

How does brand-related user-generated content differ across social media? Evidence reloaded

Abstract

In light of the relevant changes occurred in the social media environment in recent years, this paper aims to revisit and extend the work of Smith et al. (2012) by comparing how different online social media (Facebook, Twitter, and YouTube) shape important characteristics of brand-related user generated content (UGC) in a different brand setting, i.e., the cola market. We extend from six to ten the number of characteristics that should be considered when studying the role of social media in user content creation, adding four more dimensions, namely, connection with personal experience, exhibition of viral features, exhibition of brand recommendation features, and response to advertising campaigns that are not necessarily online. Our findings partially contrast with those obtained by Smith et al. (2012), reflecting the effects of the rapidly changing scenario as well as the role of the brand setting in the relationship between social media and brand-related UGC characteristics.

Keywords: user generated content; social media; brand; social media marketing; change.

1 Introduction

Social media marketing has surged as a mainstream marketing tool for companies in the last few years (Lamberton and Stephen, 2016). Recent figures indeed suggest that 90% of them commonly utilize social media to market their business (Stelzner, 2016). They adopt social media not only for digital advertising purposes, but also to manage the relationship with customers, engage them and take advantage of their ideas and information for product innovation and brand management (Solis, 2010; Kaplan and Haenlein, 2012; Smith et al., 2012). The extreme popularity of social media such as Facebook, LinkedIn, Pinterest, Instagram, and Twitter with billions of social interactions daily engaged by consumers around the globe has indeed provided firms with a great stimulus to leverage social media to generate value (Yadav et al., 2013; Duggan et al., 2015).

Along with these trends, the traditional one-way communication previously controlled and administered by marketers, is now multi-dimensional, two-way and peer-to-peer communication (Berthon et al., 2008). “A *brand is no longer what we tell the consumer it is – it is what consumers tell each other it is.*” (Scott Cook, co-founder, Intuit). As a matter of fact, the number of reviews, opinions, and other online content regarding companies, brands and products, generated and shared by users in social media has increased dramatically in recent years (Smith et al., 2012; Goodrich and de Mooij 2014). According to OECD (2007), user generated content (UGC) is online published content that is “created outside of professional routines and practices”. Differently from online word-of-mouth (eWOM), UGC is generated, and not just conveyed, by users (Cheong and Morrison, 2008). As such, it is essentially the manner through which users express themselves and interactively communicate with other people in online social media (Smith et al., 2012). Brand-related UGC is the type of user content created with regard to a specific brand. User reviews on a specific brand on Facebook or user videos discussing the features of a certain brand on YouTube are examples of brand-related UGC.

Brand-related UGC has a central role in developing social interactions, eWOM and brand relationship with greater insights into consumer perceptions around products or brands (Smith et al., 2012) and also in creating positive influence on “moment of truth” and shared recommendations (Moran et al., 2014). For instance, since their inception, major online retailers, have allowed online consumer reviews on their websites as these reviews have been shown to influence purchase decisions (Sridhar and Srinivasan, 2012). In particular, UGC has the potential to shape consumer brand perceptions and thus significantly influence a number of phases in the consumers' purchase decision process, i.e., need recognition, pre-purchase activities, purchase decision, and post-purchase activities (Goh et al., 2013; Yadav et al., 2013). Indeed, the effects of advertising and

brand-related marketing actions in social media do not merely depend on the original message, but also on user content generated in the context of the particular message and social media channel (e.g., commentaries or Facebook ‘likes’ related to an advertisement). While both firm-created and user-generated brand communication in social media influence brand awareness and associations, the latter seems to have a positive impact also on brand loyalty and perceived brand quality (Schivinski and Dabrowski, 2014).

Despite the growing body of literature accumulated on the role brand-related UGC in social media marketing (Muntinga et al., 2011; Smith et al., 2012; Halliday, 2016), it is recognized that more research is still needed to allow firms to fully unlock some of the inactive marketing potential contained in brand communities (He et al., 2017). In particular, little research has been conducted on how the process of creation of UGC and the relative characteristics may be influenced by the different types of social media. Given the large benefits brand-related UGC can generate, the high frequency usually characterizing UGC and its feature of viral diffusion, the study of whether and how users shape their contents differently across different social media can provide marketers with useful insights on the communication strategies to adopt in different social media to better engage consumers in brand and product co-creation processes. Indeed, to fully capture value from social media, firms are first required to comprehend the important differences arising across the different types of social media. Typically, social media include a number of different formats such as social networking sites, blogs, and online content communities (e.g., forums, photo and/or video-sharing websites), which have clearly different scopes, architecture, culture and norms. Structural differences among channels might deeply affect the social environment, such as the type of individuals who serve as members, the nature of relationships that are formed in these environments, and the dynamics and behaviors characterizing users. In particular, understanding how users engage and interact within different social media is crucial for firm profitability as it can support a better resource allocation across different social media (Smith et al., 2012), shedding light on which social media channel to use under certain conditions (Mulhern, 2009; Weinberg and Pehlivan, 2011; Gensler et al., 2013) and which the sequence of exposure should be adopted (Voorveld et al., 2012).

In order to advance the understanding of the role of social media in the creation of brand-related UGC and the relative features, this paper aims to revisit and extend the work of Smith et al. (2012), who have first compared how different online social media shape brand-related UGC on a number of different dimensions. The motivation behind our study is threefold. Two reasons are directly related to the directions for future research suggested by Smith et al. (2012) in their paper. These are: first, the importance of extending the theoretical framework to further relevant dimensions of

analysis for UGC across online social media to compose a more comprehensive picture of the characteristics of UGC that are influenced by the different social media; second, the need of considering other brand settings to enhance the generalizability of their insights (Smith et al. (2012) consider the retail-apparel industry). The third reason relates to the relevant and continuous changes occurred in social media in the years following the work of Smith et al. (2012). Specifically, in recent years there are has been a trend of incorporating more visual-oriented features in social media (Gupta, 2013; Vilnai-Yavetz and Tifferet, 2015; Pollard, 2017; Thompson, 2017). For instance, Facebook introduced a new live video streaming functionality only two years ago, and in general posting videos has become very popular among users in this social media site. Very recently, Twitter's CEO Jack Dorsey announced that the company is working on making it easier for users to express themselves much faster and with more images and videos other than text posts (Shinal, 2018). Moreover, in light of the technological developments, there has also been a huge shift to social media use from mobile devices (e.g., smartphones and tablets), which has opened up the room for more dynamic, ubiquitous, location-based and real-time interactions and, at the same time, has drastically increased users' participation (Dube, 2012; Kaplan, 2012; Lamberton and Stephen, 2016; Sterling, 2016; Kulkarni, 2017; Verhoef et al., 2017). By inducing such important changes in the social media landscape, these trends may naturally influence the role of different social media in user content creation in a manner that certain user behaviors and actions towards brands in and across social media may not be consistent over time. Therefore, it is important to understand whether, following these changes occurred in the social media landscape, the same differences in brand-related UGC identified by Smith et al. (2012) still emerge across different social media channels. It is equally important to shed light on whether new dimensions characterizing brand-related UGC differently across different social media channels have become prominent.

From a theoretical viewpoint, we extend the framework of Smith et al. (2012), which encompasses six dimensions of UGC, namely promotional self-presentation, brand centrality, marketer-directed communication, response to online marketer action, factually informative communication about the brand, brand sentiment, by adding four more dimensions, i.e., connection with personal experience, exhibition of viral features, exhibition of brand recommendation features, and response to advertising campaigns that are not necessarily online. These additional dimensions are particularly relevant in the current context of social media marketing and are likely to differ across different social media channels due to the technical and social differences characterizing these channels. Indeed, the increasing use of social media from mobile devices as well as social media's enhanced orientation towards more visual characteristics have given great impulse to real-time and ubiquitous

content posting (e.g., selfies), thus strengthening the association of brands with consumers' personal experiences and everyday life and making it more meaningful and habitual (Hollenbeck and Kaikati, 2012; Presi et al., 2016). Unraveling the extent to which users connect the brand with their personal stories (the dimension *Connection with personal experience*) across different social media is useful to marketers in order to fine-tune the communication to the type of user content emerging in each social media and exploit the social media channel favoring more intimate connections between brands and consumers' personal life events. Moreover, nowadays, consumers can easily post reviews immediately after they have consumed certain products or brands (e.g., restaurant service or new fruit-flavored beverage) to the purpose of informing their networks about their product or brand experience and offering them some recommendations. To avoid the consequences of negative eWOM, firms' interest in customer engagement through social media has dramatically increased (Malthouse et al., 2013). Recent evidence shows that firms more commonly engage customers to the extent that they become the first brand ambassadors in social media and promote the brand in the eyes of other customers (Nambisan, 2002; Malthouse et al., 2013; Harmeling et al., 2017, Osei-Frimpong and McLean, 2018; Reimer and Benkenstein, 2018). To fully exploit the opportunities offered by social media for customer engagement, firms have therefore a clear interest in knowing which social media environment provides higher stimuli to consumers to become advocates for their products and brands, and thus recommend them to their network of social ties (the dimension *Brand recommendation*). The increased ubiquity and multiple connectivity capabilities of modern consumption devices have also favored the simultaneous consumption of different media channels (Brasel and Gips, 2011; Fossen and Schweidel, 2016). Many consumers, nowadays, browse social media while watching TV shows and advertisements, and provide real-time comments about these contents (Dumenco, 2012; Business Insider, 2013). As a result, brand-related UGC may not only be a response to specific marketing actions carried out by companies in online social media (e.g., tweets sharing some daily brand news with customers), but they may also refer to large offline and/or online advertising campaigns. In this regard, social media become important tools to monitor and measure the impact of advertising campaigns second-by-second and on a grand scale (Hill et al., 2012). To this purpose, it is therefore important to distinguish whether the online content is created as a response to (offline and/or online) advertising campaigns or simply to online daily marketer actions, and understand in which social media consumers are more prone to comment over such campaigns (the dimension *Response to advertising campaigns*). Finally, the popularized use of social media in recent years due the wide diffusion of mobile devices has tremendously magnified the importance of online content virality for marketing purposes (Pescher et al., 2014; Hudson et al., 2016). For instance, it has been shown that UGC possessing

relevant characteristics of virality, i.e., UGC potentially able to reach viral diffusion on the Internet, are more likely to have a positive influence on customer purchase decisions, and thus on brand performance (De Bruyn and Lilien, 2008; Liu-Thompkins and Rogerson, 2012; Akpınar and Berger, 2017). For this reason, leveraging social media and consumers' eWOM to virally disseminate information about products and brands is recognized as a priority by most firms (Akpınar and Berger, 2017). Therefore, to fully exploit the potential of social media for viral diffusion, it becomes important for firms to identify the social media channels where brand-related UGC has higher likelihood to go viral (the dimension *Virality*).

From an empirical viewpoint, we revisit Smith et al. (2012) by investigating the same research question in a different environment and over a more recent time window. Specifically, we still test our hypotheses across the same social media, i.e., Facebook (a social networking website), Twitter (a micro-blogging website), and YouTube (an online video content community). However, differently from them, we select UGCs (1,440 contents) related to two global brands in the soft drink industry, Coke from The Coca-Cola Company and Pepsi from PepsiCo, to understand to which extent the findings obtained by Smith et al. (2012) in the apparel industry can be extended to other business settings. Indeed, the effect of the different social media on the characteristics of brand-related UGC may be intuitively influenced by context-related variables, such as market characteristics, e.g., visibility of consumption or competition (Fischer et al., 2010), firm/brand characteristics, e.g., organizational structure or brand architecture, and consumer-brand relationship characteristics, e.g., brand attachment (Gensler et al., 2017). As an example, a high visibility of product consumption should make brands more susceptible to social media because of the public and social nature of the consumption process. Consequently, marketers may be willing to privilege social media where the feature of visibility of product consumption is emphasized. A new empirical test in a different market context helps further increase the comprehension of the phenomenon. Moreover, our paper encompasses more recent data (our data collection relates to the period 2015-2017). In light of the mentioned relevant changes occurred in the social media environment in recent years, an updated empirical sample helps verify the robustness of previous evidence over time as well as shed light on new characteristics of brand-related UGC that may differ across social media.

The remainder of the paper unfolds as follows. In § 2 we present our theoretical arguments and the relative hypotheses. In § 3, we describe data, variables and methods adopted in this paper. In § 4, we present our empirical findings. Finally, we provide managerial implications and conclude in § 5.

2 Theory and Hypotheses

To understand how the characteristics of brand-related UGC vary across different social media, we adopt the framework proposed by Smith et al. (2012), where six relevant dimensions of brand-related UGC are identified, and integrate it with additional four dimensions. To the scope, we ground our arguments on the extant literature as well as on the major changes occurred in the social media environment in recent years. Specifically, we replicate the same hypotheses formulated by Smith et al. (2012) with regard to the six dimensions of UGC, namely self-presentation, brand centrality, marketer-directed communication, response to online marketer action, factually informative about the brand, brand sentiment. We add four hypotheses on how important characteristics of UGC, i.e., response to advertising campaign, connection with personal experience, exhibition of viral diffusion features, and exhibition of brand recommendation features, are influenced by the evolving technical and cultural differences of the three social media channels.

Promotional Self-Presentation

Self-presentation can be viewed as people's effort to convey a specific image and identity of themselves to others (Zywica and Danowski, 2008). This effort is often associated with the use of products and brands (Belk, 1988, 2013; Schau and Gilly, 2003, Smith et al., 2012). Prior literature has suggested that the different culture, social norms established in social media as well as technical features may influence the extent to which users emphasize self-presentation in their UGC. Indeed, while users' self-presentation activities may be encountered in all three social media channels, it has been noted that specific characteristics of some social media channel may create a more favorable environment for producing UGC where the self-presentation component is relevant (Smith et al., 2012). For instance, being a content community where users post, view and comment videos, YouTube can naturally facilitate users' self-presentation. As a matter of fact, Burgess and Green (2009) have described YouTube as a platform for public self-expression that "matches to the ideas about a user-led revolution that characterizes rhetoric around Web 2.0." YouTube's emphasis on self-presentation is also demonstrated by the slogan "Broadcast Yourself" the platform adopted until 2012, which during the years has nurtured the dream of celebrity of a plethora of users, motivating them to produce videos (e.g., vlogs) to present themselves to the public, show their abilities, and share stories and opinions (Misoch, 2014). In this respect, it is not a secret that many celebrities nowadays, such as Justin Bieber, The Weeknd, and Kate Upton, have started their careers by presenting their performances on YouTube (Johnston, 2014; Briones, 2016). Self-presentation has been also particularly encouraged on Facebook, which, by virtue of being a social networking website, requires users to create a profile page featuring personal information (e.g., personal data, hobbies, favorite actors, singers, brands) and share information, pictures, videos, links and other types of online content with friends by means of wall posts and private messages.

However, before Facebook's recent emphasis on more visual features (e.g., the cited extension to live video streaming), UGCs available on this social media channel did not display very high level of self-presentation because users mostly utilized the profile's page and their list of friends to this purpose (Papacharissi, 2009; Back et al., 2010; Nadkarni and Hoffman, 2012; Smith et al., 2012). Particularly, Smith et al. (2012) has found evidence that UGC contains self-presentation elements less frequently on Facebook than on YouTube. Consistent with this evidence, other studies have identified the need to belong or to communicate rather than self-presentation as the major motivator of Facebook use (Seidman, 2013; Halliday, 2016). Similarly, several authors have agreed that, while self-presentation may certainly be one of the motives behind Twitter use, it is not the main focus of people being active on this social media site, or at least it is not as developed as in other social media channels such as YouTube (Kietzmann et al., 2011; Smith et al., 2012; Halliday, 2016). Indeed, due to its nature of micro-blogging website, Twitter has traditionally allowed users to publish very short text content (the well-known limit of maximum characters still remains although it has been recently extended to 280 characters), which in turn stimulate more conversation and sharing of news, rather than self-presentation (Smith et al., 2012).

While prior literature has suggested that users' self-presentation should be more frequently observed in brand-related UGC available on YouTube than that on Facebook or Twitter (Smith et al., 2012), the recent shift towards more visual features occurred in the last few years in social media not exclusively focused on visual contents (Gupta, 2013; Vilnai-Yavetz and Tifferet, 2015; Pollard, 2017; Thompson, 2017; Shinal, 2018) may have diminished the differences emerging across social media with regard to this characteristic. Therefore, it is interesting to re-examine the hypothesis originally formulated by Smith et al. (2012), that brand-related UGC on YouTube more likely displays characteristics of self-presentation than that on Facebook and Twitter. Accordingly, we formulate:

H1. Brand-related UGC on YouTube is more likely than brand-related UGC on Facebook or Twitter to feature consumer self-presentation.

Brand Centrality

Brand centrality refers to whether the brand is the actual focus of the given brand-related UGC or it is simply a companion (Smith et al., 2012). Extant research has underscored that technical characteristics of social media may influence the role of brands in brand-related UGC across different social media channels. Specifically, with regard to brand centrality, Twitter's character limit, though less stringent than before (Perez, 2017), has traditionally made it harder to include multiple topics in single tweets (Smith et al., 2012; Ma, 2013; Ceballos et al., 2016). Accordingly,

prior literature has found that brand-related UGC on Twitter is more likely to be brand-centric than the counterpart on Facebook and YouTube, which do not impose similar restrictions (Smith et al., 2012; Ma, 2013). In this respect, Twitter has been also considered the preferred social media site for creating a brand community (Lopez et al., 2017). Moreover, prior research has suggested that brands often have a peripheral role in UGC on YouTube as consumers find it hard to recall seeing product-related information on the site (Cheong and Morrison, 2008; Smith et al., 2012). This is somehow consistent with the observation that users on YouTube tend to be less attracted by content purely informative about the brand (Checchinato et al., 2015). As a matter of fact, Smith et al. (2012) have shown that that brand-centrality is least frequently observed on YouTube's UGC, by virtue of greater users' attitude to focus on self-presentation in this channel.

However, two changes have occurred in the social media environment since Smith et al. (2012) that may have weakened the differences emerging across social media with regard to the characteristic of brand centrality in brand-related UGC: on the one hand, the more permissive character rules gradually adopted by Twitter (Perez, 2017), and on the other hand, the increased emphasis on visual features especially on Facebook (Gupta, 2013; Vilnai-Yavetz and Tifferet, 2015; Pollard, 2017; Thompson, 2017) that may have reduced the relative self-presentation gap with YouTube and consequently flattened also the differences in brand centrality of UGC. Therefore, we re-examine the hypothesis formulated by Smith et al. (2012) to understand whether these changes have influenced the role of social media in brand centrality of UGC:

H2. Brands are most likely to be central in brand-related UGC on Twitter and least likely to be central in brand-related UGC on YouTube.

Marketer-directed Communication

Social media have dramatically increased the number of interactions between brands and their consumers (Hennig-Thurau et al., 2010; Gensler et al., 2013; Labrecque, 2014). The opportunity to dynamically interact with customers to learn their opinions, preferences and stimulate ideas from them has induced many firms to create pages for their brands on the main social media (Luarn et al., 2015). Notwithstanding, prior research has highlighted that social media may differ with regard to the extent to which consumers may use them to interact directly with the company, for instance asking questions, complaining about products, or commenting over firms' posts (Smith et al., 2012). Indeed, the different technical and cultural characteristics characterizing different social media channels may create diverse incentives to users to engage in brand-related communication directly with firms on social media. In this respect, Twitter and Facebook have been largely perceived as social media where it is simple and quick for consumers to interact with the brand as

they can simply post comments and replies on the pages created by brands (Naaman et al., 2010; Smith et al., 2012). In contrast, due to considerable effort required to make a video, users have been, comparatively speaking, less incentivized to use YouTube to pose questions, comments and/or complaints directly to the firms. This difference has been further magnified by the recent changes occurred in social media. Indeed, the tremendous increase in the use of social media from mobile devices has naturally increased the number of real-time interactions between users and brands on Facebook and Twitter, where it is more immediate to share contents. Therefore, it still seems reasonable to expect lower frequency of UGC directed to marketers on YouTube as compared with Facebook and Twitter (Smith et al., 2012). Hence, we formulate:

H3. Marketer-directed brand-related UGC is less likely on YouTube than on Facebook or Twitter.

Response to Online Marketer Action

Closely related to the preceding characteristic of brand-related UGC, we also are interested in understanding in which social media site users are more or less likely to produce UGC as a response to marketing actions carried by marketers on the given social media. Marketer actions on social media may be in the form of news or event announcements, coupon posting, or questions to consumers. Note however that, although being closely related, investigating whether this dimension varies across different social media is a different issue from the preceding hypothesis. As pointed out by Smith et al. (2012), the intended receiver of social media user responses to these online marketer actions does not need to be the marketer; it could also be other social media users. Similarly to the above dimension, the easiness and rapidity of accessing and visualizing brand content in social media sites such as Facebook and Twitter should provide a greater stimulus to users active on these sites to create content in response to it, as compared with users on YouTube (Smith et al., 2012). In contrast, on YouTube, while users can still quite easily provide comments in response to marketer actions, they do not do it as frequently as in the other two channels as the culture on YouTube is centered on video creation rather than on writing comments. Given that the creation of videos requires longer time and more sophisticated skills, not even videos are usually produced as a response to certain marketer actions on the channel (Smith et al., 2012). Therefore, we expect that the hypothesis formulated by Smith et al. (2012) should still be valid, and thus formulate:

H4. Brand-related UGC is less likely to be posted in response to an online marketer action on YouTube than on Facebook or Twitter.

Factually Informative about the Brand

This dimension indicates whether UGCs report factual information about the brand rather than personal opinions or experiences. According to Smith et al. (2012), objectively verifiable information, such as physical characteristics of the product, price, store location, and brand official information, in any of the forms supported by the three social media channels, rightly falls into the category of factual information. Recent research has suggested that UGC on Facebook often contains factual information related to brands (Chen et al., 2013; Kim and Johnson, 2016). Similarly, Twitter's focus on sharing news and facts has facilitated the presence of factual information in brand-related UGC in this channel (Taecharunroj, 2016). In contrast, the higher emphasis on self-presentation characterizing UGC on YouTube should intuitively prepare a less favorable environment for objectively verifiable information on this channel as compared with the other two. Nevertheless, Smith et al. (2012) have argued that the presence of factual information in brand-related UGC should not vary significantly across different social media channels. They have explained that, although the YouTube's stronger "self" focus favors the sharing of personal opinions in some video formats, the same platform hosts other video formats (e.g., product reviews) through which factual information can be easily shared, similarly to the other two platforms.¹ We add that the similarity of social media with regard to the presence of factual information in brand-related UGC is likely to have increased as a result of the increased orientation towards more visual features recently occurred in social media not exclusively focused on visual contents (Gupta, 2013; Vilnai-Yavetz and Tifferet, 2015; Pollard, 2017; Thompson, 2017; Shinal, 2018). Indeed, as discussed earlier, this change may have diminished the differences emerging across social media with regard to the characteristic of self-presentation in brand-related UGC and consequently smoothed also the differences related to the presence of factual information in brand-related UGC. Therefore, we expect that, in the current scenario, brand-related UGC should be equally factually informative in all three social media sites, and thus formulate:

H5. Brand-related UGC is likely to be equally factually informative in all the three social media.

Brand Sentiment

Social media allow firms to monitor and analyze consumer conversations, and thus have a better clue about consumers' sentiment toward their brands and products (Schweidel and Moe, 2014). Brand sentiment can be defined as the sentiment expressed by social media users toward brands in their UGC. Under a simplistic view, it describes whether users have positive, neutral or negative

¹ It is noteworthy that, in spite of their arguments, Smith et al. (2012) have observed lower frequency of factually informative UGC on Facebook, which they have explained as a consequence of the brand setting (i.e., apparel brands) considered in their study.

attitude toward brands when commenting or reviewing them in their UGC. Prior research has found quite large variability of brand evaluations provided by users in social media, irrespective of the channel where UGC was produced. For instance, Liu et al. (2017) have observed that positive, neutral and negative sentiment are all quite common in UGC available on Twitter, and that the extent to which UGC is more oriented to positive or negative sentiment strongly depends on the brand category. This is consistent with the argument posited by Smith et al. (2012) that Twitter is associated with types of content that typically could be assessed as neutral (i.e., information), negative (i.e., complaints), and potentially positive (i.e., opinions). Similarly, a considerable variability in the consumers' sentiment toward brands has been found on Facebook (Kim and Johnson, 2016), in line with the argument of Smith et al. (2012) that Facebook hosts a variety of posts ranging from those derived from positive/negative personal experience to those more neutral related to the request of information. Indeed as some authors have noted, social media such as Twitter or Facebook can serve as effective media for positive word of mouth (WOM), but they can also expose brands to negative commentary and complaints from consumers, which may even generate greater effects (Pfeffer et al., 2013; Hennig-Thurau et al., 2015; Kim and Johnson, 2016). Smith et al. (2012) have also argued that brand sentiment in UGC on YouTube should be quite similar to that observed on the other two social media channels. This is because the peripheral role of brands in YouTube UGC, which would lead to more neutral sentiment, is likely to be compensated by the presence of vlogs where users may take neater stance with regard to the brand.

These considerations suggest users can easily provide any type of judgments about brands (e.g., positive, negative, or neutral sentiment) in each of the three social media. We argue that the major trends occurred in the social media environment in the years after Smith et al. (2012), namely higher focus on visual features and wider use of social media from mobile devices, are unlikely to influence how brand sentiment varies across social media because they do not tend to canalize a specific opinion into a specific social media site. Hence, we expect that the hypothesis formulated by Smith et al. (2012) should still be valid, and thus hypothesize:

H6. Sentiment towards brands in brand-related UGC is similar across all three social media sites.

Response to Advertising Campaign

While Smith et al. (2012) consider the fact that users can create brand-related content as a response to marketer actions on the social media, they seem to refer to user response to daily marketer actions such as questions, news, coupon provision, rather than examining whether consumers use social media to comment on (offline and/or online) advertising campaigns, e.g., TV commercials.

The large variety of media contents, coupled with the increased ubiquity and multiple connectivity capabilities of modern devices, has favored the simultaneous consumption of different media channels that were traditionally utilized separately (Brasel and Gips, 2011; Fossen and Schweidel, 2016). As a matter of fact, recent surveys demonstrate that the majorities of social media users comment about TV shows and advertisements, and many of them browse social media through their mobile devices while watching TV, thus offering marketers the opportunity to exploit multiple types of media channels jointly (Dumenco, 2012; Business Insider, 2013). For instance, combining both TV and social media, Korean company Kia Motors enjoyed great success for two SuperBowl advertising campaigns, resulting in a myriad of consumers sharing related comments, videos, and images via social media (Furrier, 2013). More in general, recent studies have shown that offline advertising campaigns have a significant effect on social media chatter, mainly in terms of visibility and virality (Srinivasan et al., 2015; Fossen and Schweidel, 2016; Tirunillai and Tellis, 2017). In this respect, social media can serve as a real-time tool to monitor the impact of offline and offline advertising campaigns on a grand scale (Hill et al., 2012).

Given the prominent role social media may play in determining and monitoring the success of (offline and online) advertising campaigns, it is important to understand in which social media channel (Facebook, Twitter, YouTube) users are more stimulated to chat about brand advertising campaigns, which has been never examined before. To formulate our hypothesis on this matter, we use the same arguments Smith et al. (2012) provided on the role of social media in the creation of user content as a response to online marketer actions. Indeed, we believe that the same characteristics of social media play a role also with regard to our new dimension of UGC. Specifically, the greater skills and the longer time necessary to create a video on YouTube should provide users with less incentive to respond to (offline and online) advertising campaigns as compared with channels such as Facebook and Twitter. Indeed, in the latter channels a multitude of users can now very easily share real-time comments while watching the given advertisement, by simply using a mobile device. This argument that UGC responding to advertising campaigns should be less frequent on YouTube is strengthened by the evidence that online chatter around advertising campaigns ceases quite soon after the campaign (Tirunillai and Tellis, 2017), which would contrast with the time and effort needed to produce UGC on this channel. Therefore, we formulate our first novel hypothesis as follows:

H7. Brand-related UGC is less likely to respond to (offline and/or online) brand advertising campaigns on YouTube than on Facebook or Twitter.

Connection with Personal Experience

Prior research has identified a variety of reasons behind people's use of social media including the need of entertainment, social interaction, personal identity building, information, remuneration, and empowerment (Muntinga et al., 2011). Irrespective of the motivation, consumers more and more connect the use of brands with their personal events, e.g., birthdays, holidays, or everyday life, in their UGCs (Carlsson, 2016). The growing use of social media from mobile devices as well as the recent shift to more visual features in social media have boosted real-time, ubiquitous and informationally rich content posting activities, such as selfies, thus making more natural and immediate for consumers to share content where the brand is associated with personal experiences and everyday life (Hollenbeck and Kaikati, 2012; Presi et al., 2016). In these posts, the brand becomes a meaningful component of the life events that the given user wants to share with his/her friends or the public. Indeed, while the brand may play a peripheral role in these contents, the fact that it is publicized by social media users to others as part of their life is indicative how well the brand has been interiorized by consumers, thus providing useful information about consumer brand loyalty. Moreover, this brand-user connection helps understand other important issues to marketers, such as the occasions where brand is most likely to be consumed. Therefore, it is important to understand how much frequently UGC displays this feature of associating brands with people's personal experiences across different social media channels.

Prior literature has noted that, to satisfy user social goals, UGC connecting brands with personal life events is usually shared real-time, i.e., while these events are ongoing or at most immediately after their conclusion (Olsson et al., 2008; Wang, 2013). The brand characteristic of being intimately connected and concurrent with the happening of a personal event naturally contrasts with the skills and long time requested to produce videos on YouTube, thus making this type of UGC not particularly suitable on this media channel. In contrast, the clear social networking nature of Facebook, coupled with the recent trends towards more visual and real-time features (e.g., live video-streaming functionality), provides users with a much more suitable environment to share personal events with their friends, like a diary, in a timely and cost effective manner (Bevan et al., 2015; Huang and Benyoucef, 2015). In the same vein, Twitter's focus on quick and real-time sharing of information, coupled with more permissive character rules, should also create a more favorable environment (as compared with YouTube) to create brand-related content related to personal life events. As a consequence, we advance that UGC connecting brand with users' personal events and experiences should be less frequently observed on YouTube rather than on Facebook or Twitter, and thus formulate:

H8. Brand-related UGC is less likely to associate the brand with a user personal experience on YouTube than on Facebook or Twitter.

Virality

An important feature of social media, magnified in recent years by the widespread use of mobile devices, is that they enable the viral diffusion of both user- and marketer- generated content. The fact that nowadays, through social media, a message can rapidly reach a vast audience with considerable cost savings has changed the way marketers approach marketing communications (De Bruyn and Lilien, 2008; Pescher et al., 2014). Indeed, leveraging social media and consumers' WOM to disseminate information about products and brands (referred to as *viral marketing*) has become central in the marketing strategies of many firms. Although firms naturally lose some control over brand communications when involving consumers in this process, evidence has shown that the information provided by consumers is more likely to be trusted, and thus can influence purchase decisions more effectively (Cheong and Morrison, 2008; Goh et al., 2013). The efficacy of leveraging consumers in social media for marketing communication naturally depends on the characteristics of the UGC that can drive its viral diffusion. Prior research has identified a number of features that can increase the likelihood of UGC viral diffusion. Berger and Milkman (2012) have underscored that contents evoking high arousal positive (e.g., awe) or negative (e.g., anger) emotions are more likely to go viral than those that do not exhibit such types of emotions. However, Akpınar and Berger (2017) have found that, while emotional content is more likely to go viral than purely informative content, the latter is more impactful in terms brand evaluation and purchases than purely informative content. Moreover, some studies have posited that more vivid and interactive online content, e.g., questions or challenges, is more likely to go viral on social media (de Vries et al., 2012), whereas others have demonstrated that entertainment and educational values, rather the content production quality, influence the diffusion of UGC (Liu-Thompkins and Rogerson, 2012). More broadly speaking, the type of product, the content acquisition method, the information direction (positive versus negative), the website reputation have been all highlighted as important drivers of eWOM propagation (Park and Lee, 2009; Berger and Schwartz, 2011; Chen and Berger, 2016). Finally, with regard to the user characteristics, Ketelaar et al. (2016) have shown that virality is positively related to user positive attitude towards brand and advertisement, whereas the findings in Ho and Dempsey (2010) have suggested that online content tends to be virally fueled more by individualistic and/or altruistic users.

To the best of our knowledge no studies, however, have examined in which social media channel brand-related UGCs are more likely to display the characteristics that can favor their viral diffusion. Essentially, it remains unclear whether certain social media channels may represent more favorable environment than others for UGC viral diffusion. We argue that UGC on Facebook and Twitter should exhibit characteristics of virality (i.e., characteristics that would favor viral diffusion) more

frequently than UGC on YouTube. This is because the former social media channels implement technical functionalities, such as share and retweet functions, respectively, that intrinsically favor viral diffusion on their platforms. In contrast, YouTube does not implement this type of functionalities for on-site sharing, which may weaken the ability to go viral within the channel. However, it should be observed that, in line with the Media Richness Theory (MRT) (Daft and Lengel, 1986; Dennis and Kinney, 1998), this disadvantage of YouTube may be compensated by the fact videos can naturally process richer information, and thus tend to be a more effective communication format than others. For instance, they are more likely to evoke high-arousal emotions than simple posts or pictures, which in turn should favor viral diffusion according to prior literature (Berger and Milkman, 2012; Akpınar and Berger, 2017). We argue that this second aspect should be less influential than the former one because it is not rare that even videos produced on YouTube reach viral success on Facebook or Twitter (rather than on the original channel). Indeed, whether a video goes viral on YouTube is not simply a consequence of the characteristics of this social media channel, but it is mainly the result of characteristics external to the channel such as user's contact base and fame (Liu-Thompkins and Rogerson, 2012; Feroz Khan and Vong, 2014). Moreover, the recent trends suggests that social media originally not focused on video sharing (i.e., Facebook and Twitter) are catching up with regard to visual features offered to consumers, thus further supporting the lower relevance of the second aspect. Hence, we formulate our hypothesis on the effect of social media on UGC virality as follows:

H9. Brand-related UGC is less likely to possess virality features on YouTube than on Facebook or Twitter.

Brand recommendation

Consumer brand engagement can be defined as a “psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g., a brand)” (Brodie et al., 2011). This psychological state often materializes as a consumer's voluntary contribution to firm's marketing functions, such as customer acquisition and retention, product innovation, marketing communication, beyond the economic transaction carried out between the firm and the consumer (Harmeling et al., 2017). Firms more often try to motivate, empower, and engage customers to the extent that they become the first brand ambassadors in social media and promote the brand in the eyes of other consumers (Nambisan, 2002; Malthouse et al., 2013; Harmeling et al., 2017; Reimer and Benkenstein, 2018). This is because the adoption of marketing strategies aimed at creating strong consumer brand engagement is conducive to the attainment of superior profitability (Nambisan and Baron 2007; Bijmolt et al. 2010; Kozinets et al., 2010). For instance, recent studies

have shown that explicit brand recommendation through UGC tends to have positive influence on consumers' purchase intentions (Packard and Berger, 2017).

Social media have been identified as a powerful instrument to engage consumers in a timely and direct manner, and at higher levels of efficiency than can be achieved with more traditional communication tools (Kaplan and Haenlein, 2010; Osei-Frimpong and McLean, 2018). However, little is known on whether consumer brand engagement varies across different social media. In particular, it is unclear whether users are more prone to create content explicitly recommending a brand to their networks in certain social media channels rather than in others. We advance that the extent to which consumers explicitly promote the brand via UGC may differ across social media depending on the evolving structural and cultural characteristics of the social media. These characteristics encompass the type and format of shared contents, the platform features and tools provided for content production and sharing, etc., which naturally induce different social norms and behaviors across different social media. In other words, our argument is that, in light of the different characteristics, social media may differ in the frequency of UGC where users explicitly recommend the brand. Specifically, we ground on MRT (Daft and Lengel, 1986; Dennis and Kinney, 1998) to argue that the communication format will play a crucial role in determining cross-media differences with regard to the brand recommendation dimension of UGC. Indeed, MRT suggests that media (including social media) differ in information richness (i.e., the ability of information to change understanding within a time interval), and thus some media may be more effective than others in the communication process to the audience. In particular, it is widely recognized that formats enabling more complete (richer) forms of communication (e.g., including gestures, voice, sense of presence, etc...), such as videos, should be more impactful than leaner formats, such as written text (Klein, 2003; Kaplan and Haenlein, 2010). Therefore, in line with MRT, we expect that, due to their will of offering an effective voluntary contribution to the brand development and diffusion, engaged users would choose the richest forms of communication and possibly specialized supporting platforms to recommend the brand through their UGC, despite this approach might result in a higher resource consumption and request higher skills and time for content production. As a result, we should more likely observe UGC where users promote the brand to other users on YouTube rather than on Facebook or Twitter. We recognize that the recent trends toward more visual features also on social media not originally focused on video sharing (e.g., Facebook) may mitigate this difference. However, we believe that, by virtue of being a specialized video-sharing platform, YouTube should still be more suitable for brand recommendation purposes, as compared with Facebook and Twitter. Accordingly, we hypothesize that:

H10. Brand-related UGC is more likely to feature explicit brand recommendation on YouTube than on Facebook or Twitter.

3 Data & Methods

To test the above hypotheses, we followed the approach undertaken by Smith et al. (2012) in terms of sampling procedure and methods of analysis (though, as discussed, we consider different brand setting and time window). Similarly to them, a user posting was considered as brand-related if the brand was mentioned, or displayed in it or if there was a clear reference to it. To clarify the latter case, a comment like “I love it” posted as a response to a marketer action in the brand page of the given social medium was considered as brand-related given the clear reference to the brand, in spite of the fact that the brand itself was not explicitly mentioned or displayed. We randomly collected 240 UGCs for each of the two brands, Coke from The Coca-Cola Company and Pepsi from PepsiCo, in each of the three social media used by Smith et al. (2012), namely Facebook (a social networking website), Twitter (a micro-blogging website), and YouTube (an online video content community), on May and June of years 2015-2017, yielding 1,440 observations in total.

To our sampling purposes, as highlighted by Smith et al. (2012), an important difference among the three social media concerns the fact that, contrarily to Twitter and YouTube, most postings are private on Facebook. That is, many postings on Facebook are not visible to users outside the friend network of the author of the post, whereas on Twitter and YouTube, most of the content, if not all, is publicly available (private accounts are approximately 10% of all accounts in Twitter). This difference can be hardly eliminated because it is quite problematic to obtain access to private content on Facebook. Nevertheless, in line with Smith et al. (2012), we believe that this difference should not affect much our findings because the number of publicly available brand-related UGCs on Facebook is still very large and, in principle, we can reasonably assume that publicly available brand-related UGCs share similar features to their private counterparts. To retrieve data for our sample, we used the search engine available in each of these social media by typing the words “Coke” and “Pepsi” respectively, and by restricting each search to the above period of observation. Similarly to Smith et al. (2012), for all three social media, each post was selected by randomly picking one every ten results displayed progressively in the given social media site until 240 posts were collected for each brand on each site. Of course, in our sampling procedure, we considered only postings produced by consumers and with no apparent commercial objective. It is also important to point out that when we encountered a brand-related post from the company in our sampling procedure, we retrieved random comments provided by users as a response to the company post. Overall, posts well represented the wide range of UGC types that can be found on

each site. For example, on Twitter, tweets, retweets, and replies were all included in the sample. On Facebook, status updates, wall posts, forum contributions, pictures, and videos were all represented in the sample. On YouTube, we included videos and comments.²

The choice of considering the soft drink industry, and specifically Coke and Pepsi brands is due to the fact the cola market is essentially a duopoly worldwide and the two brands have global recognition, regularly ranking among the most valuable brands worldwide according to Interbrand.com. In particular, in 2016, Coke ranked 3rd with a brand valuation around \$70 billions, whereas Pepsi ranked 23rd with a brand valuation around \$20 billions. The fact that the cola market is globally a duopoly has the advantage that we can simply consider two brands, thus limiting data collection effort, with no risk of missing UGC related to other brands active in the same product category. In other words, all the relevant brand-related UGCs with regard to the cola product category do not refer to (and cannot be affected by) any competitor other than the two brands analyzed in this paper. In our view, analyzing only the UGC related to two brands in an industry with more than two competing brands as done by Smith et al. (2012) may be problematic because the sample may not be representative of all social media users given that UGCs of consumers of excluded brands would be disregarded. In turn, this may limit the generalizability of the results on how different social media influence the characteristics of brand-related UGC even within the same product category. Therefore, our choice of considering two brands in a duopoly market helps keep data collection and analysis manageable without affecting much generalizability (at least at the product category level). In addition, choosing an industry different from that examined by Smith et al. (2012) helps understand to which extent their findings obtained in the apparel industry can be extended to other business settings, which is one of the goals of this paper.

The choice of considering Coke and Pepsi is also due to the fact that, being giant corporations, the two companies (namely The Coca-Cola Company and PepsiCo) owning these two brands spend huge amounts on digital marketing and are very active on social media (Sviokla, 2010). The Coca-Cola Company's digital marketing expenses are estimated around 40% of their total marketing expenses (the latter being approximately \$3.5 billions in 2014) with social media marketing alone accounting for 20% of them (Ignatius, 2011; Urbanski, 2013; Investopedia, 2015), whereas PepsiCo's digital marketing expenses are between 15% and 20% of their marketing budget, the latter being approximately \$2.3 billions in 2014 (Investopedia, 2015; AdGully Bureau, 2016). The

² As pointed out by Smith et al. (2012), all three social media delete the number of contents they publically archive over time. Therefore, if data related to a certain period are gathered much later, some observations are naturally excluded from the analysis without any certainty on whether this deletion may or may not bias the sample. However, in our study, data were collected exactly during the period to which they refer. Therefore, this issue should not be relevant in our study.

different level of expenses hints at the existence of possible differences in the social media strategies of the two brands and thus also in the way they perform. For instance, to increase brand awareness PepsiCo has always relied heavily on musical endorsements and partnerships also on social media (e.g., the campaign Out of the Blue awarding live music experiences to fans snapping a photo of Pepsi and posting it on Twitter with the hashtag #OutoftheBlue). But the Coca-Cola Company has still been more successful to the scope by exploiting the potential of social media (e.g., through the campaign Share a Coke where social media played a crucial role encouraging people to share their name find using the hashtag #ShareaCoke) (Ratcliff, 2014; Lovejoy, 2015; Papachristos, 2015). As a matter of fact, some figures show that Coke's page on Facebook enjoys 107 millions likes, whereas Pepsi's page reaches 37 millions likes. Coke's followers (tweets) on Twitter are 3.4 millions (246,000), whereas Pepsi's followers (tweets) are 3.1 millions (34,000). Coke's page subscribers on YouTube are more than 2 millions, whereas the counterparts for Pepsi are 0.8 millions.³ Not surprisingly, as the Coca-Cola Company's market capitalization is 30% more than PepsiCo, these figures suggest that the social media marketing strategy of The Coca-Cola Company has been so far more effective than that adopted by PepsiCo (Lovejoy, 2015). According to Brandwatch report, conversation around Coke tend to be 2.5 times greater than that on Pepsi, with the former brand displaying also higher social visibility and reach growth (Lovejoy, 2015). It is noteworthy, that Coke slightly passed Pepsi on Twitter only recently, after PepsiCo anticipated The Coca-Cola Company in the use of Twitter as a media channel. This may be due to the fact that while Coca-cola adopts very thorough strategy in replying to its followers' tweets, Pepsi tweets more often but with less engagement (Ratcliff, 2014). Therefore, in line with Smith et al. (2012), the fact that the two brands quite differ in the way they approach and perform in social media helps understand whether a more or a less proactive social media marketing strategy influences the effect of the different social media on the characteristics of brand-related UGC.

As for the methods, following Smith et al. (2012) we used content analysis performed by multiple analysts to obtain the information necessary to our purposes. Content analysis is a standard method for systematically comparing the content of communications (Kolbe and Burnett, 1991). For instance, it has been regularly used by researchers interested in analyzing contents related to advertisements, media stories, websites, social media conversations, and online reviews (Kassarjian 1977; Roznowski, 2003; Yun et al., 2008; Cheng and Ho, 2015; Lipizzi et al., 2016). Content analysis is appropriate for our study because it provides a systematic and objective way to compare content for a quite large sample of UGC across different social media (Smith et al., 2012). Before describing our coding procedure, we present the operationalization of the ten dimensions of our

³ Statistics were retrieved directly from the social media on February 2018.

theoretical framework. In particular, we strictly used the same operationalization used by Smith et al. (2012) for the six dimensions inherited from their study, and followed a similar approach for the additional four dimensions we introduce:

Promotional Self-Presentation: content was coded as “yes” if the author of the post was mentioned, referenced, or featured in the content in a way that was explicitly self-promotional; otherwise, it was coded “no”. For example, a video on YouTube where a user broadcasts himself/herself in foreground when tasting or talking about Coke or Pepsi was codified as “yes”, whereas a video where only the brand appeared in the video (e.g., a video showing free gadgets associated with the purchase of the branded product) was codified as “no”.

Brand Centrality: content was coded “yes” for brand centrality if the brand was the main focus of the content, rather than being peripheral; otherwise, it was coded “no”. For example, a user post on Coke’s Facebook page asking questions on the brand or a user picture where Pepsi consumption is emphasized was codified as “yes”, whereas a user video on YouTube broadcasting an event where the brand appears as a sponsor along with many others was codified as “no”.

Marketer-directed Communication: content was coded “yes” if a post was explicitly directed towards the brand (Coke and Pepsi, respectively); otherwise, it was coded “no”. For instance, a consumer reply to a PepsiCo tweet related to Pepsi brand or a post on Coke’s Facebook wall asking about product price increase was coded “yes”, while a user video on YouTube comparing the taste of the two brands was coded “no”.

Response to Online Marketer Action: content was coded “yes” if it was in response to a specific online marketer action; otherwise, it was coded “no”. For instance, a user post replying to Pepsi’s post on Facebook informing customers on how to obtain some discount was coded “yes”, whereas a user post on the same social medium expressing love for the brand was coded “no”.

Factually Informative about the Brand: content was coded “yes” if it contained objective brand information, such as a price or nutritional facts; otherwise, it was coded “no”. For example, a tweet reporting the price increase of Pepsi bottles was coded “yes” because it communicates a factual news, whereas a YouTube video where the user congratulates with Pepsi for the great marketing strategy was coded “no” because it expresses a personal opinion.

Brand Sentiment: content was coded as “positive”, “negative”, or “neutral” based on the overriding sentiment of the post. For instance, a user post on Facebook thanking Coke for a certain surprise was coded as “positive”. A user on Twitter complaining about the fact he paid a price for Coke bottle higher than advertised was coded as “negative”. A tweet reporting a news release related to

Pepsi was coded as “neutral”. Differently from Smith et al. (2012), we did not encounter ambiguous sentiment in our sample of UGCs. Therefore, we did not codify any content as “unclear”.

Response to Advertising Campaign: content was coded “yes” if it was in response to a large (online and/or offline) brand advertising campaign; otherwise, it was coded “no”. It is noteworthy that we distinguish between advertising campaigns and online marketer actions in the sense that the former refer to large campaigns promoting the brand through one or more channels (e.g., TV and/or Internet), whereas the latter refer to daily activities conducted by the brand within the given social medium, such as posting news, questions, coupons with the scope of directly interacting with social media users. For instance, a tweet where the user share a Coke showing the text of a song and the hashtag #ShareaSong is clearly a post in response to the famous advertising campaign ShareaSong launched by The Coca-Cola Company and thus was coded “yes”. In contrast, a Facebook post of a user stating she cannot sleep because she drank too much Coke was coded “no”.

Connection with Personal Experience: content was coded “yes” if the brand was associated with a personal experience or event of the user; otherwise, it was coded “no”. For instance, a picture on Facebook of a group of people drinking Pepsi for a friend’s birthday was coded “yes” because the consumption of the product was associated with a personal experience of the user, whereas simply sharing news or opinions about the brand on any of the three social media was coded “no”, given that the user content is not generated in relation to a personal life experience or event.

Virality: content was coded “yes” if it displayed clear features that favor viral diffusion in social media; otherwise it was coded “no”. Brand-related posts aimed at generating very strong common feelings or high-arousal, such as rage, stupor, or hilarity, among social media users, or those in the form of a set of questions or challenges (e.g., questions on user preferences about certain topics) to be circulated among social media users naturally possess characteristics of virality. For instance, a Facebook post asking users to answer a number of questions including their preference between Pepsi and Coke and then replicate the same questions to the given user’s friend network was codified as “yes”. Similarly, a tweet showing that Coca-Cola brand sponsored a rodeo where a horse was killed (in addition to showing the picture of the horse and Coca-Cola billboard behind, the tweet explicitly stated: “Have a ‘refreshing’ @CocaCola...and watch animals DIE!”) was coded “yes” as well. On the opposite, a Facebook post expressing the personal taste for any of the two brands was coded “no”.

Brand Recommendation: content was coded “yes” if the user explicitly promoted the brand to other social media users; otherwise it was coded “no”. For instance, a video on YouTube where the user clearly try to advise other users on the choice of Coke (e.g., using sentences like “Hey guys, Coca-

Cola Cherry is so good, you should try it...”) was codified as “yes”, whereas a Facebook picture showing an occasion where people drink Pepsi was codified as “no”.

Similarly to Smith et al. (2012), data coding was manually conducted by an independent coder, who had no knowledge of the research hypotheses, as well as by one member of the research team. The independent coder was given an explanation of the codes and also conversed with a second member of the research team to seek clarification after coding an initial portion of the sample. Intercoder reliability, as calculated using Perreault and Leigh's (1989) formula, was on average 0.8882 (the average is computed because there is one dimension, i.e., brand sentiment, which is not dichotomous), falling within the accepted range of 0.8-1.0. Any discrepancies in coding were examined and evaluated by a third party fully informed about the research project. Following coding, we took the same approach as in Smith et al. (2012) by tabulating category frequencies and assessing statistical significance of the differences across social media by means of Chi-Square tests, as reported in the next section.

4 Empirical findings

Table 1 illustrates the coding frequencies tabulated for each dimension and brand. Similarly to Smith et al. (2012), before testing for differences in brand-related UGC across the three social media we performed Poisson and log-linear analyses on the tabulated data in Table 1 to check for the existence of significant interactions between brand and social media site.⁴ As reported in the second column of Table 2, the Poisson regression models showed that the interaction between brand and social media site was not significant for all dimensions except for the variable *Response to Advertising Campaign*, for which this interaction was significant at the 5% level (6.607 (2), $p < 0.037$). Therefore, the two brands could be collapsed for further analyses for all dimensions except for *Response to Advertising Campaign*, for which, instead, the two brands needed to be analyzed separately. To check robustness of the results obtained via Poisson regressions, we also performed log-linear analyses, where the input variables are treated as factors rather than as predictors or response variables. Log-linear analyses serve to examine interactions among multiple categorical variables simultaneously. In our analysis, we considered the triple interaction among brand, UGC dimension and social media site. As reported in the third column of Table 2, the results of these analyses were consistent with those obtained using the Poisson regression, except for the dimension *Connection with Personal Experience*. Indeed, the results under log-linear analyses suggested collapsing the two brands for all dimensions except *Response to Advertising Campaign* (11.184 (2), $p < 0.004$) and *Connection with Personal Experience* (6.806 (2), $p < 0.033$). Given that

⁴ Before running Poisson regression models, we verified that our dependent variables (i.e., the ten dimensions) follow a Poisson distribution by means of the Kolmogorov-Smirnov test.

both regression models agreed not to collapse brands on the dimension *Response to Advertising Campaign*, we tested the differences in the user content related to this dimension across the three social media separately for the two brands. For the dimension on which the two models disagreed (i.e., *Connection with Personal Experience*), we followed the results derived from the Poisson regression models and tested the differences related to this dimension jointly for the two brands in order to have larger sample and thus ensure higher reliability of results.⁵ For all other dimensions, tests of how brand-related UGC differs across social media were conducted by collapsing the two brands since the two types of regression models were consistent with each other.

Following Smith et al. (2012), Chi-square tests were first conducted across the three sites for each dimension. If these tests yielded a significant Chi-square statistic (level of significance equal to 5%), we performed additional tests in order to establish which specific social media relationships (e.g., Facebook-Twitter, Facebook-YouTube or Twitter-YouTube) were contributing significantly to that statistic. If the initial Chi-square statistic across all three social media was shown to be insignificant, thus suggesting similarity among the brand-related UGC of Twitter, Facebook, and YouTube on that dimension, no further analyses were conducted. These results are summarized in Table 3. We next discuss these results for each dimension. Note that in the discussion below, for each dimension, we often associate the given social media channel with two numbers in parentheses (separated by comma). The first (second) number is the frequency of the given dimension related to Coke (Pepsi), as reported in Table 1. Table 5 compares our results with those in Smith et al. (2012).

Promotional Self-Presentation

Hypothesis *H1* states that brand-related UGC on YouTube (117, 117) is more characterized by self-presentation than the counterpart on Facebook (115, 130) and Twitter (81, 87). The Chi-square test in the second column of Table 3 shows that the distributions between the three sites are different ($p < 0.000$). The Chi-square tests conducted on each couple of social media (columns 3-4-5 of the same table) show that self-presentation is more present on YouTube and Facebook than on Twitter ($p < 0.000$ in both cases). This finding supports the view that the main focus in using Twitter is conversation rather than identity building (Kietzmann, 2011; Smith et al., 2012). More interestingly, our results show that no significant differences emerge between YouTube and Facebook ($p < 0.478$). Therefore, although YouTube is not dominated with regard to the dimension of self-presentation, hypothesis *H1* is only partially confirmed in our setting, whereas it was fully supported in Smith et al. (2012). This suggests that Facebook's considerable shift toward more visual features (Gupta, 2013; Vilnai-Yavetz and Tifferet, 2015; Pollard, 2017; Thompson, 2017), which naturally favor

⁵ At any rate, performing Chi-square analysis on this dimension separately for the two brands yields qualitatively similar results.

user self-presentation especially in a context of global brands such as Coke and Pepsi, may have diminished the gap with YouTube with regard to this characteristic of brand-related UGC.

Brand Centrality

The results for this dimension surprisingly contrasts with both hypothesis *H2* and the results obtained by Smith et al. (2012). Indeed, while this hypothesis claims brand centrality to be most frequent on Twitter and least frequent on YouTube (with Facebook somewhere in the middle), results in Table 3 show that this feature is equally likely across the three social media. As a matter of fact, similar occurrences of brand centrality were found in the UGCs of all three sites (see Table 1), thus yielding an insignificant Chi-square test in Table 3 (p-value above 5%). We argue that some changes occurred in the social media environment since Smith et al. (2012) may have contributed to eliminate the differences emerging across social media with regard to the UGC characteristic of brand centrality. Indeed, as discussed earlier, the more permissive character rules recently adopted by Twitter may have increased the space for other features of brand-related UGC not necessarily centered on brand in this social media site. Also, the increased user self-presentation in social media not originally focused on video sharing, as implied by their increased emphasis on visual features, may have also mitigated the cross-media differences in brand centrality of UGC. Finally, the different brand setting chosen for the analysis (cola market instead of clothing-apparel market) may have played a role. Indeed, the large notoriety of global brands such as Coke and Pepsi naturally softens cross-media differences, as the brand centrality characteristic is extremely frequent in brand-related UGC irrespective of the social media channel (as frequencies in Table 1 suggest).

Marketer-directed Communication

Hypothesis *H3* states that brand-related UGC on YouTube (17, 14) is less frequently directed to the marketer than the counterpart on Facebook (89, 41) or Twitter (114, 68). This hypothesis is statistically supported. The Chi-square test in the second column of Table 3 shows that the distributions between the three sites are different ($p < 0.000$). Specifically, the tests conducted on each couple of social media (columns 3-4-5 of the same table) show that marketer-directed communication is less likely to be present on YouTube than on Facebook ($p < 0.000$) and Twitter ($p < 0.000$). Moreover, the results reveal that brand-related UGC on Twitter is more characterized by direct communication to the marketer than that on Facebook ($p < 0.000$). This additional result is arguably due to the fact that Twitter's focus on sharing news, information, and opinions naturally stimulate consumers to ask questions and/or address their thoughts to Coke and Pepsi companies. It is also important to note that our results on hypothesis *H3* partially contrast with those obtained by Smith et al. (2012). Indeed, while we demonstrate full support to this hypothesis irrespective of the

considered brand (Coke or Pepsi), Smith et al. (2012) could not collapse the two brands (Lululemon and American Apparel) with regard to this dimension because the two brands approached social media differently. Specifically, Smith et al. (2012) found that the hypothesis *H3* was supported for Lululemon but not for American Apparel because of the more pro-active approach undertaken by the former brand (e.g., Lululemon much more frequently replied to social media users than American Apparel). In contrast, in our brand setting (Coke and Pepsi), there seem to be no differences in the approach toward social media at least for the dimension *Marketer-directed Communication*. The slightly different result suggests that the brand setting considered is likely to influence the role of social media in (brand-related) user content creation.

Response to online marketer action

Consistent with hypothesis *H4*, our analysis shows that UGC as a response to online actions carried out by the brand is less likely to occur on YouTube (23, 16) than on Facebook (34, 32) or Twitter (25, 34). The Chi-square test confirms this difference for both comparisons Facebook-YouTube ($p < 0.005$) and Twitter-YouTube ($p < 0.033$). The same test also shows that there are no significant differences between Facebook and Twitter with regard to this dimension ($p < 0.502$). Overall, these results are fully consistent with those obtained by Smith et al. (2012).

Factually Informative about the Brand

Results in Table 3 also fully support our hypothesis *H5* that factually informative brand-related UGC is equally frequent across the three social media. The Chi-square test indeed reveals no significant differences among three sites ($p < 0.140$). While hypothesis *H5* is supported, our results are in contrast with those obtained by Smith et al. (2012), who did not find support for the hypothesis because in their brand setting Facebook displayed less frequency of factual information about the brand as compared with the other two social media. Smith et al. (2012) explained their result as the consequence of the tendency of the brands analyzed in their study (in particular, Lululemon) to stimulate on Facebook conversations with users featuring more opinions than stated facts. We do not observe a different tendency across different social media with regard to this dimension in our brand setting. This different result may be the consequence of the increased orientation towards more visual features recently occurred in social media not exclusively focused on visual contents, which may have increased self-presentation and thus may have negatively impacted on the provision of factual information about the brand. As a matter of fact, Table 1 shows that in all three social media the great majority of contents do not report factual information. In addition, the different brand setting may have contributed to the emergence of the different result as well. Indeed, two global brands such as Coke and Pepsi are quite likely to stimulate a wide range of

conversations, encompassing both opinions and factual statements, without any significant difference across social media.

Brand Sentiment

This dimension identifies the prevalent sentiment (positive, negative, neutral) toward the brand in UGC. In our hypothesis *H6*, we theorize similar brand sentiment distributions through the three social media sites. However, our results yield a significant difference between YouTube and the other two social media ($p < 0.012$ and $p < 0.014$ in Facebook-YouTube and Twitter-YouTube comparisons, respectively), while Facebook and Twitter are shown to be similar with regard to this dimension ($p < 0.379$). Therefore, our hypothesis *H6* is overall not confirmed. To understand which sentiment (positive, negative, neutral) contributed to generate this difference, we ran Chi-square tests on each single category of sentiment. Results reported in Table 4 show that the occurrences of both negative and neutral brand-related UGC do not vary significantly ($p < 0.160$ and $p < 0.077$) across the three social media, whereas those related to positive contents are significantly different ($p < 0.006$). In particular, the positive sentiment is less likely observed on YouTube than on Facebook (frequencies 67 versus 91 for Coke and 66 versus 81 for Pepsi, respectively, and $p < 0.007$) and Twitter (frequencies 67 versus 91 for Coke and 66 versus 84 for Pepsi, respectively, and $p < 0.004$). We connect this difference to the fact that both Coca-Cola Company and PepsiCo are less active on YouTube than on Facebook or Twitter. This possibly induces less user attachment to the brand in this media channel, which in turn results in less positive sentiments. Our results differ from those obtained by Smith et al. (2012) as they found that brand sentiment differs across different social media sites for both brands but in a different manner (thus, fully contrasting with the hypothesis), whereas, in our brand setting cross-site positive sentiment differences emerge for both brands in a similar way.

Response to advertising campaign

Our results support the novel hypothesis *H7* only partially. Indeed, according to both Poisson and log-linear regression analyses, we report the results in Table 3 separately for the two brands. We find that the three social media are equally likely to stimulate UGC as a response to large (online and/offline) advertising campaigns carried out by Pepsi. In contrast, UGC responding to Coke advertising campaigns is less likely observed on YouTube than on Facebook (frequencies 41 versus 100, respectively, and $p < 0.000$) and Twitter (frequencies 41 versus 90, respectively, and $p < 0.000$). No differences are statistically observed between Facebook and Twitter for Coke ($p < 0.351$). Therefore, hypothesis *H7* is confirmed for Coke, but not for Pepsi. A possible explanation for the different result concerning Pepsi is that the number of contents posted by users as a response of

Pepsi advertising campaigns is significantly lower than that for Coke. Specifically, the cited Coke's famous advertising campaign Share a Coke has generated huge interest in social media users. Given that it is less time and effort consuming to use Facebook or Twitter rather than YouTube to produce content related to this type of campaigns, we could easily observe a difference between social media channels for Coke. In contrast, Pepsi advertising campaigns may not have generated equally high interest in social media users so that differences are less likely to be observed. This result also suggests that users do not respond to advertising campaigns across social media in the same way they respond to daily-based online marketer actions. Specifically, by comparing the results related to these two UGC dimensions, the behavior is the same for Coke, but not for Pepsi. In turn, this hints at the role of the different effectiveness of brand advertising strategies in social media.

Connection with Personal Experience

Our hypothesis *H8* states that it is less likely to observe UGC where the brand is associated with a personal experience on YouTube (75, 79) than on Facebook (130, 95) or Twitter (95, 90). The Chi-square test in Table 3 confirms this difference for both comparisons Facebook-YouTube ($p < 0.000$) and Twitter-YouTube ($p < 0.036$). Moreover, the comparison between Facebook and Twitter shows that Facebook is the social media most frequently utilized to create brand-related content in relation to a personal experience or event ($p < 0.009$). This novel evidence supports the argument that the effort and time necessary to produce content on YouTube is incompatible with the real-time nature of this UGC dimension. The increase in real-time and ubiquitous posting enabled by the huge diffusion of mobile devices has facilitated the sharing of content where brands are components of user personal experiences or events, e.g., Valentine day. Indeed, this type of content is naturally posted while the event is happening or right after its conclusion, in order to quickly immortalize the event and generate large and immediate participation of other users. Because of the effort and time requested to produce videos on YouTube, users naturally tend to prefer easier and quicker social media such as Facebook or Twitter when creating this type of content. In particular, Facebook is shown to be most preferred channel to this purpose because it has been conceived as a personal diary by users who are then willing to share their experiences including those where the brand becomes part of their life.

Virality

Our hypothesis *H9* states that it is less likely to observe UGC showing characteristics of virality on YouTube (47, 42) than on Facebook (38, 44) or Twitter (22, 17). However, surprisingly, it is Twitter the social media site where UGC less frequently displays features that can favor viral diffusion as compared with Facebook ($p < 0.000$) and YouTube ($p < 0.000$). This surprising result is

possibly due to the brand setting. The large notoriety of the two brands considered in our study may intrinsically induce viral diffusion, especially on YouTube. Indeed, we observed that in this channel a considerable number of videos related to Coke or Pepsi consist of reviews and challenges, as well as contents able to evoke high arousal emotions, which naturally possess characteristics of virality (Berger and Milkman, 2012). Similarly, on Facebook, brand-related posts starting with something like “Share with your Facebook friends...”, and thus calling for quick and large circulation among users, are very popular. On Twitter, at least with regard to the two brands, our observation suggests that users tend not to post content displaying these characteristics, thus failing to support our hypothesis.

Brand Recommendation

Finally, we do not find confirmation for our hypothesis *H10* on whether users are more likely to promote the brand on YouTube (41, 40) than on Facebook (40, 43) or Twitter (37, 46). Indeed, the Chi-square test shows similar presence of brand recommendation features across the three social media ($p < 0.981$). This result contrasts with our arguments grounded on MRT, which would generally indicate videos as a more effective tool to promote the favorite brand than simple written text or pictures. In this regard, the recent trends toward more visual features also on social media not originally focused on video sharing may have contributed to mitigate the cross-media differences related to the exhibition of brand recommendation features in UGC. Moreover, in our context of global brands such as Coke and Pepsi, we observe that the great majority of users on YouTube, i.e., the social media channel where videos are the core communication format, do not make videos to explicitly recommend brands to other users (as reported in Table 1). Rather, they provide reviews, challenges or opinions that do not possess explicit brand promotion features. As a result, no advantage of YouTube over Facebook and Twitter with regard to this dimension is observed.

5 Managerial implications and conclusion

In light of the important changes occurred in social media in recent years, we have revisited and extended the work of Smith et al. (2012) by examining how different online social media shape important characteristics of brand-related UGC. Specifically, we have increased from six to ten the number of characteristics that should be considered when studying the role of social media in brand-related user content creation. In this regard, we have contributed to increase the comprehension of this role by using more recent data collected from a new brand setting, namely the cola market, where only two big brands compete globally, i.e., Coke and Pepsi.

In support of the argument that the different brand setting as well as the changes occurred in the social media environment may have affected some characteristics of brand-related UGC, we obtain results that are only partially consistent with those in Smith et al. (2012), at least with regard to the six dimensions common to both studies. First, our results partially confirm the argument of Smith et al. (2012) that self-presentation attitude is higher in UGC available on YouTube. Indeed, in our setting, while UGC displays such characteristic more frequently on YouTube than on Twitter, no differences emerge between YouTube and Facebook. This may be the consequence of Facebook's shift towards more visual features (e.g., live video streaming), which emphasize user self-presentation. Moreover, the higher self-presentation of brand-related UGCs in these media does not jeopardize the brand centrality of these contents. As a matter of fact, differently from Smith et al. (2012), UGC displays statistically similar brand centrality in all three social media sites. This implies that the higher user attitude to self-presentation on YouTube and Facebook does not necessarily push the brand aside in UGC when brands with great global recognition are investigated. At the same time, because of the progressive reduction in the character limit, Twitter's technical design and focus on sharing news do not necessarily imply superior brand centrality. Our results also reveal that a feature distinguishing YouTube from the other two social media (especially from Twitter) is its lower efficacy in facilitating interactive communication between brand and users. This difference results in less frequent communication directed to the brand in this social media channel as well as lower number of user contents created as a response to online marketer actions. Specifically for UGC directed to the marketer, our results contrast with those in Smith et al. (2012) in that in our study the lower frequency of this type of UGC on YouTube is statistically observed irrespective of the brand, whereas in their study it was observed only for one brand. It is also noteworthy that we find support for the hypothesis that factually informative brand-related UGC is equally frequent across the three social media, whereas Smith et al. (2012) did not find support for this hypothesis as factually informative content was less frequently observed on Facebook in their study. With regard to the brand sentiment dimension, our findings become more similar to those in Smith et al. (2012) in the sense that they both do not confirm the argument that brand sentiment should be equivalent across the three social media.

Our findings also add to extant knowledge that UGC where consumers explicitly recommend the brand to other users is equally probable across the three social media. More interestingly, our results confirm that due to scarce compatibility between the effort required to create content on YouTube and the real-time nature of content connecting brands with user personal experiences, this type of UGC is less frequently observed on YouTube than on Facebook or Twitter. In contrast, surprisingly there is no evidence to support the argument that UGC on Twitter and Facebook more often

displays features that can favor viral diffusion as compared with that on YouTube. It is indeed Twitter the social media channel where less frequently brand-related UGC possesses virality features. Finally, results suggest that our argument that UGC as a response to (offline and/or online) advertising campaigns should be less likely observed on YouTube than on Facebook or Twitter is contingent upon the brand. That is, in our setting it holds only for Coke, thus suggesting that the choice of the brand advertising strategy may be crucial in determining the level of user chatter about brand advertising campaigns in social media.

Our findings offer several remarkable implications that can support marketers on how to design and manage their interactions with consumers in social media. First, we enlarge the number of dimensions characterizing brand-related UGC. Specifically, firms may also need to consider whether the given content is created as a response to a large (offline and/or online) advertising campaign, whether it links the brand with a user personal experience or life event, whether it features brand recommendation, and/or displays characteristics that favor viral diffusion. Second, our findings inform that how UGC characteristics vary across the main social media may not be consistent over time due to the very changing nature of social media dynamics. Moreover, the role of social media in shaping the characteristics of UGC is unlikely to be exactly the same when changing the brand/market setting, e.g., the cola market in the present study versus the clothing/apparel market in Smith et al. (2012). Third, our findings provide marketers with tailored and updated suggestions for each social media channel. Specifically, besides devoting attention to maintain a high level of interaction with social media users, marketers traditionally able to create successful advertising campaigns may consider focusing on Facebook and Twitter to monitor the impact of such campaigns as consumers exploit the easiness of these social media to comment real-time about popular ads while watching TV. Moreover, to increase the impact of their marketing actions and at the same time contain costs, firms should be aware of the fact that Facebook and YouTube are potentially effective social media channels to facilitate viral diffusion of brand-related content. For instance, they may consider promoting collaboration with Facebook users to spread the word about their brands through challenges, games, and contests that can quickly reach out a vastity of consumers, and with youtubers to create videos that can deeply touch the audience and thus rapidly increase visualizations. On the opposite, quite surprisingly, Twitter may be not very useful to the scope as users less frequently approach this channel to produce brand-related content that can potentially activate a viral diffusion process. Similarly, marketers should try to take advantage of users' pronounced attitude to include the brand in their personal stories and life events on Facebook, relying more on this channel (rather than on Twitter or YouTube) to implement communication strategies that are able to emotionally connect brands with consumers' everyday

life. Firms may also consider exploiting the culture of self-presentation on YouTube and Facebook by identifying and collaborating for brand promotion with those users able to build a strong identity and thus influence other users' behavior within the given channel. Finally, our findings suggest that all three social media seem to be equally suitable for marketers to implement brand strategies that can favor user brand promotion as well as the transmission of factual information.

The evidence provided by this research also offers important implications for social media platforms in such a changing environment. Indeed, understanding which (and how) user contents are generated and shared across different social media channels can offer interesting insights for the design of future systems that can be more appealing to both users and marketers. Over the culture, in fact, user behavior seems to be influenced by structural characteristics and networking features of the social media platforms. In this regard, our findings help disclose preliminary directions for social media platform development to adapt to the rapidly changing environment, at different levels: structural changes in the social media management, innovative features and add-ons on the social media platform, and modifications of policies and constraints. We have discussed some examples of such adaptation already discernable in the market. For instance, Twitter has progressively increased the character limit (currently the limit is 280 characters excluding videos and pictures) and has recently started considering to move toward more video-oriented communication and hopefully richest and more informative contents. Also, two years ago, Facebook introduced a new live streaming functionality, which is interpretable as a lean and effective way to timely share video contents with the personal network of users.

In this study we have addressed two of the future research directions identified by Smith et al. (2012) in the study of the relationship between social media and brand-related UGC: the extension of the number of UGC dimensions and the change of setting. Still, there are a number of issues that should be examined in future studies. For instance, the number of dimensions is still not exhaustive. Indeed, in our cola market setting, it would be interesting to study whether users tend to compare brands in their UGCs differently across social media. Furthermore, other different types of social media (e.g., collaborative projects, virtual social worlds, and virtual game worlds) could be investigated. To further validate our argument that the brand setting plays a role in the effect of social media on brand-related user content creation, it would be useful to test our hypotheses using a sample simultaneously encompassing data of different brand categories. Future work could also look at relating the characteristics of brand-related UGC to social media marketing strategies implemented by firms in different social media channels and then to marketing performance measures such as sales. Finally, future research aimed to understand how structural and/or policy change of social media platforms influences their performance is undoubtedly worthwhile.

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Table 1. Coding frequencies for Coke and Pepsi.

Code	Coke				Pepsi			
	Facebook	Twitter	YouTube	Total across sites (%)	Facebook	Twitter	YouTube	Total across sites (%)
<i>Promotional Self-Presentation</i>								
Yes	115	81	117	43%	130	87	117	46%
No	125	159	123	57%	110	153	123	54%
<i>Brand Centrality</i>								
Yes	176	177	150	70%	156	169	162	68%
No	64	63	90	30%	84	71	78	32%
<i>Marketer-directed Communication</i>								
Yes	89	114	17	31%	41	68	14	17%
No	151	126	223	69%	199	172	226	83%
<i>Response to Online Marketer Action</i>								
Yes	34	25	23	11%	32	34	16	11%
No	206	215	217	89%	208	206	224	89%
<i>Factually Informative about the Brand</i>								
Yes	53	57	55	23%	39	38	60	19%
No	187	183	185	77%	201	202	180	81%
<i>Brand Sentiment</i>								
Positive	91	91	67	35%	81	84	66	32%
Negative	23	24	30	11%	31	43	44	16%
Neutral	126	125	143	54%	128	113	130	52%
<i>Response to Advertising Campaign</i>								
Yes	100	90	41	32%	43	39	35	16%
No	140	150	199	68%	197	201	205	84%
<i>Connection with Personal Experience</i>								
Yes	130	95	75	42%	95	90	79	37%
No	110	145	165	58%	145	150	161	63%
<i>Virality</i>								
Yes	38	22	47	15%	44	17	42	14%
No	202	218	193	85%	196	223	198	86%
<i>Brand Recommendation</i>								
Yes	40	37	41	16%	43	46	40	18%
No	200	203	199	84%	197	194	200	82%

Table 2. Brand x Site Interaction Effects: Poisson Regression and Log-Linear Analysis.

Content category	Poisson Regression 2-Way Interaction (Brand*Site) (df), p- value	Log-linear Analysis 3-way Interaction (Brand*Site*Content Category) (df), p- value	Decision
<i>H1: Promotional Self-Presentation</i>	0.451 (2), p<0.798	0.943 (2), p<0.624	Collapse brands
<i>H2: Brand Centrality</i>	1.592 (2), p<0.451	5.063 (2), p<0.080	Collapse brands
<i>H3: Marketer-directed communication</i>	2.381 (2), p<0.304	3.902 (2), p<0.142	Collapse brands
<i>H4: Response to Online Marketer Action</i>	2.665 (2), p<0.264	3.003 (2), p<0.223	Collapse brands
<i>H5: Factually Informative about the Brand</i>	3.564 (2), p<0.168	4.396 (2), p<0.111	Collapse brands
<i>H6: Brand Sentiment</i>	0.823 (2), p<0.663	1.345 (4), p<0.854	Collapse brands
<i>H7: Response to Advertising Campaign</i>	6.607 (2), p<0.037	11.184 (2), p<0.004	Do not collapse brands
<i>H8: Connection with Personal Experience</i>	3.390 (2), p<0.184	6.806 (2), p<0.033	Collapse brands
<i>H9: Virality</i>	1.281 (2), p<0.527	1.482 (2), p<0.477	Collapse brands
<i>H10: Brand Recommendation</i>	0.607 (2), p<0.738	0.736 (2), p<0.692	Collapse brands

Statistical significance p-value<5%

Table 3. Between Site Differences in Brand-Related UGC: Chi-Square Analyses.

Content	Total (df), p-value	Facebook-Twitter (df), p-value	Facebook-YouTube (df), p-value	Twitter-YouTube (df), p-value
<i>Promotional Self-Presentation</i>				
Total	29.206 (2), p<0.000	25.195 (1), p<0.000	0.504 (1), p<0.478	18.642 (1), p<0.000
<i>Brand Centrality</i>				
Total	5.663 (2), p<0.059	-	-	-
<i>Marketed-directed Communication</i>				
Total	135.117 (2), p<0.000	12.840 (1), p<0.000	73.142 (1), p<0.000	137.570 (1), p<0.000
<i>Response to Online Marketer Action</i>				
Total	8.106 (2), p<0.017	0.451 (1), p<0.502	7.795 (1), p<0.005	4.546 (1), p<0.033
<i>Factually Informative about the Brand</i>				
Total	3.930 (2), p<0.140	-	-	-
<i>Brand Sentiment</i>				
Total	12.440 (4), p<0.014	1.943 (2), p<0.379	8.797 (2), p<0.012	8.472 (2), p<0.014
<i>Response to Advertising Campaign</i>				
Coke	38.129 (2), p<0.000	0.871 (1), p<0.351	34.956 (1), p<0.000	25.208 (1), p<0.000
Pepsi	0.980 (2), p<0.613	-	-	-
<i>Connection with Personal Experience</i>				
Total	22.157 (2), p<0.000	6.812 (1), p<0.009	21.977 (1), p<0.000	4.382 (1), p<0.036
<i>Virality</i>				
Total	24.518 (2), p<0.000	17.485 (1), p<0.000	0.349 (1), p<0.555	22.536 (1), p<0.000
<i>Brand Recommendation</i>				
Total	0.039 (2), p<0.981	-	-	-

Statistical significance p-value<5%

Table 4. Between Site Differences in Pepsi-Related UGC Sentiment: Chi-Square Analyses.

Brand Sentiment for both brands	Total (df), p-value	Facebook-Twitter (df), p-value	Facebook-YouTube (df), p-value	Twitter-YouTube (df), p-value
Positive	10.294 (2), p<0.006	0.041 (1), p<0.840	7.309 (1), p<0.007	8.433 (1), p<0.004
Negative	3.666 (2), p<0.160	-	-	-
Neutral	5.137 (2), p<0.077	-	-	-

Statistical significance p-value<5%

Table 5. Summary of hypotheses and results.

Hypotheses	Results in Smith et al. (2012)	Results in the present study
<i>H1: Promotional Self-Presentation higher on YouTube.</i>	Supported.	Partially supported. No differences between YouTube and Facebook.
<i>H2: Brand Centrality highest on Twitter and lowest on YouTube.</i>	Supported.	Not supported: Brand Centrality equal across social media.
<i>H3: Marketer-directed communication lowest on YouTube.</i>	Partially supported: Hypothesis holds only for Lululemon brand.	Supported. Also, it is highest on Twitter.
<i>H4: Response to Online Marketer Action lowest on YouTube.</i>	Supported.	Supported.
<i>H5: Factually Informative about the Brand equally likely across social media.</i>	Partially supported: Factual information equally likely for Twitter and YouTube.	Supported.
<i>H6: Brand Sentiment equal across social media.</i>	Not supported.	Not supported.
<i>H7: Response to Advertising Campaign lowest on YouTube.</i>	-	Partially supported: valid for Coke, but not for Pepsi.
<i>H8: Connection with Personal Experience lowest on YouTube.</i>	-	Supported. Also, it is highest on Facebook.
<i>H9: Virality lowest on YouTube.</i>	-	Not supported: highest on Facebook and YouTube, lowest on Twitter.
<i>H10: Brand Recommendation highest on YouTube.</i>	-	Not supported: Brand Recommendation equal across social media.