). In fact, the way an advertisement is effective depends also on consumers' needs (Keller, 2009) and the match between them and the brand-generated content they are exposed to (Johar & Sirgy, 1991).

Past research has focused on the factors that are influencing engagement (de Vries, Gensler & Leeflang, 2012). Multiple experimental studies have shown that one of the main factors is social presence (Cyr, Head, Larios & Pan, 2009; Droulers & Adil, 2015), whereas other

studies supported a positive relationship between humor use and customer's engagement (Malhotra, Malhotra & See, 2013; Lee, Hosanagar & Nair, 2018).

Social presence (Short, Williams & Christie, 1976) is perceived when a website's characteristics are able to prompt the feeling of human contact through features enhancing warmth, personalization and sociability (Yoo & Alavi, 2001). As shown in Figure 1, a post can display three different levels of social presence depending on whether they show a human face, any part of the human body or nothing human (Cyr et al., 2009). Research investigating the visual aspects of brand-generated content has focused on the effect of social presence in terms of actual human presence in visual content, showing a positive effect on content appeal (Cyr et al., 2009). Further research has shown that higher levels of human presence displayed on Instagram posts lead to higher users' engagement than lower levels (Bakhshi, Shamma & Gilbert, 2014).

Figure 1. From left to right. High human condition. Translated text: Vote for Shanty Biscuits. Medium human condition. Translated text: I am going to the hairdresser. Low human condition. Original text: Boys just wanna have…

Humor has been defined as any content shared by someone with the intention to be amusing (Cooper, 2005) and its effectiveness has been proven to be dependent on the subjective characteristics of its target group (Weinberger & Gulas, 1992). In the context of social media marketing, past research pointed out its beneficial effect for brands showing that humor can lead to increased customers' engagement and the creation of long-term relationship with customers (Lee et al, 2018).

An attempt to address the issue of customers' engagement by means of a content analysis was made by Bakhshi et al. (2014). In their study, they analyzed the relationship between the presence of faces and the number of likes and comments based on a final sample of one million Instagram posts. The authors showed that posts with faces had more likes and comments compared to posts with pictures not displaying a human face. However, their content analysis presented some shortcomings. In fact, since data was randomly collected from Instagram, it was not controlled for the many different components displayed in the posts that could have played a role. This coarse-grained nature of the study made it impossible for the authors to control for any other visual feature of the posts or content of the captions. Additionally, a sample of one million posts was too big to identify the effects of all the different properties of the images in detail and to control for variation. Therefore, the scarce control of the noise in the data might have caused confounds to also play a role on engagement.

Despite the efforts that have been made, more fine-grained studies in the context of brand-generated visual content on Instagram are needed. The present work aims to address the problem of encouraging engagement by answering the following research question:

RQ: What is the effect of social presence (high, medium or low human condition) and humor appreciation on customers' engagement (number of likes and comments) with brand-generated content in real-world Instagram data?

A case study of a very active Instagram page was conducted. Shanty Biscuits' Instagram feed was chosen to analyze on the basis of real-world data the relationship between the different levels of social presence of humorous posts and customers' engagement in terms of number of likes and comments. In combination with that, an online survey was conducted in order to analyze the relationship between humor appreciation of the brand's posts and customers' engagement in terms of number of likes and comments. The multimethod approach chosen for the analysis attempts to complement the work about social presence already done in experimental settings (Cyr et al, 2009; Droulers & Adil, 2015) and the coarse-grained nature of previous content analysis (Bakhshi et al., 2014). The present study promises a more fine-grained content analysis by carefully selecting the sample characteristics and defining clear content categories of the posts in order to make the data comparable and to avoid the effect of unexpected confounds to play a role. As reasoned above, the choice of a content analysis poses some challenges such as dealing with noisy data, a lot of variation and the difficulty of isolating specific variables. How these constraints were taken into account in the present study will be elaborated more extensively in the method section.

Theoretical framework

The following part of this paper moves on to provide a description of the theoretical background of social media marketing, in order to define the context of the present research

better. The report will start with a general introduction to the context of social media marketing and move to the shift to visual social media marketing. Moreover, the description of the evolution of the three core elements discussed in the present research, namely engagement, social presence, and humor will be provided together with the formulation of the analyzed hypotheses and the conceptual model.

Social media marketing

The rise of social media sites has changed the marketing landscape and the relationship between companies and customers by offering to both the opportunity to create content that is available in real-time, persistent and can be accessed anywhere at any time (Hennig-Thurau et al., 2010). Social media marketing is a communication tool used by companies to engage with (potential) customers with the intention to promote their products and their identity by means of social media sites (Neti, 2011). Social media sites differ from traditional channels as their main goal is to build relationships, brand image and loyalty rather than merely selling products (Erdoğmuş & Cicek, 2012), to enhance customers' engagement with the brand and the product (Pansari & Kumar, 2017) and, most importantly, to enhance the perception of the company's social presence (Neti, 2011).

Social media use has posed some challenges to marketers. The online environment is very dynamic as a lot of content is constantly generated both by brands and customers (Keegan & Rowley, 2017). As a consequence, due to this content overload, recognizing relevant factors on the basis of which developing effective marketing strategies becomes more difficult and adopting one unique strategy that can be applied to multiple situations is not possible (Keegan &

Rowley, 2017). Therefore, more research is required in order to understand what is the most effective way to profit from social media use and provide marketers with more concrete guidelines on how to elaborate effective marketing strategies based on the data they have.

Thus far, most of the research in the context of social media sites has focused on the distinction between two main marketing strategies applied to brand-generated content: information and entertainment (de Vries et al. 2012; Cvijikj & Michahelles, 2013). The two above mentioned strategies were already introduced in the context of traditional media advertisement where they were referred to as respectively informational and transformational (Puto & Wells, 1984). Informational strategies provide customers with objective and useful facts about the product or the brand, whereas transformational ones provide emotional and affective cues that aim to enhance attachment to the product and feelings of entertainment and excitement towards the experience related to the advertised product or the brand (Puto & Wells, 1984).

Some consistent results in previous research were related to the relationship between informational and transformational strategies and consumer goals (Johar & Sirgy, 1991; Naylor, Kleiser, Baker & Yorkston, 2008). The two-way interaction of Web 2.0 (O'Reilly, 2007) gave customers the possibility to publicly react to brand-generated content. Therefore, the latent power of customers who determine the quality of the content that they are provided with has become more evident (Keller, 2009). As a consequence, customers have limited marketers' influence on their personal choices by basing their judgements on their own needs more than before (Keller, 2009).

Ideal marketing strategies depend on consumers' goals. Since consumers' goals are, among others, related to the nature of the product (Johar & Sirgy, 1991), it can be argued that the

superiority of one strategy over the other is dependent on the match to the nature of the product or the industry in general. Based on the distinction between utilitarian and hedonic consumer goals, Naylor et al. (2008) explain that when utilitarian goals are salient in customers, informational strategies are more effective as they fulfill their need for factual information about the product. Consequently, the purchase of products driven by utilitarian goals such as computers (Cyr et al., 2009) or cars (Cutler, Thomas & Rao, 2000) makes informational strategies more effective. Contrarily, when hedonic goals are salient, customers are driven by emotional and symbolic motives that make transformational messages more effective (Naylor et al., 2008). Therefore, the purchase of products driven by hedonic consumer goals such as food (Naylor et al., 2008) makes transformational strategies more salient.

The present research focused on a brand that operates in the food industry. Based on the reasoning above, it was expected that in that case transformational factors would be significantly related to customers' engagement. Therefore, the present research focused on the effect of transformational factors such as social presence and use of humor on customers' engagement with the brands' Instagram posts.

Customers' engagement

Customers' engagement is a multidimensional construct which includes behavioral, emotional, and cognitive factors (Hollebeek, 2011). It is defined as the customer's involvement with the brand "through his direct or/and indirect contribution" (Pansari & Kumar, 2017, p 295). Customers' engagement is one of the main goals of social media marketing, as research found it to be a sign of customers' satisfaction and emotional involvement with the brand (Pansari &

Kumar, 2017).

Past research focused on the role of engagement and showed two main reasons why engagement is important for brands (Jaakkola & Alexander, 2014). The authors focused on engagement as a behavioral factor that prompts constructive feedback generation (Jaakkola & Alexander, 2014). This type of feedback represents a double advantage for firms, as customers generate comments that on the one hand, are a starting point for firms to improve their service and their products, and on the other hand positively influence other customers who also read them (Jaakkola & Alexander, 2014).

Further research which focused on the behavioral aspect of engagement, defined five components of the construct which highlight the multidimensionality of the construct one more time (So, King & Sparks, 2014). These components are useful to understand the process that favors customers' engagement (So et al., 2014) and cover the three main dimensions related to engagement previously identified by Hollebeek (2011), namely cognitive, emotional and behavioral, highlighting their interdependence. The first component proposed by So et al. (2014) is identification, a cognitive component explained through the degree to which customers define themselves through the brand. Next, they propose another cognitive component, namely attention that is defined as the degree to which customers are focused on the brand and its generated content. Thereafter, the authors propose the emotional component of enthusiasm, defined as customers' level of excitement towards the brand and/or brand content. Next to that, they propose a fourth component that may be interpreted to be both emotional and cognitive, namely the unconscious engagement and enjoyment of the brand and its products which relates to the customers' level of absorption. Lastly, they propose a behavioral component, interaction, that

explains customers' participation with brand content in terms of content generation and interaction with the brand.

The above mentioned elements are relevant in the context of the present research since they give an indication of both the process behind and the consequences of customers' engagement that companies should take into account when they want to successfully enhance it. Even though the behavioral component of engagement is the most tangible of the three, it is argued that the cognitive and emotional components represent two important prerequisites to take into consideration. Content with the ability to attract customers' cognitive attention such as human faces (Droulers & Adil, 2015) and which prompts enthusiasm and identification with the brand such as humor (Lee et al., 2018) results in customers' willingness to engage in interaction with it, that is namely behavioral engagement (So et al., 2014).

In the present study, the cognitive component of engagement (So et al., 2014) was included in terms of social presence as the independent variable. With regards to the emotional component of engagement (So et al., 2014), it was included by selecting posts of the analyzed brand which enhanced emotional engagement by means of humor. The analysis of humor fulfilled two separate purposes in the present research. In the first part of the main analysis, it was included as an observed factor that represented one of the specific content characteristics of the posts of the analyzed sample. In the second part, it was included as a measured factor that was included in the model as the independent variable. Lastly, the behavioral component of engagement (So et al., 2014) was included in the present research in terms of counts of customers' likes and comments under the analyzed posts, which were measured as the dependent variables in both parts of the main analysis.

The shift to visual social media marketing: the rise of Instagram

As technologies within the social media context evolved, visual elements gained more and more importance in the context of social media marketing, shifting from having a supportive to having a central role (Gretzel, 2017). Visual content has started including the main message rather than being an addition to it, therefore it has become the main driver of consumer engagement (Gretzel, 2017). As a consequence, since the need for new platforms focusing mainly if not exclusively on visuals increased, the question of how customers interpret and approach brand-generated visual content emerged (Gretzel, 2017).

Previous research already focused on the impact of visuals in the context of traditional media. Scott (1994) elaborated the theory of visual rhetoric in which the potential value of visual content was particularly emphasized. The theory is based on the idea since they can convey complex meanings, visuals have a higher potential to be persuasive compared to text. Many elements such as the choice between different layouts and styles or the arrangement of the different elements in the design of visual messages, help to build more complex messages and evoke affective reactions (Scott, 1994). Furthermore, past research described the picture superiority effect, the idea that thanks to the dual-coded nature of images — verbal and image code —, they are more easily impressed in memory than words alone (Paivio & Csapo, 1973). This greater potential of visual elements, called for a shift to visual social media marketing in which pictures are considered the central element of a strategy that aims to elicit customer engagement (Gretzel, 2017).

Instagram represents one of the main platform for visual social media marketing. Instagram is a social media platform through which brands can communicate to customers more

effectively thanks to the added value of images (Bakhshi et al., 2014; Gretzel, 2017). By offering the chance to use filters and edit pictures and with its exclusive focus on photo and video-sharing (Bakhshi et al., 2014; Gretzel, 2017), Instagram belongs to the emerging category of image-sharing services including, among others, Pinterest, a product-centered visual social media and Flickr, a community of professional photography, where exclusively visual content is used to share moments of people's lives and their opinions (Bakhshi et al., 2014; Paolanti, Kaiser, Schallner, Frontoni, & Zingaretti, 2017). By using images to communicate, Instagram represents a stronger communication tool for brands and marketers compared to other social media (Bakhshi et al., 2014). Moreover, with more than 1 billion monthly active users as of June 2018, Instagram has become one of the top two preferred social networks among teenagers in the United States surpassing social media sits like Twitter and Facebook (Clement, 2019). Most importantly in the context of present research, with its people-centered nature (Bakhshi et al., 2014), Instagram favors a higher degree of brand's social presence, whose importance in the social media context will be explained in the next section.

Social presence

One of the main opportunities offered by social media is the enhancement of social presence perception (Kaplan & Haenlein, 2010). Social presence theory introduced the concept of social presence, defining it as the degree to which computer mediated communication tools are able to transmit cues enhancing the perception of interacting with a human being (Short et al., 1976). Social presence is a psychological factor associated with perception of warmth, sociability and personalization of a website and the degree to which it enhances physical and emotional

proximity (Yoo & Alavi, 2001).

Multiple studies have focused on the importance of social presence in the context of customer engagement with visual branded content focusing on social presence cues in terms of human images in general (Cyr et al., 2009) and faces in particular (Droulers & Adil, 2015). Previous studies in psychology and neuroscience have generally focused on the effect of faces on people's brain. Diamond and Carey (1986) elaborated the expertise hypothesis which states that individuals with a certain expertise in a particular field are able to process stimuli containing visual representations related to the field more quickly. For example, Diamond and Carey (1986) showed that dog experts are able to process stimuli showing dogs quickly because they are used to recognizing them. In the same way, all human individuals have high levels of expertise when it comes to processing human faces and are therefore able to do it quickly (Droulers & Adil, 2015). Another study showed how the attention to a particular element of a visual advertisement can be transferred to the other elements of the advertisement and consequently increase the overall attention to the content, elaborating the attention transfer hypothesis (Pieters & Wedel, 2004).

Droulers and Adil (2015) combined the reasoning and the findings of the expertise hypothesis (Diamond & Carey, 1986) and attention transfer (Pieters & Wedel, 2004) by extending them to the context of visual social media marketing and emphasized the impact of human images in brand-generated visual content. Based on the expertise hypothesis, they reasoned that people's attention is quickly caught by human images whereas based on the attention transfer, the increased attention to human elements of visual content can boost the memorization of the content (Droulers & Adil, 2015). Consequently, the authors concluded that

the presence of human faces in visual branded content is beneficial for the brand as it enhances customers' product and brand recall.

The present operationalization of human presence is mainly based on the fine-grained categories of the experimental study conducted by Cyr et al. (2009). Cyr et al. (2009) conducted an experiment to analyze the effect of human presence on perceptions of warmth, appeal and social presence of a website. The authors distinguished between three possible levels of human presence condition (as already displayed in the examples taken from the present research in Figure 1), namely high, where human facial features were included, medium, where any part of the human body other than the face was included, and low, where no human image was included. Their findings suggested that customers generally prefer the high human condition the most and the low human condition the least. Given the importance of humor in brand-generated content which will be discussed in the next section, the main analysis will be performed in the context of humorous posts. The first part of the present work focuses on the effect of social presence in humorous brand-generated visual content on customers' engagement. Therefore, based on the findings of Cyr et al. (2009) and Bakhshi et al. (2014), the following hypotheses were formulated:

H1: Social presence in humorous brand-generated Instagram posts has a positive effect on the number of likes, such that (a) posts displaying the product and human facial features (high human condition) generate a higher number of likes compared to posts displaying the product and human features other than the face (medium human condition) and the product only (low human condition) and (b) posts displaying the product and human features other than the face

(medium human condition) generate a higher number of likes compared to posts displaying the product only (low human condition).

H2: Social presence in humorous brand-generated Instagram posts has a positive effect on the number of comments, such that (a) posts displaying the product and human facial features (high human condition) generate a higher number of comments compared to posts displaying the product and human features other than the face (medium human condition) and the product only (low human condition) and (b) posts displaying the product and human features other than the face (medium human condition) generate a higher number of comments compared to posts displaying the product only (low human condition).

Humor

Various research in the context of advertising pointed out the positive effect of the use of humor on customers' engagement with the brand (Lee et al., 2018) and customers' intentions to buy a product (Lussier, Grégoire & Vachon, 2017). Given its multidimensional nature, humor is a difficult concept to define (Martin, 2003). Various definitions acknowledged its amusing component. For example, humor was defined as any practice causing people to laugh, such as telling a joke or a pun (Smith, Harrington & Neck, 2000) or messages eliciting positive emotions such as fun or amusement (Styśko-Kunkowska & Borecka, 2010). Similarly, humor was also defined as any content shared by someone with the intention to be amusing (Cooper, 2005).

In the context of advertising, humor relies mainly on customers' ability to understand and tendency to appreciate playful brand-generated content (Fugate, 1998). In line with the idea of multidimensionality related to it, humor can be defined as a trait, a state, an ability, a behavior, a

coping strategy or a cognitive and emotional process (Martin, 2003). Thorson and Powell (1991) identified six humor dimensions: humor production, sense of playfulness, the ability to use humor to achieve social goals, the personal recognition of humor, appreciation of humor and the use of humor as an adaptive mechanism. Therefore, its effectiveness can be highly dependent on the subjective characteristics of the audience it is directed to, such as age, gender, nationality and target of the humor (Weinberger & Gulas, 1992) or aspects of personality such as extraversion (Martin, 2003; Styśko-Kunkowska & Borecka, 2010).

The type of humor displayed in advertisements plays an important role on customers' reactions. Researchers in the context of advertising focused on two main humor distinctions: constructive versus offensive (Martin, Puhlik-Doris, Larsen, Gray & Weir, 2003; Lunardo, Bompar & Saintives, 2018) and simple versus complex humor (Spielmann, 2014). Constructive humor is defined as a benign and non-hostile use of wit (Martin et al., 2003). Based on the target of the humor, either the self or someone else, it is possible to distinguish within this category between self-enhancing (directed to the self) and affiliative (directed to others) humor (Martin et al., 2003). Offensive humor is a kind of humor that has the potential to be harmful or misunderstood, such as in the case of sexist or racist jokes (Martin et al., 2003). Also in this case the target of the humor allows a further categorization, distinguishing between self-defeating (directed to the self) and aggressive (directed to the others) humor (Martin et al., 2003). Lunardo et al. (2018) analyzed the use of constructive and offensive humor in advertisements and concluded that while offensive humor negatively affects the relationship between the brand and the customers, constructive humor proved to have a general positive effect.

The second relevant distinction regards the opposition between simple and complex

humor (Spielmann, 2014). Simple humor leads to customers' more positive attitudes towards both the brand and the advertisement compared to complex humor (Spielmann, 2014). In fact, simple humor can be easily understood by people from all educational backgrounds and at a low level of cognitive involvement, whereas complex humor requires familiarity with the context and certain references of the joke, and a higher cognitive level of involvement (Spielmann, 2014). Complex humor is more difficult to understand, therefore, simple humor is recommended in order to elicit positive customers' attitudes (Spielmann, 2014).

Humor has been largely employed in the context of social media marketing. Multiple studies have supported the positive relationship between the use of humor on brand-generated social media posts and their number of likes and comments (Malhotra et al., 2013; Lee et al., 2018). At the beginning of this paper, encouraging customers' engagement was introduced as one of the goals of social media marketers (Pansari & Kumar, 2017). Consistently with that reasoning, Lee et al. (2018) showed that including humor in the brand-generated content proved to be not only a successful means of increasing customers' engagement in terms of number of likes and comments, but also a key aspect to the creation of a long-term relationship.

By means of an online survey that will be introduced in the next section, the humor appreciation scores of 241 Instagram posts from Shanty Biscuits were measured. The scores were used in the second part of the main analysis to check whether there is a relationship between the level of humor appreciation and the number of likes and comments. On the basis of the literature presented above, the following is expected:

H3: There is a positive relationship between humor appreciation of brand generated Instagram content and the number of likes on humorous posts, such that higher scores of humor appreciation lead to more likes than lower scores.

H4: There is a positive relationship between humor appreciation of brand generated Instagram content and the number of comments under humorous posts, such that higher scores of humor appreciation lead to more comments than lower scores.

Conceptual model

As displayed in the conceptual model in Figure 2, the present study considers social presence and humor appreciation as the independent variables and customers' engagement as the dependent variable. In order to measure engagement, the present research was based on the behavioral dimension of interaction proposed by So et al. (2014) and on the content analysis conducted by Bakhshi et al. (2014) who measured consumers' behavioral engagement by means of number of likes and comments of the analyzed posts.

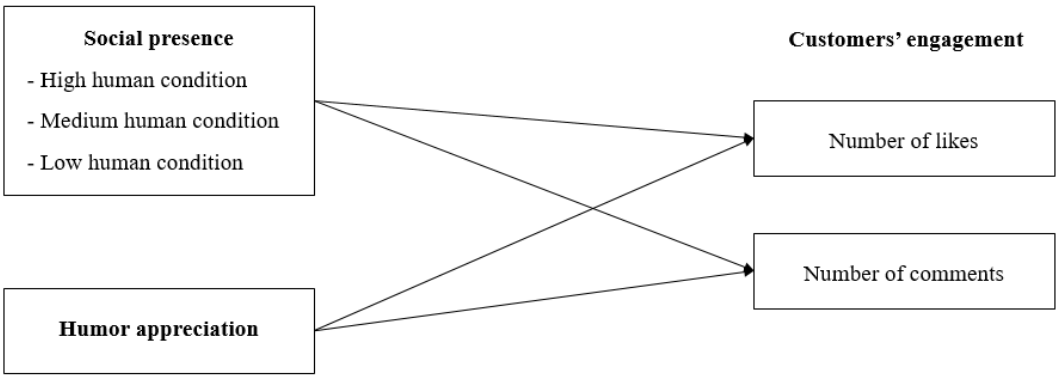

Figure 2. *Conceptual model*

Method

General description of the study

In order to analyze the relationship between social presence and customers' engagement and humor appreciation and customer's engagement, a case study of an Instagram brand-page was conducted. In order to do so, a content analysis of the brand's Instagram feed and an online survey among 80 French speaking participants were conducted. Although a content analysis does not allow to infer causal relationships between the analyzed variables, it was selected as it gives the opportunity to explore actual human behavior and guarantees higher ecological validity compared to experimental studies (Treadwell, 2017). Performing a content analysis presents some challenges, such as dealing with the control of noise in data and the isolation of the variables in such a noisy context. Therefore, the remainder of this section will focus on explaining carefully the set-up of the study and the measures that were adopted in order to deal with the variation of real-world data.

The analysis will focus on the Instagram page of Shanty Biscuits, a French cookie company which offers customers the opportunity to purchase cookies of nine possible flavors and customize them with quotes or text of any kind. Since the data from the brand that was used for the study was publicly available on Instagram, no consent was officially needed as by using Instagram the brand already agreed to its privacy terms and conditions.

Brand selection.

The reasons for choosing this brand are both marketing-related and scientific arguments. In terms of marketing, the brand was selected because it was mentioned on the Instagram Business Blog (https://business.instagram.com/) for being an example for small- and medium-sized companies for having reached their business success mainly through Instagram. From a scientific point of view, the Shanty Biscuits Instagram page offers advantages in terms of the study set up by presenting a relatively controlled feed. As already mentioned before, Shanty Biscuits offers nine different flavors of cookies that can be customized with any type of text. Since this is the only product they offer, all the Instagram posts show always the same product in a similar background differing in terms of text personalization only as it can be seen in Figure 3.

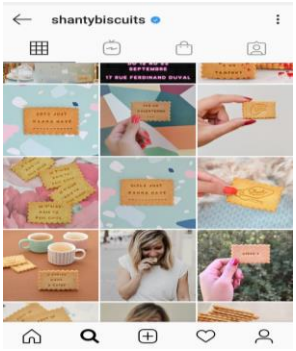

Figure 3. Overview of Shanty Biscuits' Instagram feed

Data preparation.

The brand-generated posts present some degree of variation due to two main factors: the theme of the text on the cookies and the level of social presence displayed in the picture. Therefore, prior to the main analysis, an initial investigation to determine important aspects of the posts and understand the most important variables involved was required.

A first step of the analysis regarded the identification of textual features on the basis of which the text of the cookies was categorized into thematic groups. Subsequently, the posts were analyzed again and categorized into three different groups related to the three identified levels of social presence in order to finalize the dataset for the analysis.

Data collection.

Data from the Shanty Biscuits Instagram page were retrieved on November 6, 2019 through InstaLooter[1]. The tool collected the caption of the posts, the number of likes and comments, the date of publication, the number of seconds elapsed since January 1, 1970 on the basis of which the number of days since the post was public was calculated, the image URLs, the post URLs and the post id. The level of social presence and the theme of the text were coded manually. At the moment of the data collection the page had a total of 2033 posts. In order to be sure that the posts had enough time to accumulate likes, only the ones published before September 30, 2019 were included in the analysis, therefore 23 posts were excluded. At this

[1] Documentation for Instalooter can be found at: https://instalooter.readthedocs.io/en/latest/

stage, the total sample consisted of 2010 posts published on the Shanty Biscuits Instagram page between October 10, 2013 and September 30, 2019.

Ethics.

In order to collect data for the content analysis, no consent was needed. With regards to the company's data, in the process of the data collection, it has been taken into account that even though the images are public and they can be used for research, they are property of the analyzed company. In fact, the images were stored only during the process of the research. After analyzing the data, only the URLs were retained in order to respect the possible decision of the company to delete a post at any time or for any reason. Moreover, the people depicted in the pictures had already given consent to be shared on the feed of the company. Therefore, no consent was needed with regard to that data. With regards to user data, the study was based on aggregate data. Therefore, the nature of the collected input guaranteed complete anonymity not allowing to trace back the person who liked or commented the post. Lastly, with regards to the online survey, at the beginning of the study, participants were asked for their informed consent and all their responses were kept anonymous.

Content analysis

As mentioned earlier, the content analysis was made in two steps. Firstly, the posts were categorized on the basis of textual characteristics of the cookies in order to group them in themes. The analysis resulted in the categorization of six themes, of which the one including humorous text (n = 271) underwent a further selection, and one group of posts not displaying the

product (*n*= 231). Some pictures were posted multiple times, in that case for the humorous text category, the subsequent re-posts (*n*= 30) were excluded from the final sample and only the oldest post was included. Therefore, at this stage of the analysis, 241 posts were part of the humorous text group. Furthermore, six posts of the feed were excluded as they were slideshows. Secondly, all the posts of the final sample (*N*= 1974) were further analyzed in terms of social presence, in order to categorize each post in one of the three possible levels of human presence. At the end of this step, 183 posts were part of the high human presence condition, 403 of the medium and 1388 of the low.

Themes.

The analysis of the textual features of the cookies showed the presence of six themes, namely (1) humorous text, (2) emotional events of life, (3) love, (4) no text, (5) explicit content, and (6)other.

The humorous text theme consisted of posts in which the cookies displayed content generating feelings of amusement and/or potentially generating laughter or smile (Chapman & Chapman, 1974). More precisely the cookies of this category show funny quotes from movies, puns, sarcastic or silly statements, everyday problems or mocking references. An example of that category is displayed in Figure 4. This group represented the condition with the highest number of posts (*n*= 271) and with the most controlled variation. The theme regarding emotional events of life included cookies that customers purchased to celebrate important events such as weddings, proposals, pregnancies, baby gender revelations, or round-numbers birthdays and anniversaries, an example of that category is displayed in Figure 5. This group represented a considerable part of the Instagram feed (*n*=211), however given the high variation displayed

within the category, it was argued that it was not suitable for the analysis. The 'love' theme (*n*= 191) included text displaying any kind of love declaration such as quotes from love songs, or affectionate statements dedicated to partners, friends or family members. An example is displayed in Figure 6. The category 'no text' (*n*= 161) included cookies which either had logos or symbols rather than text, or whose text was not readable. An example is provided in Figure 7. The theme related to explicit content included sexual references (Figure 8) and represented a smaller part of the feed (*n*= 55). Finally, the 'other' (*n*= 884) category included posts which did not have clear themes or were related to various topics such as external collaborations and partnerships, backstage moments of the company, special offers and discounts or other types of text that did not fit in any of the categories above as in Figure 9. A summary of the number of posts per theme can be seen in Table 1.

Table 1

Distribution of the Instagram posts of Shanty Biscuits among the six identified themes

	Frequency
Humorous	271 (241)
Emotional events of life	211
Love	191
No text	161
Explicit content	55
Other	884

The humorous text theme was chosen over the other themes for the main analysis for three main reasons. First, it was present more frequently among the posts and thereby offered a larger sample to analyze. Second, in line with literature pointing out the effect of entertainment on consumers' engagement with hedonic brands (Johar & Sirgy, 1991; Naylor et al., 2008), it was expected that given the entertaining value of humorous content, this group would have offered more valuable elements of analysis compared to the other categories. Third, as already mentioned in the theoretical framework, since humor represents a factor enhancing the emotional component of engagement (So et al., 2014), including it in the analysis contributed to include all the engagement components in the study (together with social presence representing the cognitive component of engagement and likes and comments, representing the behavioral component).

Figure 4. Humorous text

Figure 5. Emotional events of life

Figure 6. Love

Figure 7. No text

Figure 8. Explicit content

Figure 9. Other

Table 2.

Translation of text in Figures 4-9

Humorous text. Translated text: Mum, I love you even though I blocked you on Facebook.
Emotional event of life. Translated text: You are going to be a father.
Love. Original text: Cause all of me loves all of you.
Explicit content. Translated text: Never the first night.
Other. Translated text: For you +30%! Happy Black Friday.

Social presence.

Since the present study focused on the analysis of visual content, social presence was operationalized as the degree to which actual humans appeared in the pictures posted by the brand. Three levels of human presence were taken into account as proposed in the study by Cyr et al. (2009). In their study, the authors distinguished between high, medium and low human condition and the same operationalization was applied to the present content analysis. Therefore,

in the current dataset, the high human condition consisted of pictures in which the product appeared in the foreground and human facial features appeared entirely, partly or blurred in the background. The medium human condition consisted mainly of pictures in which a hand holding the product was displayed. Finally, the low human condition consisted of pictures in which only the product appeared without any human image. Examples of these conditions are displayed in Figure 1.

Customer's engagement

In the current study customers' engagement was measured through the number of likes and comments of each post. In the context of a content analysis, they represent natural values and are therefore more transparent to interpret. The number of likes can indicate the degree to which customers evaluate brand-generated content as interesting and approve it, whereas the number of comments gives insights into the amount of discussion that the content generated (Bakhshi et al., 2014; Jaakonmäki, Müller & vom Brocke, 2017). Therefore, they provide relevant pieces of information about customers' engagement with brand-generated content.

Survey study

In order to measure how people appreciated the humorous content on the cookies, an online survey was conducted.

Participants.

A total number of 95 participants took part in an online survey where they were presented 30 or 31 posts randomly selected among the humorous text group posts from Shanty Biscuits' Instagram page and were asked to rate their humor appreciation for each of them. Since the text on the cookies was mostly in French, one of the main requirements for participation was that participants would speak French on a proficient level. Therefore, they were recruited through snowball sampling via Facebook groups of university students majoring in French language, personal connections of the researcher via social media such as Facebook, Instagram and LinkedIn, and Survey Circle, a community for online research where people can post their surveys in order to find participants. Of the responses of non-native speakers, only the responses of participants who judged their language proficiency level being at least B1 were included in the analysis. In fact, B1 is the level from which learners of foreign languages are able to recognize different expressions of emotions (or reactions) and are able to "enter unprepared into conversation" on everyday life topics (CEFR self- assessment grid). Therefore, they have the necessary linguistic, pragmatic and sociolinguistic knowledge that is required to understand humor (Shively, 2013). Consequently, 11 participants were excluded for indicating a level of French below B1. Furthermore, four more responses were excluded as participants did not give their consent. The final number of participants was therefore 80.

Procedure.

Participants accessed the Qualtrics via a link or a QR code and were able to complete it online through their mobile devices or their computers. First, they were briefly introduced to the

study and asked to give their informed consent. Second, they were asked demographic questions related to age, gender, nationality, their highest educational level acquired and the way they learned French, here differentiating between native and non-native speakers. In addition, non-native speakers were asked to indicate their current level of French proficiency on the basis of the CEFR levels. The participants were provided with six simple statements describing each CEFR level and were asked to choose the one which best represented their situation. An example statement was 'B2 - I can read articles and reports concerned with contemporary problems in which the writers adopt particular attitudes or viewpoints'. Third, each participant was shown the stimuli including 30 or 31 original posts from the Shanty Biscuits Instagram page and was asked to report the humor appreciation of each of them ranking three statements on the basis of a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. An example item was 'I found it funny'. The scores for each item were later averaged to obtain a general humor score, which captures humor on the basis of different aspects of the funniness construct. The items developed to measure humor appreciation were created on the basis of an existing item adapted from Binsted, Pain and Ritchie (1997) and two items created on the basis of the study from Chapman and Chapman (1974) where they stated that laughter and smiling are signs of humor appreciation. Table 3 provides an overview of the items contributing to the humor scale development. Participants were randomly assigned to one of eight possible lists, each consisting of 30 or 31 posts retrieved from Shanty Biscuits' Instagram page displaying cookies with humorous text. The order of the stimuli per list was randomized for every participant in order to avoid the study results to be biased through repeated testing. After the evaluation of the posts, participants had the option to leave a comment and after that the survey was complete and

participants were debriefed and thanked for their participation in the study. A complete overview of the survey can be found in the appendix at the end of the document (Appendix A), whereas the overview of participants comments can be found in Appendix B.

Table 3

Overview of the humor scale development

Item	Source
'I found it funny'	Item adapted from Binsted, Pain and Ritchie (1997)
'It made me laugh'	Item developed based on Chapman and Chapman (1974)
'It made me smile'	Item developed based on Chapman and Chapman (1974)

Control variables

In the main study it was decided to control for two variables: time and theme of the cookies. Time is intended as the number of days since the post had been published. Checking for time allowed to control for the possible bias due to the different amount of time a post would have had to gather likes and comments compared to another. Controlling for the theme of the cookies helped cleaning the data and excluding elements that were not part of the model and that might have also played a role in fostering customers' engagement with the posts. Therefore, focusing on a single theme made the data more homogeneous and comparable.

With regards to humor, past research focused on the subjective characteristics of people influencing their judgement. Among the factors, it was pointed out that gender, ethnic group and age played a role when it comes to humor appreciation (Weinberger & Gulas, 1992). Therefore,

in the online survey it was decided to use the collected demographic data in order to explore whether these elements also played a role in the evaluation of humor.

Results

Content analysis

Social presence

The content analysis of the final humorous sample (N= 241), showed a predominance of the low human condition with 137 posts, followed by the medium human condition with 74 posts and the high human condition with 30. Generally, it was preferred to show the cookie with the humorous text alone on some neutral background or on some background supporting the content of the text. Alternatively, the cookies were displayed while being held by a hand, generally the hand of the owner of the company. Finally, in fewer cases the cookies were displayed together with facial features. Table 4 shows the mean number of likes and comments for each level of social presence in the humorous sample. Even though the standard deviation is high, it can be already observed that the means of the number of likes go in the expected direction, with high social presence posts collecting the most likes and low social presence the least number of likes. However, the means of the number of comments do not follow the expected pattern, with medium social presence post displaying the most comments, followed by high and low social presence posts.

Table 4

Mean number of likes and comments across the social presence conditions

	Number of likes	Number of comments
Social presence	*M* (*SD*)	*M* (*SD*)
High	1224.97 (506.28)	57.80 (38.10)
Medium	1131.12 (662.66)	63.74 (93.02)
Low	1103.07 (849.62)	55.95 (69.16)

Main analysis of social presence

Two one-way ANOVA analyses were performed in order to test whether the level of social presence has a positive effect on customers' engagement with a brand-generated humorous post (Hypotheses 1 and 2).

Likes.

The count of likes was based on the number of likes under each post retrieved from the Shanty Biscuits Instagram feed (M = 1126.86, SD = 758.37). In order to test whether social presence has an effect on the number of likes a humorous post can receive (H1), a one-way ANOVA with social presence as the independent variable and number of likes as the dependent variable was performed. The data was not normally distributed as the z-scores for the low social presence posts showed a light kurtosis (z-score = 4.47). Since Levene's test was significant, the Welch robust test of equality of means was reported. Welch statistics was not significant, $F(2, 95.40) = 0.55$, $p = .577$, therefore the assumption of homogeneity was met. Since the assumption

of normality was not met, bootstrap was performed. The overall ANOVA was not significant ($F(2, 240) = 0.32$, $p = .577$, BCa 95% CI[1030.63, 1223.09]) indicating that, contrary to the expectations, there is no difference in the number of likes per post depending on the level of social presence displayed. The data showed no support for the hypothesis that high levels of social presence ($M = 1224.97$, $SD = 506.28$) lead to more likes than medium ($M = 1131.12$, $SD = 662.66$) or low levels of social presence ($M = 1103.07$, $SD = 849.62$) and that medium levels of social presence lead to more likes than low levels, therefore Hypothesis 1 was not supported.

Comments.

The count of comments was based on the number of comments under each post retrieved from the Shanty Biscuits Instagram feed ($M = 58.57$, $SD = 74.36$). In order to test whether social presence has an effect on the number of comments under a humorous post (H2), a one-way ANOVA with social presence as the independent variable and number of comments as the dependent variable was performed. The data was not normally distributed as the z-scores showed some light to severe skewness and kurtosis in all the conditions. The low and medium social presence posts showed a severe skewness ($z\text{-score}_{low} = 16.23$, $z\text{-score}_{medium} = 21.02$) and kurtosis ($z\text{-score}_{low} = 40.53$, $z\text{-score}_{medium} = 77.34$), whereas the high social presence posts showed some light skewness (z-score= 2.03). Levene's test was not significant, $F(2, 238) = 0.83$, $p = .439$, therefore the assumption of homogeneity was met. Since the assumption of normality was not met, the bootstrap was performed. The overall ANOVA was not significant ($F(2, 240) = 0.26$, $p = .768$, BCa 95% CI[49.14, 68.01]), therefore no support was found for Hypothesis 2. There was no significant difference in the number of comments underneath each humorous post depending

on the level of social presence displayed. High levels of social presence (M = 57.80, SD = 38.10) did not lead to more comments than medium (M = 63.74, SD = 93.02) or low levels of social presence (M = 55.95, SD = 69.16) and medium levels of social presence did not lead to more comments that low levels.

Control variable - Effect of time.

In order to test whether the amount of time that has passed since the post was published plays a role in the relationship between social presence and number of likes of a humorous post, an ANCOVA was performed. With regards to the assumption of independence of the covariate and the independent variable, it can be argued that in this case the two are independent, since the level of social presence displayed in the posts is dependent on an arbitrary choice of the brand at the moment of the publication, rather than dependent on time. However, since the interaction effect between social presence and the number of days since the publication of the post on the number of likes was significant, the assumption of homogeneity of regression slopes was not met, $F(2, 235) = 3.40$, $p = .035$, therefore the results of the analysis should be interpreted with caution.

The analysis showed that the covariate number of days since the post was published was significantly related to the number of likes $F(1, 237) = 164.21$, $p < .001$, r=.64. However, after controlling for the effect of time, there was still no significant effect of social presence on the number of likes that a humorous post received $F(2, 237) = 0.90$, $p = .408$.

With regards to the number of comments, the interaction effect between the level of social presence and the number of days since the post was published was not significant,

$F(2.235)= 0.73$, $p= .481$, therefore the assumption of homogeneity of regression slopes was met. The analysis showed that the covariate number of days since the post was published was significantly related to the number of comments $F(1, 237) = 25.64$, $p < .001$, $r = .31$. However, after controlling for the effect of time, there was still no significant effect of social presence on the number of comments under a humorous post $F(2, 237) = 0.46$, $p = .632$.

Survey study

Participants.

A total of 80 participants with an average age of 25.80 (SD = 5.87) years took part in the online survey. The sample consisted of 65 females, 14 males and one non-binary participant of 16 different nationalities. Most of the participants were Italian (n = 31), followed by French (n = 23), German (n = 9), Swiss (n = 3) and Belgian and Haitian (n = 2). The remaining ten participants were from Angola, Austria, Canada, Cyprus, Czech Republic, Guinea, Morocco, the Netherlands, Russia and the USA. Lastly, 33 participants were native speakers of French, whereas 47 stated that they studied it either at school, at university, at a private language school or after moving to France and self-assessed their level of French as B1 or higher. A complete overview of the sample can be found in Table 5.

Table 5

Overview of the sample of the survey

		Number of participants		Number of participants
Gender	Male	14		
	Female	65		
	Non-binary	1		
French Level	Native	33		
	Non-native	47	B1	22
			B2	16
			C1	6
			C2	3
Nationality	Italian	31		
	French	23		
	German	9		
	Swiss	3		
	Belgian	2		
	Haitian	2		
	American	1		
	Angolan	1		
	Austrian	1		
	Canadian	1		
	Cyprus	1		
	Czech	1		
	Dutch	1		
	Guinean	1		
	Moroccan	1		
	Russian	1		

Results of the survey.

Each participant evaluated their humor appreciation of 30 or 31 posts depending on the list they were assigned to. The humor appreciation scale was computed on the basis of three items evaluated on a 5-points Likert scale, namely 'I found it funny', 'It made me laugh', 'It made me smile', for each of the post. The scores for each of the items were averaged and then the general humor score was computed on the basis of the mean in order to have an average

humor score for each of the posts. The Cronbach's α was then calculated and showed that the scale was reliable with a score of .95.

The results of the survey showed that on average people perceived the posts as moderately humorous (M = 3.31, SD = 0.58). The funniness scores did not present scores for which it could have been concluded that some posts were totally funny or totally unfunny. In fact, the minimum and maximum score for each post showed that there has often been some kind of variation across participants' judgements. There was never a total agreement on extremely low or extremely high funniness scores, except for two posts that were found overall funnier compared to the others, showing that all the posts of this dataset were correctly categorized as funny.

Main analysis of humor appreciation scores

In order to test the relationship between humor appreciation scores and customers' engagement with a brand-generated humorous post, two correlation analyses were performed.

Likes.

The descriptives show that the average number of likes per post was 1126.86 (SD = 758.37) and that on average people perceived humor at a moderate level (M = 3.31, SD = 0.36). In order to test whether there is a positive relationship between people's humor appreciation and the number of likes on a humorous post (H3), a correlation with humor appreciation score as the independent and number of likes as dependent variable was performed. The number of likes was not normally distributed ($z\text{-score}_{skewness,} = 4.66$, $z\text{-score}_{kurtosis} = 2.28$), therefore the bootstrapped

95% confidence intervals were reported. The analysis showed a significant relationship between people's humor appreciation scores and the number of likes of the posts, $r = .15$, $p = .025$, with 2.25% of the variance in the number of likes accounted for by people's humor appreciation of the content. The bootstrapped 95% CI [0.03, 0.26] do not cross zero, but they are very close. Therefore, even though the result of the analysis provides support for the hypothesis that there is a positive relationship between people's humor appreciation and the number of likes that a humorous post receives, the effect should be interpreted with a bit of caution.

Comments.

On average people left 756 ($SD = 58.57$) comments under each post and, as already reported in the previous section, perceived humor at a moderate level ($M = 3.31$, $SD = 0.36$). The number of comments was not normally distributed ($z\text{-score}_{skewness,} = 31.89$, $z\text{-score}_{kurtosis} = 122.38$), therefore, the bootstrapped 95% confidence intervals were reported. The analysis showed that there is no significant relationship between people's humor appreciation scores and the number of comments under each humorous post, $r = .06$, $p = .386$, which is confirmed also by the bootstrapped 95% CI [- 0.13, 0.21] crossing zero. Therefore, it can be concluded that there is no genuine effect between the two variables. The result of the analysis provides no support for the hypothesis that there is a positive relationship between people's humor appreciation and the number of comments underneath a humorous post, therefore Hypothesis 4 cannot be supported.

Control variables – Gender and language proficiency.

In order to check whether gender and language proficiency (native vs non-native speaker) played a role in participants' humor appreciation, a factorial ANOVA with gender and language proficiency as independent and the humor appreciation scores as the dependent variable was conducted. As already stated before, the scale of humor appreciation showed a good reliability (α= .95), therefore the data were ready to be used in the analysis.

The humor appreciation scores were not normally distributed as there was some light skewness for female (z-score = -2.00) and for non-native speakers (z-score = -2.42). Because the skewness and kurtosis were not severe and the ANOVA is fairly robust against the violation of the assumption of normality, this should not bias the results of the analysis very much. The assumption of homogeneity of variances was met, as Levene's test of equality of error variances was not significant ($F(7, 72) = 1.32$, $p = .252$).

The ANOVA showed no significant main effect of gender, $F(2, 72) = 0.164$, $p = .849$, $\eta_{partial}^2 = .01$. Women ($M = 3.30$, $SD = 0.59$) perceive humor the same way men ($M = 3.32$, $SD = 0.58$). Since there was just one non-binary participant, it was not possible to draw any conclusion about participants identifying as such. Furthermore, there was no main effect of language proficiency, $F(1, 72) = 0.18$, $p = .672$, $\eta_{partial}^2 = .003$. Native speakers ($M = 3.20$, $SD = 0.47$) perceived humor the same way non-native speakers ($M = 3.38$, $SD = 0.64$) do. Finally, there was no significant interaction effect between gender and language proficiency, $F(1, 72) = 1.02$, $p = .895$, $\eta_{partial}^2 = .00$. Therefore, it can be argued that at a general level gender and language proficiency factors do not influence the extent to which people perceive humorous content. It should be noted that there might still be some specific posts whose content elicited different

reactions between males and females or some whose understanding required a higher language proficiency than others. However, it can be argued that here they did not affect the general level of participants' humor appreciation and therefore the effect of the two above mentioned factors can be ignored in the context of the present analysis.

Exploratory analyses

In order to gain insights about the effect of social presence on the overall Shanty Biscuits' feed, it was decided to analyze it on a larger scale. In order to do so, a factorial ANOVA with social presence and type of theme as independent and number of likes and comments as dependent variables was conducted based on a sample including all the posts displaying the product of Shanty Biscuits' Instagram feed published between October 10, 2013 and September 30, 2019, and not including the slideshows and the posts not displaying the product (N=1743).

Effect of social presence and themes on likes.

The number of likes was not normally distributed as there was severe kurtosis (z-scores ranging between 10.10 and 216.36) and skewness (z-scores ranging between 7.08 and 45.32) for all levels of social presence and light to severe kurtosis (z-scores ranging between 2.28 and 354.05) and skewness (4.66 and 66.10) for all different types of themes except for the ones displaying explicit content. A complete overview of the z-scores can be found in Appendix C. The assumption of homogeneity of variances was not met, as Levene's test of equality of error variances was significant ($F(17, 1725) = 8.70$, $p < .001$). Therefore, even though the ANOVA is

fairly robust against the violation of these assumptions, the results should be interpreted with caution.

The ANOVA showed a significant main effect of social presence, $F(2, 1725) = 17.56$, $p < .001$, $\eta_{partial}^2 = .02$. High levels of social presence ($M = 1145.38$, $SD = 901.850$) lead to more likes than low levels of social presence ($M = 457.21$, $SD = 668.57$), $p < .001$, and more likes than medium levels of social presence ($M = 892.48$, $SD = 1157.55$), $p < .001$. However, the difference between the number of likes of the posts with medium ($M = 892.48$, $SD = 1157.55$) and low levels of social presence ($M = 457.21$, $SD = 668.57$) is not statistically significant, $p = .091$. Therefore, the expected effect of social presence was partially supported. Furthermore, there was a main effect of type of theme, $F(5, 1725) = 14.68$, $p < .001$, $\eta_{partial}^2 = .04$. An overview of the relevant main effects of themes on likes can be found in Table 6.

Table 6

Main effect of type of theme on number of likes of the post

	M (*SD*)	Humorous posts	Emotional events of life	Love	No text	Explicit content	Other
Humorous posts	1126.86 (758.37)		.000*	.000*	.000*	.976	.000*
Emotional events of life	298.48 (577.06)			.931	.023*	.010*	.031*
Love	323.16 (572.26)				.012*	.010*	.024*
No text	329.40 (535.24)					.000*	.000*
Explicit content	1033.02 (748.81)						.115
Other	605.81 (944.70)						

* $p < .05$.

Finally, there was a significant interaction effect between social presence and theme $F(10,1725) = 6.08$, $p < .001$, $\eta_{partial}^2 = .03$. The results of the simple effect analysis showed that there was a significant difference between the levels of social presence for posts related to emotional events of life, F (2,1725) = 8.44, $p < .001$, posts related to love F (2,1725) = 10.22, $p < .001$, and for posts of the category 'other', F (2,1725) = 70.93, $p < .001$. However, there was no significant difference between the levels of social presence for posts displaying humorous text, F (2,1725) = 0.31, $p = .734$, posts not displaying any text, F (2,1725) = 0.92, $p = .400$ and posts displaying explicit content, F (2,1725) = 0.69, $p = .502$. Table 7 provides a summary of the simple effect analysis of the interaction effect between the single themes and the levels of social presence.

Table 7

Summary of simple effect analysis of the interaction between social presence levels and themes

Theme	Social presence	*M*	*SD*	Social presence	*p*
Emotional	High	1037.56	842.21	Medium	.003*
events of life				Low	.000*
	Medium	393.33	579.89	Low	.380
	Low	279.30	513.69		
Love	High	1374.70	933.02	Medium	.000*
				Low	.000*
	Medium	362.55	501.42	Low	.365
	Low	237.40	481.26		
Other	High	1202.58	1047.27	Medium	.113
				Low	.000*

Medium	1035.16	1418.89	Low	.000*
Low	417.33	606.11		

* $p < .05$.

It can be concluded that within some of the different themes identified among the Shanty Biscuits Instagram feed where the interaction effect between social presence and themes was significant, the effect of social presence is in most cases consistent with expectations. In fact, high levels of social presence lead to significantly more likes than medium and low levels of social presence except for the category 'other' in which the difference between the number of likes of the high and medium social presence condition is not significant ($p = .113$). However, the expectation that medium levels of social presence would lead to significantly more likes than low level of social presence was not consistent with the results of the analysis except for the category 'other' ($p < .001$).

Effect of social presence and themes on comments.

The number of comments was not normally distributed as there was severe kurtosis (z-scores ranging between 27.82 and 735.64) and skewness (z-scores ranging between 15.66 and 101.38) for all levels of social presence and light to severe kurtosis (z-scores ranging between 44.28 and 2311.82) and skewness (z-scores ranging between 2.86 and 216.80) for all different types of themes except for the ones displaying explicit content which shows deviant kurtosis, but not skewness. A complete overview of the z-scores can be found in Appendix C. Levene's test of equality of error variances was significant ($F(17, 1725) = 4.80$, $p < .001$), therefore the assumption of homogeneity was not met. Even though the ANOVA is fairly robust against the

violation of the assumptions of normality and homogeneity, the results should be interpreted with caution.

The ANOVA showed no significant main effect of social presence on the number of comments under a post, $F(2, 1725) = 0.44$, $p = .643$. There was no statistically significant difference between the number of comments of the posts with high ($M = 65.72$, $SD = 95.16$), medium ($M = 86.59$, $SD = 441.34$) or low levels of social presence ($M = 30.09$, $SD = 83.71$). Furthermore, no main effect of type of theme on number of comments $F(2, 1725) = 1.94$, $p = .085$ was found either. There was no difference between the number of likes of posts displaying humorous content ($M = 58.57$, $SD = 74.36$), emotional events of life ($M = 12.24$, $SD = 26.48$), content related to love ($M = 12.81$, $SD = 22.74$), not displaying any text ($M = 42.91$, $SD = 103.99$), showing explicit content ($M = 53.49$, $SD = 51.32$) or belonging to the category 'other' ($M = 55.87$, $SD = 298.23$). Lastly, the analysis showed no significant interaction effect between social presence and type of theme on the number of comments under each post $F(10, 1725) = 1.53$, $p = .124$.

It can be concluded that, consistent with the results of the main analysis, also for other themes identified among the Shanty Biscuits Instagram feed, the effect of social presence on the number of comments is not consistent with the expectation that higher levels of social presence would lead to a higher number of comments.

Summary of findings

Table 8 provides an overview of the results of the present study. As it can be seen, the results provided support for Hypothesis 3 only. Since there was partial support for the

expectations related to the number of likes, but no support for the expectations related to the number of comments, the question of whether there is a difference between likes and comments that can explain that rises. Therefore, this possible difference will be discussed more extensively in the next section.

Table 8

Summary of findings

H1. Social presence in humorous brand-generated Instagram posts has a positive effect on the number of likes, such that (a) posts displaying the product and human facial features (high human condition) generate a higher number of likes compared to posts displaying the product and human features other than the face (medium human condition) and the product only (low human condition) and (b) posts displaying the product and human features other than the face (medium human condition) generate a higher number of likes compared to posts displaying the product only (low human condition).	Not supported
H2. Social presence in humorous brand-generated Instagram posts has a positive effect on the number of comments, such that (a) posts displaying the product and human facial features (high human condition) generate a higher number of comments compared to posts displaying the product and human features other than the face (medium human condition) and the product only (low human condition) and (b) posts displaying the product and human features other than the face (medium human condition) generate a higher number of comments compared to posts displaying the product only (low human condition).	Not supported
H3. There is a positive relationship between humor appreciation of brand generated Instagram content and the number of likes on humorous posts, such that higher scores of humor appreciation lead to more likes than lower scores.	Supported

H4. There is a positive relationship between humor appreciation of brand generated Instagram content and the number of comments under humorous posts, such that higher scores of humor appreciation lead to more comments than lower scores.	Not supported

Discussion

The purpose of the present research was to investigate the relationship between social presence, humor and customers' engagement with visual brand-generated content on Instagram on the basis of real-world data. The study was based on a case study of the Instagram feed of Shanty Biscuits, a French cookie company which used Instagram as a driver for its business.

In line with previous research defining different levels of social presence (Cyr et al., 2009) and analyzing the effect of human faces on people's engagement with visual content (Bakhshi et al., 2014), it was expected that higher levels of social presence would lead to higher levels of customers' engagement with brand-generated Instagram posts. Furthermore, humor was another factor that was expected to play an important role on customers' engagement, as previous studies reported a significant effect of the use of humor in advertisements in terms of numbers of likes especially (Weinberger & Gulas, 1992). Based on previous literature about humor, demographic factors were expected to play a role in humor appreciation (Weinberger & Gulas, 1992; Martin, 2003; Styśko-Kunkowska & Borecka, 2010), therefore, by means of an online survey, people's appreciation of the humor of the posts was measured and its relationship with factors such as gender and language proficiency was analyzed.

The data retrieved from a content analysis of the visual content of the Instagram posts of Shanty Biscuits and an online survey among 80 French speaking participants were used to test the four proposed hypotheses and to run some exploratory analyses. In the following section, a

presentation of the interpretation of findings, possible limitations of the present research and suggestions for future research will be provided.

Discussion of findings and alternative explanations

Discussion of hypotheses 1 and 2.

From a scientific point of view, one of the main drivers for the present research was the predominance of experimental designs against the analysis of real-world data (Cyr et al, 2009; Droulers & Adil, 2015) and the mainly coarse-grained nature of some of the content analyses (Bakhshi et al., 2014) in the field of social presence. Therefore, to have a more fine-grained approach and reduce the noise it was decided to define clear content categories and then to focus on the humorous one for the main analysis and subsequently to include all of them in the exploratory part.

The content analysis, besides serving the purpose of creating the dataset for the main analysis, provided insights into Shanty Biscuits' use of social presence displaying an uneven distribution of posts among the possible social presence levels. In fact, overall, the brand strongly preferred low social presence posts (n = 1231), followed by medium (n = 369) and high (n = 143), with low social presence used about eight times more than high social presence and three times more than medium. The same pattern was also consistent within all the single theme categories, including the humorous one which constituted the dataset of the main analysis.

Based on the attention transfer hypothesis stating that the presence of human images favors memorization of and attention towards the content (Pieters & Wedel, 2004) and on previous studies on the effect of human presence in the advertising context (Cyr et al., 2009), it

was expected that the presence of faces in humorous brand-generated visual content would lead to higher numbers of consumers' likes (Hypothesis 1) and comments (Hypothesis 2) compared to the presence of other parts of the human body or its complete absence. However, the results of the main analysis did not provide support for the patterns expected in Hypothesis 1 and 2.

Table 9 shows the descriptives of humor appreciation scores for each social presence condition. As it can be seen, there is not a big difference in humor appreciation across social presence conditions. Based on that, the researcher would suppose that when people focus on humorous content, they do not pay attention to social presence but focus mainly on humor. This might explain why no main effect of social presence on the number of likes was found for the humorous text category, but a significant effect was found for some other categories in the exploratory analysis. The researcher is aware that such a supposition needs to be further explored in order to check whether there is any support for it, therefore future research might check to what extent participants focus on social presence perception when engaged in humor evaluation, by including such a measurement in a survey.

Table 9

Mean humor appreciation scores across the social presence conditions

Social presence	*M*	*SD*
High	3.28	0.39
Medium	3.30	0.33
Low	3.32	0.37

It is recommended to future research to perform the analysis through a regression model including both social presence and humor appreciation scores in one model in order to estimate the effects of both variables better. Present research had a different approach as applying a regression model to such data required advanced coding that went beyond the researcher's statistical expertise.

The suspect that humor might have a stronger effect of social presence calls for a more fine-grained analysis of the category based on an analysis of humor types. Performing an analysis of the type of humor used in the posts, both from a linguistic and a content-related point of view, was beyond the scope of the present study. However, future studies are also suggested to take into account the possible effect of different humor types on peoples' humor appreciation as a factor impacting engagement. This possibility will be discussed more thoroughly and grounded in literature in the general discussion of the study.

Another possible factor that might have influenced the results of the first part of the main analysis is the uneven distribution of the posts among the social presence levels in combination with the small sample size of the humorous dataset. As mentioned previously, the brand showed a preference for low social presence posts, followed by medium and high. This pattern was consistent also in the humorous group with 137 posts displaying a low level of social presence, 74 displaying a medium level of social presence and 30 posts displaying a high level of social presence. It is argued that, although the data is sufficient to analyze the relationship between the above mentioned factors, the small sample size of the humorous dataset (N = 241) in combination with possible humor characteristics that could be playing a role might have made the results more sensitive to the uneven distribution among social presence levels to the point

that it could have made the results insignificant. Furthermore, considering that in the exploratory analysis which included all six content categories a pattern consistent with the expectations in Hypothesis 1 was found, it can be argued that the bigger sample size (N = 1743) contributed to estimate the effects of social presence based on a greater number of items, which would also explain the significant findings of the exploratory analysis regarding the number of likes.

Another element that might have played a role is the level of brand activity on social media (Bakhshi et al., 2014). Past research pointed out that when an Instagram page is very active, it receives less likes and comments, because if a page publishes more posts more frequently, the audience is less likely to see all the posts that are published (Bakhshi et al., 2014). Therefore, it is suggested that future research might analyze the frequency with which Shanty Biscuits shares posts on Instagram, in order to determine whether this affected the reach of their posts and consequently the number of likes and comments.

Discussion of exploratory analysis.

The two exploratory analyses were conducted in order to analyze the effect of social presence on a larger scale, yet controlled by means of clear theme categories. The first exploratory analysis showed a significant main effect of social presence and type of theme and a significant interaction effect between the two variables on the number of likes. Interestingly, the results showed partial support for the expectations related to social presence stated in Hypothesis 1. In fact, both the result of the main effect of social presence and its interaction with the themes, show an overall consistent pattern of the effect of social presence on the number of likes. Within both the entire Shanty Biscuits feed and the single analyzed themes displayed on the cookies,

high levels of social presence significantly lead to more likes than medium and low levels. However, no significant difference was found between the number of likes of medium and low levels of human presence, except for the category 'other', which however, had the least control of noise, as it includes types of content which differ a lot among each other.

The non-significant difference between the number of likes of medium and low levels of human presence might be interpreted consistent to what Cyr et al. (2009) found in their study. When analyzing the effect of the three levels of social presence on an advertisement's trust perception, they found that even though participants still preferred the medium over the low level of social presence, they found it one the most difficult to process of the three. Participants had longer fixation times for the images of that category and during the interviews they stated that they found them "unnatural" or "distracting" (Cyr et al., 2009, p. 552). These results of previous research may offer an explanation for the partial support of the exploratory analysis of the expectations stated in Hypotheses 1.

The exploratory analysis revealed a significant main effect of themes on the number of likes. Since Shanty Biscuits is operating in the food industry, the product they sell is categorized as hedonic (Naylor et al., 2008). In accordance with Puto and Wells (1984), it is argued that all the themes identified in the content analysis of its feed can be categorized as transformational, as they focus mostly on eliciting emotions related to the experience of the product rather than describing its objective features such as the flavor, the packaging or the weight of the cookies. Therefore, the significant main effect of themes is in line with previous research demonstrating the positive effect of the match between the type of product sold and the type of strategy used (Naylor et al., 2008).

The results of the second exploratory analysis did not reveal any significant effect of social presence on the number of comments. The fact that in the full sample it was possible to find an effect on number of likes but not on number of comments raises the question of what is the difference between these two elements that makes the results differ.

Based on previous literature, it is argued that two possible reasons might explain the results, the first one that will be discussed is related to the level of activity of a brand page (Bakhshi et al., 2014). Based on the reasoning by Bakhshi et al. (2014) presented in the section above, the activity of a brand page was already suggested to have an impact on the non-significant results of the first part of the main analysis. Here, it is argued that brand activity might also explain the difference between the results related to likes and comments in the exploratory part of this study. In fact, Bakhshi et al. (2014) suggested that when a brand shares multiple posts in a relatively short time, the audience is less likely to see them. Assuming that the posts of a highly active brand page would manage to reach their entire audience equally, it is argued that equally engaging with every single item through liking and commenting would be too time consuming for users. In fact, considering that liking a post is quicker and less committing than commenting on it (Antheunis, van Kaam, Liebrecht & van Noort, 2016), it can be said that in such a case brand page activity might affect the number of comments irrespectively of the post characteristics. In conclusion, it is suggested that future research might further explore the effect of brand activity to shed light on the difference between liking and commenting behavior.

Since users can react both to the content of the post and to other comments, the second aspect relevant to discuss is the complexity of the factors that might influence commenting

behavior simultaneously. In fact, past research demonstrated that commenting behavior can be dependent on many factors such as the content characteristics of the post itself, namely the level of interactivity of the post (de Vries et al., 2012), the valence of already existing comments (de Vries et al., 2012) and individual customer's need for information (Shao & Ross, 2015). Specifically, past research suggested that high versus low levels of interactivity of a post (de Vries et al., 2012), positive and negative versus neutral comments (de Vries et al., 2012) and a user's high versus low need for information (Shao & Ross, 2015) positively affect the likelihood of people to comment under a post. It is argued that since in real-world commenting behavior might be the result of a combination of the above mentioned factors, it can be difficult to isolate the effect of the single factors significantly correlating with it. As a consequence, the number of comments becomes a noisy piece of information. Focusing on elements such as comment valence or the analysis of their actual content such as whether users pose further questions about the product or they mention other friends to share the content with them, would provide further insights into people's motivations to comment. Consequently, future studies are suggested to consider a content analysis of the comments in order to have a more thorough insight into commenting behavior.

Discussion of hypotheses 3 and 4.

The second part of the main analysis focused on the relationship between people's humor appreciation scores and customers' engagement. Based on existing research about the effect of humor in advertising showing that an appropriate use of humor has a positive effect on customers' engagement with brand-generated content (Malhotra et al., 2013; Lee et al., 2018)

and with the brand in general (Lee et al., 2018), the expectation was that content which was perceived as more humorous would lead to higher numbers of likes (Hypothesis 3) and comments (Hypothesis 4).

The results provided support for Hypothesis 3. In fact, in line with expectations, the analysis showed that humor appreciation has an effect on the number of likes a post can have as more humorous content led to more likes than less humorous content. However, the results suggest to interpret this effect cautiously, as the effect size is relatively small and the confidence intervals are very close to zero. Therefore, it is suggested to consider the present results as a significant starting point that needs to be further analyzed in future analyses.

In regard to Hypothesis 4, the results provided no support to the expectation that higher levels of humor appreciation would lead to higher numbers of comments. It is proposed that the same factors that were suggested to have played a role in the non-significant results of the exploratory analysis regarding the number of comments might have played a confounding role in the relationship proposed in Hypothesis 4. Therefore, it is argued that commenting behavior should be based on both quantitative and qualitative analysis in order to have a more complete representation of the possible factors favoring it.

Discussion of the effect of the control variables

Consistently with what has been suggested by Fugate (1998), the online survey was conducted to collect data about possible demographic factors influencing humor appreciation. Past research argued that consumers' factors such as age, gender and nationality (Weinberger & Gulas, 1992) or personality traits such as extraversion (Martin, 2003; Styśko-Kunkowska &

Borecka, 2010) would play a role in the appreciation and perception of humor.

It was decided to control for gender and for the difference between native and non-native speakers, but contrary to previous literature (Weinberger & Gulas, 1992), these factors did not seem to play a role in humor appreciation. The non-significant effect of gender might be explained by the fact that most of the participants were women in a rather small sample. In order to explain the non-significant difference between natives and non-natives, future research might take into account the type of humor used by Shanty Biscuits distinguishing between simple and complex humor. At first glance, it can be argued that the kind of humor chosen by the brand is overall very simple or not requiring particular cultural-specific knowledge, explaining the results in line with previous findings which showed that simple humor requires lower cognitive involvement (Spielmann, 1994). However, a more in depth analysis of the type of humor displayed in the posts is needed in order to determine whether this is the case.

The age of the participants of the online survey ranged between 18 and 49. Therefore, consistent with past research stating that for adults older than 19 years the effect of age on humor appreciation becomes insignificant (Weinberger & Gulas, 1992), age was not taken into account. Contrary to the initial plan, the present analysis could not take nationality into account. In fact, the variation within the sample was so high that for the majority of the nationalities there was one representative only, therefore not allowing to perform significant statistical analysis. In line with past research pointing out the effect of nationality on humor appreciation (Weinberger & Gulas, 1992), it is argued that from a managerial point of view it might be relevant to be aware of possible nationality or even culture-specific factors influencing humor appreciation and it is

suggested to take this factor into account in future studies in order to provide evidence of its potential role.

General remarks about limitations and future research

The analysis of the factors influencing customers' engagement is very complex. Therefore, based on the idea of complementarity of the two approaches, it was argued that a combination of qualitative and quantitative methods was needed to best approach the topic. While the content analysis was chosen in order to address the topic on the basis of real-world data, an online survey was required to include factors in the analysis which were previously identified as impactful on the analyzed relationship, but which were not retrievable based on real world data.

On the one hand, the observation of real-world data makes it possible to draw conclusions based on what is happening in the real world. Of course real world data is very noisy, therefore making it sometimes difficult to insulate the effect of single factors. However, a fine-grained content analysis can help overcome this issue. In fact, in the present study, the categorization of the content of the Instagram posts in themes and social presence levels, in combination with a relatively homogeneous Instagram feed, helped reduce the noise in the brand-generated content as much as possible. On the other hand, basing the analysis on the observation of real data can be a limitation since not all factors are necessarily visible and observable, restricting the analysis to the visible factors only. In this case a quantitative approach can be of help in including important factors that need to be measured. In the present research, an online survey helped gaining insights into demographic factors that according to previous

research might have influenced individuals' judgement of the content of the posts, participants' level of agreement in the judgement of humorous content, and other factors that might have explained the variation in the engagement with the posts. Given the limited scope of the present study the sample of the online survey was relatively small. For this reason, the researcher had to make a choice of which measures to include in the survey and which not – more about them will be discussed later – in order to avoid the survey being too long and tiring for the participants. In fact, the small sample size implied that each list presented more stimuli, making the survey already long. Adding too many questions for each of the stimuli would have been undoubtedly detrimental.

With the present work the researcher acknowledges the complexity of the two methods included in the study. The main goal of the multimethod approach was to overcome the limitations that each of the two presented singularly as much as possible, however the researcher is aware that it was not possible to take all possible factors into account, therefore in the next sections an overview of possible suggestions for future research following a similar approach is presented.

Suggestions for approaches to humor analysis.

In the present discussion, it was already suggested that the type of humor displayed in the posts might have had a stronger effect of social presence, influencing the results of Hypotheses 1 and 2. Therefore, the researcher wishes to suggest more fine-grained approaches to content analyses of humor, by pointing out some humor type categorization that might be relevant in the context of similar future studies.

The first proposed categorization is based on linguistic types of humor. Having fixed taxonomies is necessary in order to have valid results about humor appreciation of language-impaired individuals (Lew, 1997). Lew (1997) did not point out the specific differences in the way different linguistic types of humor are perceived by the individuals. However, in the present study, it is argued that such an argument is valid also in other contexts in which people's ability to perceive humor is relevant, such as the one of social media marketing, making the classification of linguistic types of humor the first possible relevant humor type variation.

Another possible classification of humor type regards the distinction between types of humor in terms of content. As mentioned in the theoretical framework, a first relevant distinction regards constructive and offensive humor (Martin et al., 2003; Lunardo et al., 2018). Past research showed that offensive humor has a negative effect on brands' performance due to its potential inappropriateness in some contexts (Lunardo et al., 2018). Some participants' comments to the survey of the present study hinted at the idea that some humorous posts might have been more offensive and/or inappropriate than others. For example, one of the participants of the survey commented that he found the content making fun of men in general less attractive than others, whereas another participant stated the same about content which made a reference to Donald Trump's slogan.

A further distinction of types of humor can be made between simple and complex humor (Spielmann, 2014). Simple humor can be understood without requiring high cognitive involvement or high familiarity with the context, therefore it is easier to process than complex humor (Spielmann, 2014). The results of the survey showed that for the participants of the study the different levels of language proficiency did not influence the perception of Shanty's

humorous content. However, the sample of the survey presented a controlled variety of language proficiency, as only non-natives with a language proficiency of at least B1 level were eligible to take part in the survey. Contrarily, no information about the audience of Shanty Biscuits had been gathered. Therefore, considering that potentially the audience of the Shanty Biscuits Instagram feed does not exclusively consist of French native speakers or people of French nationality and that the variation of proficiency has not been controlled, the effect of humor complexity on the likelihood people liked or commented on a post needs to be further examined.

Additional online survey measures.

Previous literature showed the relationship between humor effectiveness and personality traits (Martin, 2003; Styśko-Kunkowska et al., 2010) and attitude towards humor (Fugate, 1998). As mentioned already, given the limited scope of this study, it was not possible to include these potentially relevant measures in the survey. Adding more measurements would have either made the survey too long, with too many questions for each of the stimuli, or would have required to reduce the number of stimuli per condition, which in turn would have required more participants for the study. Therefore, future research having a similar multimethod approach might use a bigger sample and include questions about participant's personality traits (Martin, 2003; Styśko-Kunkowska et al., 2010), their general attitude towards humor (Fugate, 1998) or their attitude towards humor production, their sense of playfulness, their use of humor to achieve social goals or as an adaptive mechanism, and their recognition and appreciation of humor (Thorson & Powell, 1991), in order to include other relevant measurements in the analysis.

The sample of the survey presented some further limitations which made it impossible to perform the analysis related to the effect of other factors such as nationality and age on humor

appreciation that were expected to play a role (Weinberger & Gulas, 1992) or to draw strong conclusions about the effect of gender (Weinberger & Gulas, 1992). It was argued that from a practical point of view, it would have been useful to provide marketers with indications about the effect of humor based on demographic characteristics of their possible target group. Therefore, future research should replicate the present analysis based on a bigger sample in order to have enough data to explore these characteristics.

Not only demographic factors were taken into account as possible control variables in the present study. In fact, it was argued that time would play a role in the number of likes and comments a post could gain. Therefore, it was tested whether time plays a confounding role in the relationship between social presence displayed n humorous posts and the number of likes and comments of the posts. The results showed that time was a significant predictor of number of likes and comments, however it was not a confounding variable in the relationship between social presence and number of likes and comments. In the present research, time was included as a control. However, future research can profit from findings of this significant predictor and analyze how the number of likes and comments develops over time to gain insights about how durable is the visibility of a post in terms of time and for how long it is still able to generate reactions after the publication.

General remarks.

A further limitation was the uneven distribution of posts among the levels of social presence. The researcher strongly recommends future research to replicate the study in a context where the different levels of social presence displayed are evenly distributed among the posts for a more representative sample. This could be achieved by comparing multiple brands selling the

same product with similar Instagram feeds, in order to analyze the effect of social presence more thoroughly.

Conclusion

The present study aimed to answer the question about the effect of social presence and humor appreciation on customers' engagement with brand-generated content in real-world Instagram data. The research contributed to fill the gap in the academic literature about social media marketing in two main ways. First, by focusing on Instagram it expanded the literature on a fairly unexplored social media platform. Second, by being based on a case study of an existing brand, it contributed to complement the mainly experimental work in the social presence field (Cyr et al, 2009; Droulers & Adil, 2015) with the analysis of real-world data. Furthermore, at the beginning of this work, it was pointed out that effectively engaging customers can be challenging (Ashley & Tuten, 2015). Therefore, the present research contributed to provide marketers with further insights about actual consumer behavior in relation to the effect of social presence and humor use in visual content.

As the present work is based on observational data, no strong causal claims can be made. However, it is argued that the arguments outlined in the present research can be of help for both researchers and marketers. The study investigated social presence by means of a more fine-grained approach compared to Bakhshi et al. (2014) trying to insulate also other factors included in the Instagram posts such as the theme of the content in order to create clear content categories. Based on this more fine-grained approach, the main analysis showed that the use of humor can be beneficial for the number of likes and lead to the supposition that it can potentially confound

the effect of social presence. The results supported the idea that more research in this direction is needed in order to understand how to isolate factors and analyze their effects alone and in combination with others in the context of a content analysis of brand-generated content. Finally, in line with the findings of Bakhshi et al. (2014), the exploratory analysis showed that overall there is a main effect of social presence on the number of likes of the posts on Shanty Biscuits' Instagram feed. However, the fact that the effect was supported only for three out of the six themes supports the initial critic to the coarse-grained approach of the study from Bakhshi et al. (2014) that might have hidden the effect of other relevant factors affecting customers' engagement. Therefore, it is suggested that marketers take the findings of this research into account when thinking about the visual content they want to share and the type of strategy they want to use with their customers.

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Appendix A

Full survey

Start of Block: Demographic questions

Consent Dear Participant, welcome!

The aim of the present study is to analyze the role of visual and textual elements of brand-related Instagram posts in customers' online engagement. Therefore, you will be presented with 30 Instagram posts of a French cookie company and you will be asked to evaluate simple statements regarding them.

The survey will take approximately 10-12 minutes and will be in English. Please keep in mind that your participation is voluntary and completely anonymous. You are free to withdraw the study at any point and none of the information that you will provide will be traceable back to you. Moreover, no marketing or promotional purpose is involved. The collected data will be used for the research process of a Master Thesis.
If you would like to contact the researcher for any question related to the study or the data, please email the researcher Anna Corone.

By giving your consent, you declare that your participation is voluntarily, you are at least 18 years old and you agree that the data will be stored for 10 years.

Please note that in order to participate to this study you need to speak French at least at a **B1 level**.

- ○ I consent, begin the study. (1)
- ○ I do not consent, I do not wish to participate. (2)

Skip To: End of Survey If Consent = I do not consent, I do not wish to participate.

Age How old are you? Please express your age in numerical form.

_____

Gender I am…

- Male (1)
- Female (2)
- Other (3) _____

Nationality Where are you from?

▼ Afghanistan (1) ... Zimbabwe (1357)

Education What is the highest educational level you have achieved?

- Primary school (1)
- High school degree or equivalent (2)
- Bachelor's degree (3)
- Master's degree (4)
- PhD (5)

How did you learn French?

- ○ I am a native speaker (1)
- ○ I studied it (2)

Skip To: End of Block If How learn French? = I am a native speaker

Where did you study French?

- ○ At school (1)
- ○ At university (2)
- ○ Other (Please specify) (3) _____

How often do you speak French?

- ○ Rarely (less than once a month) (1)
- ○ Monthly (2)
- ○ Daily (3)

Level of French How would you judge your level of French?
Please select the level on the basis of the statement that best describes it.

- ○ A1 - I can understand familiar words and very simple sentences. (1)
- ○ A2 - I can understand very short, simple texts. (2)
- ○ B1 - I can understand the description of events and feelings and texts that consist mainly of high frequency language. (3)
- ○ B2 - I can read articles and reports concerned with contemporary problems in which the writers adopt particular attitudes or viewpoints. (4)
- ○ C1 - I can understand long and complex factual and literary texts, appreciating distinctions of style. (5)
- ○ C2 - I can read with ease virtually all forms of the written language, including structurally or linguistically complex texts, my level is comparable to the one of a native speaker. (6)

Skip To: End of Survey If Level of French = A1 - I can understand familiar words and very simple sentences.

Skip To: End of Survey If Level of French = A2 - I can understand very short, simple texts.

End of Block: Demographic questions

Start of Block: Intro to blocks

Introduction to the stimuli.
For the next questions, please focus on the text of the cookie displayed in the Instagram posts and select to what extent you agree with the statements below each of them.
Note that we are interested in your first intuition, so please do not think too much about your answer.

End of Block: Intro to blocks

Start of Block: Block 1 List 1

The same structure was presented in all the eight lists. Each list consisted of 30 items except for list 8 which had 31. For practical reasons, the full version of list 1 only will be fully displayed.

1.1

"Beach please"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.2

"Le manger c'est m'engager"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.3

"22 ans et toutes tes dents"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.4

"We need money"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.5

"Serial eater"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.6

"Mort aux cons"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.7

"Eating is my cardio"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.8

"Je partage pas"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.9

"T'es mignon mais un peu con"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.10

"Maman j'ai raté le bac"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.11

"T'es pas célibataire pour rien"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.12

"Fais d'abord tes devoirs"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.13

"Personne n'est parfait. La preuve"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.14

"Hop dans les cuisses"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.15

"Je préfère ta soeur"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.16

"Ton coiffeur t'en veut"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.17

"The biscuits are calling & I must go"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.18

"Ça y est. J'ai faim"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.19

"Je me fiche des photos de tes gosses!"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.20

"50 nuances de biscuits"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.21

"J'ai vu ton mec sur Tinder"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.22

"Vends belle-mère pas cher"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.23

"Prenez un chewing gum Émile"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.24

"Home is where the clim is"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.25

"Il et tant de retournée à les cols"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.26

"Mieux qu'un Doliprane"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.27

"Les devoirs avant les biscuits"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.28

"Je préfère ta mère"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.29

"Prends les biscuits et cours"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

1.30

"J'ai des petits seins et alors?"

	Strongly disagree (1)	Disagree (2)	Neither disagree or agree (3)	Agree (4)	Strongly agree (5)
I found it funny (1)	○	○	○	○	○
It made me laugh (2)	○	○	○	○	○
It made me smile (3)	○	○	○	○	○

Page Break

End of Block: Block 1 List 1

Start of Block: Block 2 List 2

Questions 2.1 -2.30

End of Block: Block 2 List 2

Start of Block: Block 3 List 3

Questions 3.1 – 3.30

End of Block: Block 3 List 3

Start of Block: Block 4 list 4

Questions 4.1 – 4.30

End of Block: Block 4 list 4

Start of Block: Block 5 list 5

Questions 5.1 – 5.30

End of Block: Block 5 list 5

Start of Block: Block 6 List 6

Questions 6.1 – 6.30

End of Block: Block 6 List 6

Start of Block: Block 7 List 7

Questions 7.1 – 7.31

End of Block: Block 7 List 7

Start of Block: Block 8 List 8

Questions 8.1 – 8.31

End of Block: Block 8 List 8

Start of Block: Block 10

Comments. If you have any comments, please write them here.

_____

End of Block: Block 10

Debriefing.
You reached the end of the survey.

You just participated in a survey for a Master Thesis about the role of textual and visual characteristics in brand-related Instagram posts. The analysis will be based on a case study of the French company "Shanty Biscuits", which produces cookies of nine possible flavors offering clients the chance to customize them with a short text. The present study focuses on two elements possibly influencing customers' engagement with the post: the level of social presence of the picture and the type of text displayed on the cookie. Since the final analysis will include only posts with cookies with a fun text varying in levels of social presence, the aim of the survey was to check whether the text of the cookies was correctly categorized as funny or not.

If you have further questions, do not hesitate to contact the researcher.

Thank you for your time and participation.

For SurveyCircle users (www.surveycircle.com): The Survey Code is: G26G-EZ1Z-2G6G-7PMS

Appendix B

Comments of the participants of the online survey.

Participant 1: "Except 2 or 3 biscuits tags, the rest is bullshit."

Participant 2: "Thanks for making me giggle while imagining that some of those would actually make it to actual shops."

Participant 3: "Survey a bit too long for constant engagement."

Participant 4: "Really good idea. Some really good quotes! I would advise you to be mindful at some unethical or rude statements which may cause issues to the product once launched. Otherwise like the concept, hope the biscuits are good ! Good luck with your project."

Participant 5: "Most of them sound like boring platitudes or slightly judgemental of people."

Participant 6: "Good luck with your study!"

Participant 7: (Original text) "Certains messages étaient sympas donc ça rendait le biscuit attractif et ça donne envie de le manger. Mais tout de suite dès que ça a une envergure politique comme les biscuits qui font référence à la politique et au slogan de Trump ou les biscuits qui font référence au sexe j'ai trouvé ça beaucoup moins attractif. Je trouve que ton étude est intéressante car le biscuit est le même mais en fonction du message et du contexte l'envie de le manger change."

(Translated text) "Some statements were nice, which made the cookie attractive and made me want to eat it. However, I immediately found the cookies with a political scope such as the cookies referring to Trump's politic and slogan or the cookies referring to sex far less attractive. I think your study is interesting because the cookies stay the same but based on the message and the context the willingness to eat it changes."

Participant 8: (Original text) "J'ai trouvé tous les biscuits qui faisaient en rapport aux hommes beaucoup moins drôle. "

(Translated text) "I found all the cookies which referred to men far less funny."

Appendix C

Factorial ANOVA z-scores overview

Table C1

Overview of z-scores of skewness and kurtosis of numbers of likes and comments across levels of social presence

	Social presence	z-scores skewness	z-scores kurtosis
Likes	High	7.08	10.09
	Medium	45.32	216.36
	Low	28.20	28.01
Comments	High	15.66	27.82
	Medium	101.38	735.64
	Low	100.60	456.24

Table C2

Overview of z-scores of skewness and kurtosis of numbers of likes and comments across types of themes

	Themes	z-scores skewness	z-scores kurtosis
Likes	Humorous posts	4.66	2.28
	Emotional events of life	16.66	23.41
	Love	14.27	16.91
	No text	14.22	23.53
	Explicit content	0.37	-1.83
	Other	66.10	354.05
Comments	Humorous posts	31.89	122.38
	Emotional events of life	23.80	53.76
	Love	20.35	47.04
	No text	19.64	44.28
	Explicit content	2.86	-0.32
	Other	216.80	2311.82