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KNOWLEDGE IN ACTION

Faculty of Business Economics
Master of Management

Master's thesis

Impact of category-related content and brand-related content on brand post engagement

Imane Serghini
Thesis presented in fulfillment of the requirements for the degree of Master of Management, specialization International Marketing Strategy

SUPERVISOR :

dr. Lieve DOUCE

2019
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Disclaimer

This master thesis was written during the COVID-19 crisis in 2020. This global health crisis has had an impact on the (writing) process, the research activities and the research results that are at the basis of this thesis. Especially the data collection method of study 1. We had to use an inter-observer agreement test to correctly categorize the tweets. As it was not possible to have a physical gathering with a group of observers, we replaced it with an online survey to decide on the categorization and an online meeting to discuss the elements to consider in order to judge.

Preface

The dissertation herein was written after conducting a research related to the topic of "successfully managing online social networks in international business". The research was conducted under the supervision of dr. Lieve Doucé from the department of Marketing & Strategy at the University of Hasselt, between September 2019 and June 2020. The submission of this dissertation and a successful defense of the research and its findings will result in the obtention of the degree "Master of Management: international marketing strategy".

Conducting the studies of this research and reporting on them to write this dissertation would not have been possible without the support of people whose contribution must be acknowledged. I genuinely thank my supervisor dr. Lieve Doucé for devoting her time and effort to assist me approach my topic, put together the research design of my studies and for constantly providing thorough feedback that often pointed to overlooked elements and helped me move forward.

I would also like to thank the professors of other courses in my master program, the professors of marketing research methodology in particular, for their efforts to teach us logical reasoning that is necessary in academic discussions and which I made use of in every step of the process. Moreover, the efforts of all the administrative and academic staff of Master of Management are appreciated especially as they had to double their efforts to reach us digitally and to make sure we get an education experience of a good quality in the context of the COVID-19 crisis.

I appreciate the support of friends who encouraged me and who took the time to answer the surveys and helped me get more respondents by sharing them with their own friends.

Finally, I would like to express my sincere gratitude to my family for their emotional support and encouragement along the way.

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Introduction

The advent of social media revolutionized the firm-customer relationship. Customers are no longer passive receivers of companies' messages. When they reach out to a company, they expect it to listen to them and reply appropriately (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). With the increasing use of social media worldwide, an estimated number of 2.65 billion people used social media in 2018 (Statista, 2019), both marketers and researchers are interested in formulating the right marketing strategies, discovering appropriate ways of knowledge sharing and disclosure, and understanding the issues related to social media platforms (Debreceny, Wang, & Zhou, 2019). Social media marketing is now preferred by companies to traditional marketing channels (Devereux, Elise, Grimmer, Louise, Grimmer, Martin 2019). The reason is that it comes with less spendings but most importantly social media has a better effect. Consumers do not only interact with the brand but also with each other. Thus, they can share the experiences they have with the brand and provide trustworthy information (Devereux, Elise, Grimmer, Louise, Grimmer, Martin 2019). The influence is so effective to the point that a mere interaction of "Liking" when it is displayed to friends, it catches their attention and would push them to behave similarly (Majid et al. 2019).

Many studies attempted to understand what drives consumer engagement with brand communication on social media. Some of previous studies focused on the message (e.g Devereux, Grimmer, & Grimmer, 2019; Majid, Lopez, Megicks, Mun Lim, & Wai Mun Lim, 2019; Sigurdsson et al., 2019), and some others focused on the social media user, (e.g Giakoumaki & Krepapa, 2019; Nikolinakou & Phua, 2019). Research related to the message identified different categories of factors that influence the message effectiveness in receiving high levels of consumer engagement. Majid et al., 2019 made the distinction between three determinants of message: Interactivity, credibility and infotainment; Devereux et al., 2019 talked about business-related and non-business related and Sigurdsson et al., 2019 categorized the determinants according to whether they are related to the design or the content. All of these categories of determinants put the brand forward and promote the posting brand. Although it is natural to invest in promoting the brand, it might also be important to promote the product category to which the firm's products or services belong. To investigate this, we chose to analyse brand posts of several diamond jewelry firms because in this industry, big brands have invested in promoting the category of diamond (Sanderson, Henry, FT, 2017).

The brand community of customers and other consumers interacts with brand posts in different forms and different levels of intensity. These interactions represent consumer engagement on social media (Brodie et al, 2013). According to Dessart et al., 2015 (Menon et al., 2019), brand post engagement is determined to a large extent by content. Thus, we think it's interesting to focus on this variable of content to demystify how it can be best used by managers.

Consequently, this research aims to explore and explain the impact of two specific types of content of social media posts: content related to the brand vs. content related to the product category, on brand

post engagement to conclude which type of content drives higher levels of engagement for diamond jewelry companies. Therefore, we will answer the following research question:

 Do brand posts with category-related content result in high brand post engagement on social media?

Sub-research questions:

- What is category-related content & brand-related content?
- Does category-related content lead to higher brand post engagement?
- Is there any influence between these two types of content?

This paper is organized as follows. We start by laying the theoretical foundations of this research (social media marketing literature and advertising literature). Then, we present the research context by introducing the diamond and jewelry industry. Afterwards, a brief literature review about brand post engagement and its influencing factors is presented to define the theoretical framework of the research. Regarding the research design, it consists of two studies. For each study we report its own research design, the data collection plan, the data analysis and the results. Lastly, we conclude by presenting the main findings and their managerial implications, the contribution to the theory and we end up by suggesting paths for future research based on the limitations of this research.

Underpinning theories

Social media marketing

The increasing use of social media platforms among consumers made it become inevitable for firms to leverage the potential of these platforms. The company's presence on social media is beneficial for brand awareness but also for lower levels of the marketing funnel (Labrecque, Swani, & Stephen, 2020). For this reason, marketers try to maximize consumer engagement on these virtual touchpoints with the aim of influencing purchase intentions. The idea is that the more a user is engaged on social media, the higher the chances are that the user will spread positive word-of-mouth (WOM). Particularly on social media platforms, the effect of WOM is amplified as user posts appear in the feed of the user connections and because the sharing action extends its reach (Kumar & Mirchandani, 2012).

That is on the one hand, on the other hand, a direct effect on sales is also possible to observe on social media platforms thanks to their newly added buying features (Labrecque et al., 2020). In fact, these features allow consumers to make a purchase directly from a post. In a study on purchasing from a social media post, 65% of respondents reported buying directly from a social media post (eMarketer, 2017). Therefore, companies are trying to find ways to incorporate social media into their integrated marketing strategies. This is actually something that depends on the company's ability to resonate better with its online audience. Individuals have diverging characteristics and can be segmented and targeted accordingly. To do so, companies are encouraged to take into consideration human values and to understand their effect on social media consumer engagement actions (Nikolinakou & Phua, 2019).

Research in social media marketing still attempts to decipher what drives the consumer to act, through showing engagement actions such as likes, comments and shares, or not to act (Labrecque et al., 2020). This research builds on the model of Menon et al. (2019) about consumer engagement with brand posts (Menon et al., 2019) and attempts to enrich it with the introduction of two new variables. Menon et al. 's (2019) model is itself a new proposed version of the brand post engagement framework initiated by De Vries et al. (2012). The authors believe this model provides a structure for future developments. It represents the possible drivers for brand post popularity, namely: The design variables that are vividness and interactivity (Menon et al., 2019 & De Vries, Gensler, & Leeflang, 2012); In addition to the content variables that we introduce, brand-related content and category-related content; And control variables, i.e time, length of the post and fans number (Menon et al., 2019).

Menon et al., (2019) classified the content as informative, entertaining, promotional, social, and remunerative. In this research, we hypothesize that for the diamond industry, and probably also other industries that are similarly affected by major threats, a different perspective is needed with respect to content. A macro-perspective that's in line with the consumer concerns which are not only brand specific.

Generic advertising

In order to increase its sales, a company can either invest in expanding its own market share or influencing the sales volume of the product category. The latter is referred to in advertising as generic advertising. It's a type of advertising that affects consumers' interest and beliefs about the product category, hence it drives the primary demand to the detriment of competing product categories (Frank M, Anand, Ashutosh, & Sethi, 2005). For instance, a tea company should realize that its real competitor is not another tea company but a coffee company. For a butter company, it is rather competing with companies from the margarine industry… etc (Friedman, Hershey H; Friedman, 1976). This advertising approach emphasizes the benefits of the product at a generic level away from bringing in the brand. Which makes it more customer centric as it focuses on the customer needs and expectations instead of touting the brand. The company, then, adopts a broader perspective and doesn't fall in what is referred to as advertising myopia (Friedman, Hershey H; Friedman, 1976). Furthermore, brand advertising is playing in individually to expand one's own market share. Thus, the soonest retaliation from one of the players will cause the market share to shrink back to the level of the prior market share or even lower than that. Thus, the best outcome possible from this competitive advertising is keeping the status quo (Friedman, Hershey H; Friedman, 1976). However, with generic advertising, the outcome is much better as it does not come with a negative impact on the other players. As a matter of fact, promoting the generic product leads to an increase in the overall market size by attracting new consumers, which implies that all the players are going to perceive the supplement in the sales volume, while their shares remain unchanged because the market structure doesn't change, only the volume does (Friedman, Hershey H; Friedman, 1976).

Having said that, the generic nature of this advertising type makes it also beneficial to competing firms even if they do not contribute to the generic advertising campaign. Thus, what actually happens is that generic advertising brings spillover benefits and a firm who invested finds itself in a disadvantageous position with respect to one who did not invest and yet still benefits from generic advertising (Friedman, Hershey H; Friedman, 1976). Therefore, generic advertising is not a straightforward choice because of the problem of free riding.

Generic advertising can be effective to use in the following situations: 1) to support the launch of new products. Consumers won't know how to use a new product nor how it can benefit them. Therefore, it pays to use informational campaigns to educate consumers and raise awareness about the new product. 2) to enhance penetration. Generic advertising can also be used for products in a mature stage by promoting new uses to enhance their market penetration. 3) to promote commodities such as praising tea against coffee, butter against margarine, raisins against industrial snacks…etc (Frank M, Anand, Ashutosh, & Sethi, 2005). Generic advertising is specifically necessary for the length of the product life cycle. Companies should use enough generic advertising to obtain an expanded demand before switching to brand advertising. Otherwise, it can cause the product life cycle to shorten (Frank M, Anand, Ashutosh, & Sethi, 2005). To cite as examples, the traditional car industry is threatened by electric cars,

the real estate start-ups are shaking the real estate industry with their commission-free business model and conventional food is challenged by organic food. All these industries have to collaboratively invest in generic advertising to help extend their product life cycle (Lin & Krishnamurthy, 2017). As to the present research, the logic behind generic advertising is relevant for the diamond jewelry industry as the threat of synthetic diamonds is looming large.

Research context

The diamond & jewelry industry challenge

For many years, the diamond jewelry industry has relied on the scarcity of diamond. De Beers Group, a major diamond mining company that was controlling 90% of the diamond supply, used to enhance the diamond scarcity by following a selective supply policy to restrict diamond sales and keep prices at a high level. Now disruptive innovation is shaking the industry making diamonds massively produced in tech laboratories (Rarick, Charles A; Angriawan, 2017).

The challenge facing the diamond industry is the change in consumer behavior and the need to become relevant for the new generations of end consumers. In fact, Millennials and Gen Z are environmentally-conscious consumers who seem to have found in synthetic diamonds the perfect alternative. Knowing that diamond mining is considered irresponsible because of its environmental impact, buying mined-diamond ineluctably carried this heavy stigma. While synthetic diamonds are laboratory-grown, they are not any less sparkly. A report published by the International Grown Diamond Association (IGDA) explains that the preference for lab-grown diamonds over mined diamonds is due to the fact that "a consumer can get a larger, better quality lab-grown diamond for the same price as a smaller mined diamond" (Business Wire, 2019). So, more than being environmentally-friendly, they are budget friendly.

The industry growth levers

A recent warning from the US Federal Trade Commission (FTC) to lab-grown diamonds brands for not clearly stating the way their stones are made, comes to make the difference between natural diamonds and synthetic diamonds more explicit. Furthermore, producers of lab-grown diamonds replicate the earth process of heat and pressure to make the diamonds. Therefore, the FTC advises to stop deceiving consumers using eco-friendly labels (Hume, 2019).

Another positive element for the industry is the fact that diamonds are considered as "Veblen goods". They are a type of goods that are more desirable when their price is high (Rarick, Charles A; Angriawan, 2017). Which suggests that by correctly marketing natural diamonds to the right consumer, natural diamond brands would be able to mitigate the threat of synthetic diamonds.

Diamond jewelry brands have to multiply their marketing efforts knowing that the advertising message is as important as targeting. A study revealed that the current generations of consumers are shifting from buying diamond jewelry not because of low spending power but because they prefer other competing industries such as travel, recreation, aesthetic medicine, real estate (Vladimir Malakhov, 2017). Besides, 75% of participants in the same study agreed that diamonds should be promoted as a

category of goods (Vladimir Malakhov, 2017). Furthermore, Olya Linde, partner at Bain, stated that "Diamond jewellery is a type of purchase rather than a particular brand", therefore concerted marketing would be more effective than when carried by each brand independently (Sanderson, 2017).

The diamond industry growth potential is deemed to be supported by Mil-len-ni-als and Gen Z. There's three reasons why they are essential. Firstly, they are considerable in size (larger than Gen X and baby boomers). Secondly, they have an increasing purchasing power. Thirdly, the largest share of diamond jewelry demand is driven by Millennials and Gen Z in four largest diamond consuming countries (De Beers Group, 2018).

In order to tap into this great market potential, companies have already made the choice of engaging with consumers from Millennials and Gen Z consumers. generation Y and Z on social media networks. The JCK's 2019 State of the Jewelry Industry Report states that 46% of manufacturers, designers and wholesalers in the jewelry industry consider connecting with customers via social media as their top digital strategy (Rapaport, 2019). With the concerns of these consumers in mind, companies have to target them with content addressing those environmental and social concerns which are not brand specific but related to the product category itself.

Theoretical framework

Brand post engagement

Consumer engagement is the consumer's psychological state related to the interaction and experience he has with a brand (Brodie, Ilic, Juric, & Hollebeek, 2013). It is also addressed in social media. As social media networks are interactive websites, they allow consumers to behaviorally manifest their engagement with brands' marketing effort, for example through sharing and creating user-generated content.

Consumer engagement with brand posts is defined in terms of consumer interactions with brands' content (Labrecque et al., 2020). These interactions are, generally speaking, the action of liking, commenting and sharing. However, they might take different forms depending on the social media network. For instance, the share option is available on Facebook and LinkedIn but not on Instagram, and on Twitter we talk about retweet instead. Every form of engagement consists of a different level of engagement intensity (Devereux et al., 2019). These different levels of intensity lead to different consequences, namely: loyalty, satisfaction, empowerment, connection, trust, and commitment (Brodie et al., 2013).

Although all social media platforms offer the possibility for users to connect or follow brands, such connection has little to no value. What counts is when users interact with brands' communication (Labrecque et al., 2020). As a matter of fact, the purchase intention of active consumers who engage with a brand's communication on social media can be higher than passive consumers, consumer engagement on social media is an indicator of the success of a brand's marketing efforts (Majid, Lopez, Megicks, Mun Lim, & Wai Mun Lim, 2019).

In this study, we do not focus on consumer engagement with all brand marketing activities on social media, we only investigate brand post engagement which captures the interactions of consumers with the company's posts on social media (Devereux et al., 2019). As the studies we conducted are on posts extracted from Twitter, post engagement is measured by the number of likes, comments and retweets (Menon et al., 2019).

Brand-related content

Diamond jewelry companies compete against each other to grow their share of the demand for diamond jewelry. Their marketing effort supports this mission by promoting the uniqueness of their brands in the eyes of consumers, uniqueness in the quality they offer, in their social or environmental responsibility, in their efforts to trace back the origin of their diamonds...etc. This type of advertising is referred to in the literature as brand advertising because it has an impact on the brand market share (Frank M, Anand, Ashutosh, & Sethi, 2005). Likewise, brand social media posts whose impact is on the brand's market

share have a type of content that is labelled in this study as "brand-related content". This type of content includes: information about the company/brand and/or its products, i.e informative content, entertaining content, deals and promotions, i.e promotional content, questions stimulating activity among users i.e social content, and contests and offers i.e remunerative content (Menon et al., 2019). All these types of content are expected to drive consumer engagement with the post except promotional content because it is similar to advertising which is not what users expect to see on brand pages (Menon et al., 2019).

Category-related content

The diamond industry has been impacted for a long time by several threats, namely: blood diamonds, synthetic diamonds, environmental and social responsibility. This impact is reflected in the diamond relative demand within the luxury market (Matteo Butera, 2015). Increasing the diamond share in the luxury pie can't be achieved if every company were to promote the advantages of its own brand. As long as consumer concerns are the result of threats facing the whole industry and not only specific brands, effectively tackling them would require referring to the inherited traits of diamonds and the diamond industry. Generic advertising was the strategy that De Beers adopted earlier when it used to have the quasi-monopoly in rough trading (Matteo Butera, 2015). In relation to generic advertising uses that we discussed above, De Beers advertising corresponds to introducing products' new uses. In this case, De Beers introduced new occasions for which diamond can be chosen. Later, the World Federation of Diamond Bourses (WFDB), along with reputable institutions, created the World Diamond Mark Foundation for the sole purpose of growing the desirability of diamonds vis-à-vis consumers (Krawitz, 2015). The generic marketing efforts of these institutions flow in the sense of building the perception of natural diamonds as being the universal symbol of eternal love (Matteo Butera, 2015) and educating the generations about diamond being part of the world heritage (Vladimir Malakhov, 2017). Generic advertising is defined as advertising that has an impact on the category sales (Frank M et al., 2005). In the literature, it is confirmed that consumer perceived value towards a product is enhanced by exposure to generic advertising but not by exposure to brand advertising (Salois, Matthew J; Reilly, 2014). Therefore, building on this advertising practice, brand social media posts, with what we are calling in this study, "category-related content", i.e a content following this logic of promoting diamond as a category in competition with other luxury categories are labeled as "generic posts". This type of content is supposed to have the following impact:

H1: Category-related content leads to higher brand post engagement than brand-related content

Furthermore, during the outbreak of mad cow disease, concerns about food safety were looming large and the beef industry was suffering as prices plummeted. A study conducted in the US confirmed that generic beef advertising has a significant positive impact on food safety concerns of the US consumer (Messer, Kaiser, Payne, & Wansink, 2011). Therefore, we suppose that generic posts (with category-related content) alleviate consumer concerns surrounding diamonds and by doing so they make

consumers more receptive to posts with brand-related content. This would also be an implication of the indirect effect mentioned in the definition that we suggested.

H2: If brand-related content is accompanied by category-related content it will lead to more brand post engagement than if it is not accompanied by category-related content.

Vividness

Besides content, another way to stimulate consumer engagement on social media is through post design characteristics. Design is what would stop the consumer on social media to consume the content. Hence, vivid posts stand out from the crowded feed of the user (De Vries et al., 2012). More than mere attention catcher, vividness has levels as it is related to media richness. The more senses you need to process the post, the higher the richness of this media is (De Vries et al., 2012). As a video is engaging in the sense that it necessitates both hearing and sight, it is also engaging in the behavioural sense and hence would translate on social media in terms of likes, comments and share (Luarn, Lin, & Chiu, 2015). This was supported by the findings of the study conducted by (De Vries et al., 2012). However, other studies found that posts with a video (high vividness level (Table 1)) receive lower engagement level than posts with a photo (low vividness level (Table 1)) because they necessitate longer time to process unlike photos that are processed with less effort (Luarn, Lin, & Chiu, 2015). A study conducted on apparel retail brands also confirmed this by analyzing post engagement with posts for which pictures were predominantly used (Schultz, 2016). Further studies, whether on facebook (Cvijikj & Michahelles, 2013) or Twitter (Menon et al., 2019) confirmed that a low level of vividness is related to enhanced post engagement. Notably on Twitter, because of its unique nature favoring conversations and the spread of news, pictures are more relevant in such context than videos (Menon et al., 2019).

H3: Low vividness leads to a higher level of brand post engagement compared to high vividness.

Interactivity

Interactivity is also a design characteristic. It is defined as "the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized" (Liu, Yuping; Shrum, 2002). According to this definition, three dimensions of interactivity have been specified: 1) it involves two or more communication parties which makes it a two-way communication; 2) beyond acting on each other, the communicating parties can also act on the communication medium, which suggests that the consumer has the control of interacting or ignoring the message; 3) synchronicity which implies that inputting and reception are instant, thus brands are able to respond in a timely manner (Liu, Yuping; Shrum, 2002). In the light of these dimensions, a post featuring a text is not interactive at all. It is indeed a synchronized two-way communication that the consumer can choose to interact with or ignore. However,

it doesn't urge the consumer to react while a question or a contest does push the consumer to take an action (De Vries et al., 2012). In the same regard, a study demonstrated that posts containing a question or quiz (high interactivity (Table 1) are more likely than posts containing call to act or contest (medium interactivity (Table 1)) to push people to interact through likes, comments or shares (Luarn, Lin, & Chiu, 2015). Likewise, highly interactive posts are preferred to low (posts with link or poll (Table 1)) and non-interactive posts (posts containing text only (Table 1)) (Luarn, Lin, & Chiu, 2015). In contrast, another study found that low interactivity is believed to yield results in terms of consumer engagement (Cvijikj & Michahelles, 2013). These diverging results are due to the use of different operationalizations and interpretations (Cvijikj & Michahelles, 2013). For this study, we suppose that rather none of the interactivity levels is related to post engagement because this was the finding of a study that was conducted on Twitter (Menon et al., 2019).

H4: no interactivity leads to a higher level of brand post engagement compared to any other interactivity level

Table 1: Operationalization of vividness and interactivity (De Vries et al., 2012)

	Vividness	Interactivity
No	None (text only)	None (text only)
Low	Picture	Link; voting
Medium	Event	Call to act; contest
High	Video	Question; quiz

Figure 1 showcases the role of the variables, presented above, as factors influencing the level of brand post engagement and sketches the hypotheses we set for this research.

Figure 1: the hypothesized conceptual model
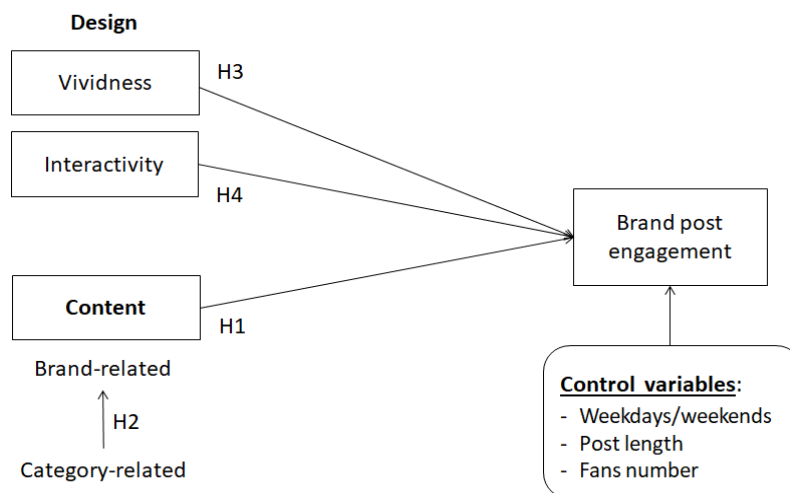
Study 1

Research design

We collected brand posts from the Twitter profiles of three different brands. As the threat of synthetic diamonds and consumer concerns about the environmental impact of mining operations are topical issues, we chose to review posts published recently during the last six months before this study was conducted (from 01/09/2019 to 29/02/2020).

We examined the posts and labeled their content as either brand-related or content-related. Then, we compared consumer engagement of one category against the other category with characteristics of posts taken into account.

As this research focuses on studying content, we chose Twitter as it is a text-oriented platform. As a matter of fact, Twitter is designed in a way to facilitate conversation around hot topics and does not distinguish between a business or an individual. All Twitter accounts are user accounts (Debreceny, Wang, & Zhou, 2019). Users who go on Twitter expect to read text and would pay more attention to the content. Thus, it is a good place to study brand post engagement as consumer engagement will be driven to a large extent by content.

Regarding the choice of brands, the only criterion we set is that the brand should be a pure diamond jeweler. Which means that the renowned names in jewelry (Cartier, Tiffany & Co, Chopard… etc.) are not included because they often offer other luxury goods (leather goods, fragrances, eyewear…etc), the sample of posts they would offer is not only about diamond jewelry. Besides, they are not interesting for the purpose of this study because what they promote the most on social media is the prestige of their brand and jewelry house, a large part of their posts would be labeled in our study as brand-related content and hence would allow for only few possibilities to observe category-related content.

Forevermark, founded in 2008, is a brand of the subsidiary De Beers Group which was among the firsts to use generic advertising. We think it's interesting to examine its content strategy on its Twitter profile as it's more likely that they would follow the same logic for posting on social media. Next to Forevermark, Blue Nile and James Allen, founded in 1999 and 2006 respectively, were selected on an arbitrary basis.

This study answers two of sub-questions behind this research:

- By exploring the content of brands' tweets, we got acquainted with what we called category-related content and brand-related content. Therefore, we were able to suggest a definition for the new suggested type of content, the category-related content.
- After being able to distinguish between the two types of content based on the definition that we were able to formulate, we got to the point where it became possible to study the impact of these two types of content on brand post engagement and compare between them.

Data collection plan

- **Target population**

Posts of diamond jewelry brands published on their Twitter profiles: its own tweets and its replies to other users (retweets are left out)

- **Sample**

Tweets and replies of the brands Blue Nile, James Allen and Forevermark published during the period from 01/09/2019 to 29/02/2020 (Appendix 1).

- **Method**

We extracted the posts from the brands' Twitter profiles using Twitter Archiving Google Sheet (TAGS). Every post was considered, excluding retweets as they are posted by other users.

In order to categorize the tweets according to the type of their content, we used an inter-observer agreement test on a random sample of tweets. We submitted 9 tweets (≈3% of the total number of the tweets studied) to seven persons. They were asked to check the right box when they think that the content of the tweet has an impact on the consumer's attitude towards Forevermark's diamonds (brand-related content) or an impact on the consumer's attitude towards diamonds in general (category-related content). We started by asking 5 people to independently give their evaluation. We checked the results and found that for some tweets the opinions were 50/50. Therefore, we asked two more people to give their independent evaluation to eventually reach the agreement of the majority on the categorization.

Besides, we had a discussion in a group of three. Following that discussion, it appeared that there was a problem with recognizing category-related content and agreeing on this opinion due to the presence of a branded photo or video. We, then, agreed that we should focus only on the text and not consider all the elements of the tweet as this is an analysis of the content. Consequently, we could eventually get to a consensus.

- **Data cleaning**

Removal of unwanted observations: TAGS provides some unnecessary data that we had to remove because they do not represent any of the variables in our model. (example: in case of replies, the user that the brand replied to). We also deleted data of years that are not within the scope of this study to only keep data of the period going from 01/09/2019 to 29/02/2020. Retweets were also among the deleted data.
Handling missing data: the Google sheet template provided by TAGS does not include all the required data, namely data related to vividness, interactivity and the metrics of consumer engagement. That's why we had to observe the posts to manually input the missing data: number of likes, number of replies and number of retweets (to define the variable of brand post engagement). For vividness and

interactivity, we used the operationalization suggested by De vries et al. (2012) and introduced above in literature review.

Managing Unwanted outliers: graphical representation of post engagement values helped to spot extreme values. In effect, we considered as an outlier every value that is higher than 30. After removing outliers, we ended up with a dataset of 313 observations instead of 316 (Table 2).

Table 2: Dataset after deleting outliers

brand	Freq.	Percent	Cum.
BlueNileDiamond	121	38.66	38.66
JamesAllenRings	139	44.41	83.07
forevermark	53	16.93	100.00
Total	313	100.00	

The data concerning control variables was included in the dataset provided by TAGS but it needed some adjustments. For time, instead of distinguishing in terms of all the days of the week, we adjusted the values of the time variable by distinguishing between weekdays and weekends. For length of post, it doesn't apply to our dataset because Twitter is regarded as "the SMS of the internet" (Debreceny et al., 2019), therefore we didn't have to make any distinction with respect to length as all tweets are short posts. Regarding the number of followers, it did not necessitate any kind of adjustment.

Data analysis

- **Statistical model**

This first study aims to determine the impact of the content on brand post engagement. Although we are interested in the impact on post engagement from the content perspective only, our theoretical model indicates that there's other independent variables also influencing the response variable. Thus, we estimated a statistical model that analyzes these multiple variables simultaneously:

$$Y = \alpha + \beta_1*CRC/BRC + \beta_2*vlow/vhigh + \beta_3*(ilowl, ilowv, ihigh/ino) + \beta_4*wday/wend + \beta_5*fomed/folow + \beta_6*fohigh/folow + \varepsilon$$

Where Y = Post engagement ; α = intercept ; ε = error term

And where:

- CRC/BRC = dummy variable indicating whether the content is category or brand related
- vlow = dummy variable indicating whether a low vividness characteristic is present (picture)
- vhigh = dummy variable indicating whether a high vividness characteristic is present (video)
- ino = dummy variable indicating whether no interactivity characteristic is present
- ilowl = dummy variable indicating whether a low interactivity characteristic is present (link)
- ilowv = dummy variable indicating whether a low interactivity characteristic is present (voting)
- ihigh = dummy variable indicating whether a high interactivity characteristic is present (question)
- wday = dummy variable indicating whether the post was posted during weekdays
- Wend = dummy variable indicating whether the post was posted during weekdays
- folow = dummy variable indicating whether the post was posted by a brand with a low number of followers
- Fomed = dummy variable indicating whether the post was posted by a brand with a medium number of followers
- Fohigh = dummy variable indicating whether the post was posted by a brand with a high number of followers

- **Coding**

All the independent variables in this research are categorical variables with categories to be coded (Table 3). Consumer engagement with the post is measured by three different variables (likes, replies and shares). We choose to group them and consider post engagement as an aggregate variable. Therefore, we created a new variable defined as follows:

$$post\_eng = Like + Replies + Retweets$$

Table 3: Codebook - Study 1

Content type	Vividness	Interactivity	Time	Number of followers
1 BRC 2 CRC	1 none 2 picture 3 video	1 none 2 link 3 voting 4 question	1 weekday 2 weekend	1 4107 2 7991 3 18459

- **Data description**

Our dataset is composed of 64% of posts with BRC and 36% of posts with CRC. The majority of total posts has a low level of vividness (72.5%) and low level of interactivity (70%). Besides, regardless of their number of followers, companies apparently prefer to post on weekdays as almost 88% of posts were published on weekdays (Table 4).

The distribution of post engagement is skewed right (Skewness=2.5) (Appendix 2) and has a higher peak and longer tail than a normal distribution (Kurtosis=10.32). The mean value is 3.6 (SD=5.14) (Appendix 3).

Table 4: Frequency explanatory variables

Variable	Level	Value	Frequency	Percentage
Content type	-	BRC	200	63.90
	-	CRC	113	36.10
Vividness	No	None	75	23.96
	Low	Picture	227	72.52
	High	*Video*	*11*	*3.48*
Interactivity	No	None	92	29.39
	Low	Link	218	69.65
		Voting	*2*	*0.64*
	High	*Question*	*1*	*0.32*
Time	-	Weekday	275	87.86
	-	Weekend	38	12.14
Number of fans	Low	4107	139	44.41
	Medium	7991	53	16.93
	High	18459	121	38.66

It's important to realize that our dataset contains 11 tweets with video, 2 tweets with voting and only one tweet with a question. Due to the fact that each of these observations appears less than 30 times, we are not going to include them in our regression as there isn't enough data to allow for analysis. Thus, we can only compare low vividness to no vividness and no interactivity to the low interactivity level materialized by the use of links. The new regression equation becomes:

$$Y = \alpha + \beta_1*CRC/BRC + \beta_2*vlow/vno + \beta_3*ino/ilowl + \beta_4*wday/wend + \beta_5*fomed/folow + \beta_6*fohigh/folow + \varepsilon$$

Results

Study 1 aims to investigate the impact of the content variable on brand post engagement, therefore we ran a regression analysis (Appendix 4). The results show that F is significant which means that the model fits our data. Moreover, the overall quality of the model is good as it explains 42% of the variance in post engagement (R^2-adj = .42).

The results (Table 5) also indicate for the type of content a p-value of .113, not statistically significant at the α=.05 level. Which means that there is not enough evidence to say that the effect of CRC on post engagement is higher (or lower) with respect to BRC (in case all the other variables are kept constant). We conclude that there is no difference in post engagement between posts with CRC and posts with BRC, not supporting H1.

Regarding post characteristics (Table 5), low vividness drives 5.72 increase in post engagement than no vividness. Which means that, compared to non-vivid tweets, those including a picture will get 6 interactions higher (in case all the other variables are kept constant). This impact is statistically significant (p < .001). Additionally, no interactivity is also statistically significant (p-value=.004) at the significance level of .05. The table shows that no interactivity has an effect of 1.93 more than low interactivity on post engagement, i.e low interactive tweets result in 2 interactions less than no interactive tweets (in case all the other variables are kept constant). The other levels of vividness and interactivity are not included in the analysis as our data are not sufficient to allow for testing. Consequently, H3 and H4 are both supported.

Furthermore, variables that we kept constant to not influence the results are significantly related to post engagement, except posting time. In effect, our data support no significant relation between posting on weekdays or weekends and post engagement. Concerning the number of followers, we compared the levels that we coded as low, medium and high. We found that a medium number of followers increases post engagement of 7.64 more than a low number of followers. And a high number of followers increases post engagement of 4.67 more than a low number of followers. This means that the brand that has the medium number of followers in our dataset benefits from the highest level of post engagement. That's an increase of 8 interactions of the mean of post engagement with respect to the brand in the dataset with the lowest number of followers.

Table 5: Regression coefficients & significance

Variable	Beta Coefficient	Significance value
CRC/BRC	-.80	.113
vlow/vno	5.72	.000
ino/low	1.93	.004
wday/wend	-1.01	.147
fomed/folow	7.64	.000
fohigh/folow	4.67	.000

In this study, we worked on a set of tweets posted by three different brands on their Twitter profiles. The aim was to distinguish category-related content from brand-related content and study their respective impact while considering the impact of other factors. The task of categorization implied a thorough examination of the tweets' content. As a result, we found out that a certain number of themes are shaping the content of the brands' posts (Table 6). These themes are not specific to one content type. In other words, depending on the message that the brand is communicating, any theme can be used for any type of content.

Table 6: The general themes of the tweets' content studied

Themes	Blue Nile	James Allen	Forevermark
Goods & services	×	×	×
Love	×	×	×
Modern love			×
Commitment	×	×	×
Marriage & wedding	×	×	
Celebrities		×	×
Responsible sourcing			×
Independent women			×
Community empowerment			×

Goods & services

This theme corresponds to tweets presenting the company's products and services. Diamond jewelry brands write tweets to promote the jewelry pieces that they have, or to introduce new models and invite users to check them on their website. Here's an example from the brand James Allen:

> "*Have you seen one of our new sparklers? Say hello to our beautiful Baguette Ballerina Halo Diamond Engagement Ring!* 🤩❄️
>
> *https://t.co/GXyjT7v88b* https://t.co/jNNMotEzj2"

However, sometimes the company focuses the message on the jewelry model or the diamond shape which is not exclusively possessed by the brand but is also offered by other brands too. For example, in the tweet below, James Allen compliments the square shaped diamond, princess-cut and cushion-cut, knowing that these shapes are common in the market. The compliment is not only about the shape but also about the sparkling. Alex Popov, Chairman of World Diamond Mark, considers it as a feature that is saving the industry from dying because it does good competing with other visual impressions that consumers are being offered in the contemporary world (Vladimir Malakhov, 2017).

> "*These sparkling squares have earned themselves die-hard popularity among the engagement ring crowd. They're beloved by everyone from divas to dreamers – so which are you?*
>
> *https://t.co/Zqc56c77TD https://t.co/ZIqRHSIX30*"

Next to jewelry pieces, brands who offer services such as Computer Aided Designs (CAD) to help customers with custom designs, insurance or gift packaging, also talk about it to their online community. Below is an example from Blue Nile:

> "*Create your perfect ring at any budget* 💍 *https://t.co/6voKMmpNPU https://t.co/24xN0JBpBV*"

Love

Women in the largest diamond consuming countries, China, India and the US, consider diamond as the ultimate symbol of love (The Diamond Insight Report, 2019). Diamond brands want to keep this fresh in the mind of consumers as they are aware of the competition from several industries. Therefore, they try to make diamonds exclusively symbolize love by stating it expliciting on social media. The following tweet from Blue Nile is a good example:

> "*Better than a box of chocolates* 💝 *https://t.co/bJIadEgfm3 https://t.co/2PatySfDBS*"

In the same regard, another strategy is also employed. By way of analogy, marketers try to assimilate love to diamond to legitimize the symbolization. For example, when describing a picture of a mixed couple posted on its profile, James Allen mentioned colorlessness to assimilate colorless love to a colorless diamond stone of a very high quality.

> "*He's introduced me to the true meaning that love is colourless*"

https://t.co/RoEi0aX3gi https://t.co/rGMzNd5EOu"

Modern love

As diamond has always been the symbol of love, diamond brands should keep up with the times and understand how the expressions of love are evolving. In today's modern world, same-sex love is expressed openly and brands should demonstrate inclusivity in their promotional messages (The Diamond Insight Report, 2019). As an application of their own teachings, Forevermark tweeted the following:

"We love all love. #NYCPride #PrideMonth https://t.co/MteVPjq5Eh"

Commitment

A research with US women confirmed that the whopping majority of participants perceive diamonds as something durable due to its everlasting endurance (The Diamond Insight Report, 2019). This perception is the result of the strategy of assimilating diamond with emotions by emphasizing its features. Alex Popov, Chairman of World Diamond Mark, stated that the diamond industry is an industry of emotions and that brands should work on making diamonds reflect emotions (Vladimir Malakhov, 2017). The following tweet is an example from Blue Nile of commitment and marriage theme:

"*Forever sure has a nice ring to it 💍 https://t.co/aUUDupxRvX https://t.co/1klpfPGJFn"*

Marriage & wedding

Besides commitment, brands link diamonds to marriage in their social media posts although it is considered as a bad idea in advertising. In fact, marriage rates are low for Mil-len-ni-als that are in the age of marriage (Sanderson, Henry, 2017). And Anyway, it's not wise to associate diamonds with one event in one's life (Sanderson, Henry, 2017). A senior insight and analytics manager advised diamond brands to stop talking about 'bridal' and to talk instead about love and commitment (The Diamond Insight Report, 2019). The following tweet from James Allen is an example of the specific bridal theme:

"*@brides share what to do as soon as you get engaged! https://t.co/kKV7v7pBgO https://t.co/BIDNofl2vI"*

Celebrities

Jewelry brands also didn't miss the opportunity to mention it on their Twitter profiles when celebrities choose their brand. As an example, James Allen wrote a blog post about celebrities who wore their jewelry models to the Emmys and promoted it in a tweet as a sign of endorsement by celebrities who usually have a strong influence with their style.

"*Hands down, the 2019 Emmys were a sweep of please-may-I red carpet looks. Want to grab*

a piece of their glamour? Read on for the Emmys jewelry of the night…

https://t.co/FUmjhELZEK https://t.co/A4hJfNcwlr"

Responsible sourcing

In a study conducted with diamond jewelry retailers, 83% of participants agreed that distrust among consumers is commonplace due to the suspicions related to the diamond source, characteristics and price (Vladimir Malakhov, 2017). Hence, the same study found out that jewelers want to promote themselves as reliable diamond sellers on social media (Vladimir Malakhov, 2017). In line with this theme of content, Forevermark posted the following tweet:

> *"Master diamond craftsmen devote precise expertise to hand select only those rare #diamonds which are eligible to become Forevermark. #craftsmanship https://t.co/XdFPWX2hjN"*

Independent women

Since the industry noticed a trend of women buying diamond for themselves, it has started to capitalize on it to generate more sales. Half of jewelry sales worldwide are women's self purchases. This trend has been pushed by diamond brands especially because the current generations are delaying marriage (Sidell, Misty White, 2019). The following tweet is an example from Forevermark of the theme of independent women:

> *"This month—fall in love with treating yourself. <3 https://t.co/WieQXTJqUp #SelfLove #SelfCare #Diamonds https://t.co/fFKD6k3OXO"*

Community empowerment

In response to the consumer concerns about diamond sourcing practices, diamond brands want to show genuine commitment to community development in the regions where they operate. The Diamonds Do Good fund has been created to award brands who invest in community empowerment by offering good wages, good working conditions, modernising the infrastructure and implementing social programs. The aim of such efforts is to push brands to be more responsible and elevate their practices (Asian news international, 2019). Here's an example from Forevermark sharing these stories with its online community:

> *"Discover how #diamonds are improving conservation in episode one of our podcast 'The Power of a Diamond'. Follow this link to listen to episode one: https://t.co/qBJniGV4VG https://t.co/SlDveTlzYP"*

The themes explained above constitute four groups: 1) Writing about the color, cut, clarity, carat (the diamond 4cs), sparking, shapes, durability… etc of diamonds or describing the jewelry designs and metals is stating the actual benefits of the product category (BusinessDictionary.com). 2) Associating

diamond to love, modern love, women's character, commitment and celebrities' popularity & style is expressing the perceived benefits of the product category. 3) As marriage now appeals to less and less consumers, diamond jewelry brands are choosing to promote it, maybe not in their advertising campaigns, but certainly in their social media posts. This can be considered as an effort to promote a complementary market (BusinessDictionary.com). 4) Social responsibility pressing issues are addressed with content related to the themes of responsible sourcing and community empowerment efforts deployed by the industry as a whole. A company would make use of these content themes to state the exclusive benefits of its own brand and generate brand-related content. Or, to state the benefits it shares in common with other brands in the same category and generate category-related content.

Consequently, category-related content can be defined as a content that is indirectly referring to the brand through promoting the category with the aim of impacting the market size. This content pertains to the category's actual benefit, the category's perceived benefit, the complementary market promotion and the industry's social and ethical responsibility.

By defining category-related content and identifying the predominant content themes, we have answered the first sub-question of this study. The finding that revealed no difference in the impact of category-related content and brand-related content helped answering the second sub-question and testing the hypothesis dedicated to it (H1). To answer the third sub-question that we have formulated about the interdependence between category-related content and brand-related content, we have organized a second study to test H2.

Study 2

Research design

We have conducted an experiment in which we exposed the subject to posts with category-related content (CRC) always in first place before showing posts with brand-related content (BRC). The purpose is to discover whether the two types of content are related and if category-related content influences brand-related content in order to provide an answer to the second hypothesis of this research.

The experiment was organized using two surveys. The subjects were tested in two different conditions forming then two different samples:

- Sample A of subjects that have been exposed to a post with CRC followed by a BRC post (Appendix 13)
- Sample B of subjects that have been exposed to two posts with BRC (i.e., no posts with CRC) (Appendix 14)

In the main section of each survey, respondents navigated through three combinations of brand posts. Both surveys start with a section introducing the issues and challenges of the diamond industry. As participants are not necessarily interested in the products and services of the brands in this study, this section in the beginning of the survey is important to contextualize the experiment and make sure that participants have the required level of information.

The question about post engagement was asked for both types of posts not only to cover up the underlying story but also to be able to provide a description of consumers who engage with CRC. Consistently with previous studies, the variable of post engagement was operationalized by the counts of likes, replies and retweets (e.g: Menon et al., 2019, Schultz, Carsten D., 2017, Cvijikj, Irena Pletikosa, 2013). Although researchers before investigated the impact on each metric apart, we aggregate them as the focus of the current study is not to explore the intensity level of brand post engagement.

The target population consists of members of Millennials (1980 - 1994) and Gen Z (1995 - 2015) as long as they are the category that represents growth opportunities for the diamond and jewelry industry (DE BEERS GROUP, 2018). The sample size is required to be a minimum 30 observations per variable.

Data collection plan

- **Target population**

Millennials (1980 - 1994) and Gen Z (1995 - 2015) who use social media, and thus might interact with brands' posts on social media.

- **Sample**

The sampling frame is the list of friends on social media.

- **Method**

To distribute the surveys, we used personal social media accounts. In public posts with relevant hashtags, we asked people to take one of the surveys. And we used snowball sampling by sending the survey link in direct messages and asking the person to invite his/her friends to take it.

- **Data cleaning**

Removal of unwanted observations: few background data was gathered by Qualtrics such as progress, duration, date, respondent's IP...etc were deleted from the cleaned dataset after we used the necessary information to keep the reliable responses only. Consequently, we left out responses that were produced in less than 1.5 minute (minimum time to complete the survey) and those that had a progress less than 80% (20% of missing data was tolerated). We ended up with 34 responses out of 46 for survey A and 29 out of 39 for survey B.

Managing Unwanted outliers: there were no outliers because all of the variables are categorical variables.

Handling missing data: we replaced missing data for each variable with its mode. Consequently, 9 missing observations were replaced for gender, 12 for age groups, 9 for education levels out of a total number of observations N=189. We also had one missing value for BRC in sample B that we replaced by the most frequent value "like".

The dataset was reorganized in a way that we get all the data from the two samples in one dataset that can be sorted by sample and where there's only one column for CRC and BRC. As respondents of sample B did not see any CRC, their observations in the CRC column were kept as missing values.

Data analysis

- **Test**

We want to test whether category-related content can influence post engagement with brand-related content. In other words, we suppose that post engagement with BRC gets high if consumers have been exposed before to CRC. To test this, we believe chi-square test is the most adequate.

For two samples, we need to compare occurrences of interaction (as an operationalization of post engagement) and not means. Therefore, post engagement is considered as a categorical variable with counts that are grouped in a dummy "interaction" comparing it to "no interaction". Moreover, the assumption that the sample size is big enough has not been violated as no cell has a count less than 5 to require Fisher's exact test.

$$H_0: CRC - BRC = BRC - BRC$$
$$H_1: CRC - BRC > BRC - BRC$$

- **Coding**

The two surveys collected brand post engagement in terms of likes, replies, retweets or no interaction. However, we only need to know of the occurrence of the interaction no matter in which form it would be. Therefore, we created dummy variables from post engagement, and we combed the three dummy variables of "like", "reply" and "retweet" to create a new variable reflecting the occurrence of the interaction (Table 7):

$$CRC/BRC\_interac = like + reply + retweet$$

The variable age was also grouped. Based on the observations collected, we had one group representing Gen Z (18 - 25) and two groups representing Millennials (26 - 32 and 34 - 42). The rest of the variables were coded per category (Table 7).

Table 7: Codebook - Study 2

Sample	BRC_interac	Age groups	Gender	Education level
a CRC-BRC b BRC-BRC	0 no 1 yes	1 18 - 25 2 26 - 32 3 34 - 42	1 Female 2 Male	1 Bachelor's degree 2 High school graduate 3 Master's degree 4 Phd

- **Demographics**

The survey was randomly distributed as there was no need to set quotas by gender, age or education level. The majority of participants in sample A consists of female respondents (85.2%) (Appendix 5) aged between 18 and 25 (50%) (Appendix 6) and who has achieved a master's degree (64.7%) (Appendix 7). While for sample B, more than half of participants consists of female respondents (55.2%) (Appendix 5) aged between 26 and 32 (62%) (Appendix 6) and have achieved a master's degree (65.5%) (Appendix 7). We can say that results of these surveys are valid to represent generation Y and generation Z.

Results

Study 2 aims to discover whether engagement with posts with brand-related content is dependent on the previous exposition to posts with category-related content. Two samples were used in this regard. The bar chart (Appendix 8) shows that for sample A, 56% of posts with brand-related content received an interaction whereas for sample B, 72.5% of posts with brand-related content received an interaction. In other words, respondents who were not exposed to a post with CRC (sample B) engaged the most with the BRC post with a difference of +16.5% from those who were exposed to a post with CRC.

In order to validate this finding, we computed a chi-square test that allowed us to question the relationship between BRC and CRC and discover whether this difference in the level of post engagement with BRC posts is due to the presence/absence of CRC post or is it random.

According to chi-square results (Appendix 9), there is an association between CRC and BRC, $\chi2(1)=5.5357$, $p=0.019$. The p-value indicated (.019) is statistically significant at a level of $\alpha=.05$. Thus, the null hypothesis is rejected which means that post engagement with a BRC post is significantly related to a CRC post.

As we found that subjects who engaged the most with brand-related content were not previously exposed to category-related content, and those who saw a CRC post had low engagement with BRC posts. We conclude that the relationship between CRC and BRC is negative. Hence, in contrast to what we have expected, this finding demonstrates a negative impact instead of a positive one.

As the demographic description revealed large differences between respondents in sample A and respondents in sample B, a further analysis could explain the unexpected finding. Therefore, we computed chi-square for each of the demographic variables to test the possibility of an existing relationship between the demographic variable and post engagement with BRC posts (Table 8). Nevertheless, results of the analysis indicated that only educational level is significantly related to post engagement. Which means that our findings are only valid for master's degree holders. Diamond jewelry brand pages that have followers who have obtained a master's degree will see the engagement with their brand-related posts decrease if they accompany them with category-related posts.

Table 8: Chi-square test - demographic variables-eng

Variable	Significance value	
	Sample A	**Sample B**
Gender	.830*	.907*
Age	.545**	.168**
Education level	.639***	**.037*****

*Appendix 10; **Appendix 11; ***Appendix 12

Another key point, it is important not to overlook the fact that we posited H2 based on H1. The reflection that led to H2 starts by supposing that there is a difference in the impact on post engagement between category-related content and brand-related content. However, since we found that there is no difference, H1 was rejected. Consequently, H2 makes no sense anymore. We used to think that this content categorization is pertinent for post engagement but after testing it, it turned out to be irrelevant. Thus, this explains the results that contrasted with our logic.

Both the studies conducted within the framework of this research enabled us to test the hypotheses (Table 9) and to answer the underlying questions. In fact, the findings helped understand the content-related category by providing a theoretical definition for the concept and an empirical definition in terms of the themes used by brands in the diamond and jewelry industry. The studies demonstrated, on the one hand, that the distinction between category-related content and brand-related content is not relevant to predict post engagement. And on the other hand, the findings revealed that there is a negative relationship between the category-related content and brand-related content.

Table 9: summary of the findings

Hypotheses	Expected	Findings	Results
H1	eng(CRC) > eng(BRC)	eng(CRC) = eng(BRC)	Not supported
H2	CRC-BRC: +	CRC-BRC: -	Not supported
H3	vlow > vhigh	vlow > vno	Unanswered
H4	ino > ilowl, ilowv, ihigh	ino > ilowl	Partially supported

Conclusion

This study addresses the topic of social media marketing. The interactive properties of the social media environment attract many users as they facilitate communication with friends and with organizations. We explored how businesses can successfully manage their social media networks by focusing on the posting activity of brands and the corresponding consumer engagement. We built this research on the model of Menon et al. (2019) from social media marketing literature and we sought to supplement it with content variables drawn from advertising literature.

The content categorization introduced in this paper consists of two variables corresponding to two content categories, category-related content (CRC) and brand-related content (BRC). In order to empirically test these variables, we supposed that posts with category-related content would drive a higher level of post engagement than posts with brand-related content. This hypothesis is in line with the fact that diamond jewelry is experiencing a change in consumer behavior towards this category of purchase. And since generic advertising enhances the perceived value towards a product (Salois and Reilly, 2014) and influences the category sales (Bass, Krishnamoorthy et al., 2005), similarly social media posts promoting the category could be the solution.

To be able to advance our understanding of this categorization, we explored the relationship between category-related content and brand-related content. Previous research in advertising found that consumers that have been exposed to generic advertising reacted more to brand advertising as they have become more receptive to it (Messer K., et al., 2011). Which suggests that there's a positive relationship between generic advertising and brand advertising. Therefore, the second hypothesis in this study was about the impact of category-related content, as the variable responsible for responding to the consumers' concerns, on brand-related content. Next to the content variables, we also analyzed post characteristics to figure out which vividness and interactivity level has a positive effect on post engagement.

Our results brought enough evidence to reject both our hypotheses related to content and to introduce unexpected findings. According to our first hypothesis, category-related content results in higher post engagement than brand-related content. But rather than that, it has appeared that there's actually no difference between brand-related content and category-related content in terms of post engagement. Apropos the second hypothesis, there is a relationship between category-related content and brand-related content as presumed. Conversely, this relationship is not positive. Our findings suggest that the relationship between the two types of content is negative. When brand-related content is preceded by category-related content, post engagement is low.

The testing of hypothesis 3 and 4 led to expected findings. Consistently with previous research, low vividness and no interactivity are the best post characteristics in terms of impact on brand post engagement. Another key point is that all these conditions about content and post characteristics are supposed to yield the best results with short text messages and a number of followers approximating

8k. Posting on weekdays or weekends will not have an effect. It's important to note that this study did not test long posts. Besides, to put things into proper perspective, the brands were not that different in followers' number, the three of them were below 20k followers and the brand with the medium number had the highest post engagement.

As managerial implications of these findings, we can say that when using category-related content for posts, social media managers should expect a certain level of post engagement. But this level of engagement is no different than in case brand-related content was used. Furthermore, category-related content is not recommended to use as we found that it negatively affects posts with brand-related content by reducing the level of consumer engagement they could have received in the absence of preceding posts with category-related content. Subsequently, social media managers are encouraged to use the content themes identified by this research to create content. The definition we suggested for category-related content will serve as a guide to help them avoid creating content that matches this definition.

Most of previous research in brand post engagement operationalized the content as belonging to categories of information, entertainment, remuneration, promotion, social (Menon et al., 2019; Luarn, Pin et al., 2015; De Vries et al., 2012). Some others followed a more narrow approach and used content categories of topics (Schultz, Carsten D., 2016; Cvijikj, Irena Pletikosa, 2011). Following the general approach (the first one), this present research is the first to operationalize the content as category-related content and brand-related content, and to provide a definition for the new content type, category-related content. This research is also the first to identify content themes that are shaping the content of diamond jewelry brands' pages on social media.

The present research contributed to the literature by testing a new variable with the intention of developing an existing model about brand post engagement. The principle underlying the new suggested variable was inspired from a concept in the advertising literature. Building on a concept from a different literature stream in an attempt to advance the understanding of post engagement, allowed us to find an unexploited research path. Ultimately, as we found no significant relationship between the suggested variable (category-related content) and post engagement, it means that the merits of generic content in advertising don't hold for social media content creation. Hence, the theoretical takeaway consists in the rejection of the new content categorization researched in this study.

Limitations & future research

This study has a certain number of limitations. In the first place, we believe that the attribution of interactivity levels to tweets could have been done with more precision. As we did not realize that sometimes a tweet is characterized by two interactivity levels (for example, containing a question and link), tweets of this sort were not labelled properly because we did not take this into consideration. Future research can indicate how to proceed when encountering this situation for results replicability.

Likewise, we believe content labeling also lacks precision. 3% of the total number of tweets were submitted to the inter-observer agreement test while the recommended proportion is 10%. In fact, the study was meant to be conducted on one brand only. Later, it became necessary to enlarge the pool of tweets studied. Consequently, the collection of tweets from the two additional brands altered the condition of 10%. Thus, future research should pay attention to avoid this flaw.

Furthermore, aside from the possibility that demographic factors could have been responsible for the unexpected results of study 2, we believe some limitations might have affected it as well. Consumers did not need a prior exposition to category-related content to become receptive to posts with brand-related content, this might be due to two reasons: 1) the introductory section about the industry wasn't good enough as a contextualization of the survey. 2) the combinations of tweets should have been selected from the same content theme. For example, if a combination starts with a CRC post of responsible sourcing theme, the following BRC post has to be also of responsible sourcing theme. We would like to draw future researchers' attention to these limitations and encourage them to, if possible, conduct similar research with real diamond jewelry brands' followers.

We believe that researching post engagement in relation to content themes could be very interesting because a recent study found that human values influence consumer engagement on social media (Nikolinakou & Phua, 2019). Specifically, self-transcendence values that are benevolence, universalism, and self-direction, are relevant to give more insights into consumer engagement in the diamond jewelry industry. Consumers that are driven by these self-transcendence values would supposedly engage with themes such as responsible sourcing, community empowerment, independent women and modern love. However, instead of making consumers engage with responsible, social and philanthropic initiatives, they trigger their awareness and cause companies' marketing efforts to face skepticism (Nikolinakou & Phua, 2019). This study's finding is pertinent as it concerns millennial audiences that are considered to drive the future growth of the diamond industry. Another finding of the same study showed that self-transcendence is the most important category of human values for this group of audience. Therefore, we don't recommend making use of the categorization tested in this study. We instead recommend future studies within the diamond and jewelry industry to further develop the list of content themes and to test them empirically. Such work would lead to developing the industry's version of the brand post engagement model.

Moreover, some diamond jewelry brands do business in engagement jewelry only whereas some others choose to expand the business to non-engagement jewelry. This implies that the frequency of content themes in their social media profiles is going to be different depending on the business focus. Those trading in engagement jewelry are going to focus content creation about marriage and commitment. Which means that the content will probably be concentrated in a few themes. Therefore, in order to get a diversified set of themes, future research attempting to study post engagement in relation to content themes should not overlook this point when selecting companies to constitute their dataset.

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Appendix 1: the brands studied

brand	Freq.	Percent	Cum.
BlueNileDiamond	122	38.61	38.61
JamesAllenRings	139	43.99	82.59
forevermark	55	17.41	100.00
Total	316	100.00	

Appendix 2: spike plot of the variable post engagement
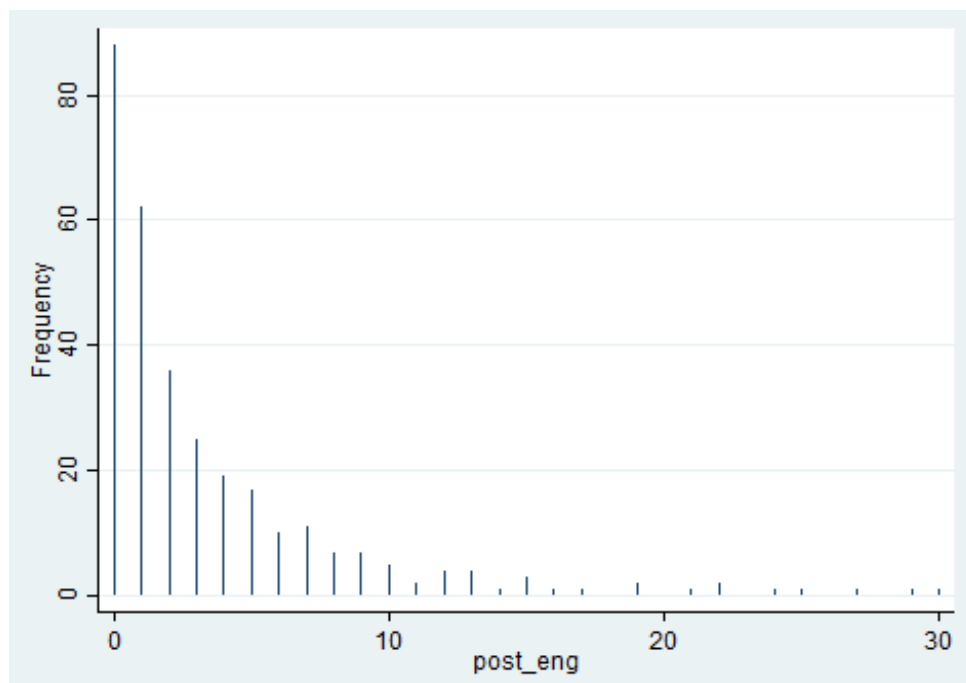
Appendix 3: overview of post engagement

Obs	Sum of wgt.	Mean	Std. Dev.	Variance	Skewness	Kurtosis
313	313	3.603834	5.133124	26.34896	2.503885	10.32136

Appendix 4: regression analysis

Source	SS	df	MS			
Model	3601.75155	9	400.194617	Number of obs	=	313
				F(9, 303)	=	26.25
				Prob > F	=	0.0000
Residual	4619.12385	303	15.2446332	R-squared	=	0.4381
				Adj R-squared	=	0.4214
Total	8220.8754	312	26.3489596	Root MSE	=	3.9044

| post_eng	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
content_coded						
CRC	-.8039752	.506467	-1.59	0.113	-1.800613	.1926628
vivid_coded						
picture	5.728674	.6623508	8.65	0.000	4.425284	7.032064
video	6.05139	1.47489	4.10	0.000	3.149065	8.953715
interact_coded						
none	1.931706	.6664064	2.90	0.004	.6203354	3.243077
voting	.0379511	2.947856	0.01	0.990	-5.762911	5.838813
question	5.90729	3.97841	1.48	0.139	-1.921521	13.7361
time_coded						
weekday	-1.010273	.6943555	-1.45	0.147	-2.376642	.3560965
nb_fol_coded						
7991	7.647883	.7429901	10.29	0.000	6.185809	9.109957
18459	4.671823	.516865	9.04	0.000	3.654723	5.688922
_cons	-3.273573	.9333999	-3.51	0.001	-5.11034	-1.436807

Appendix 5: gender per sample

Graphs by sample
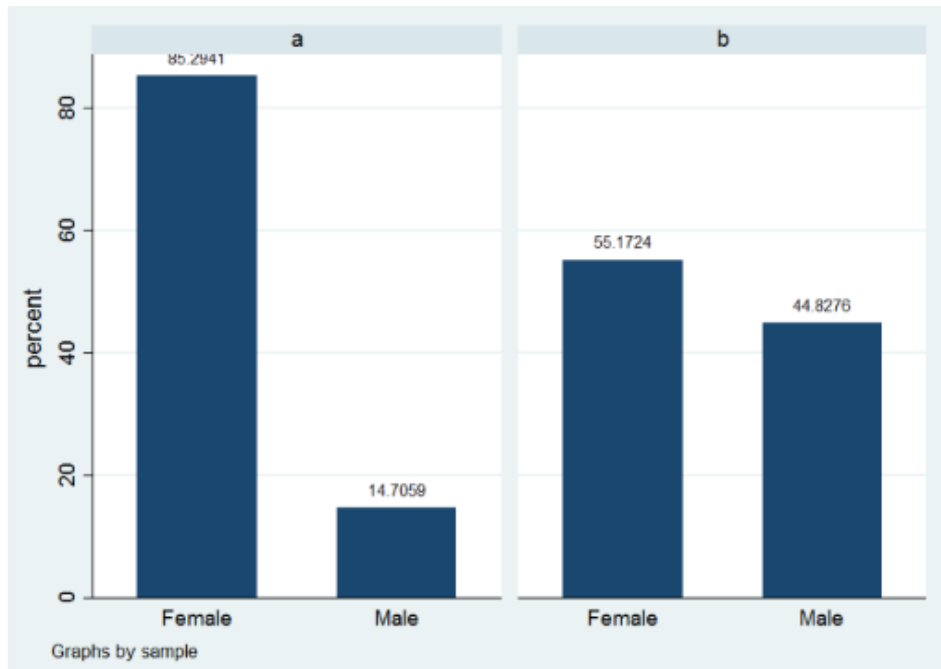
Appendix 6: age group per sample

Graphs by sample
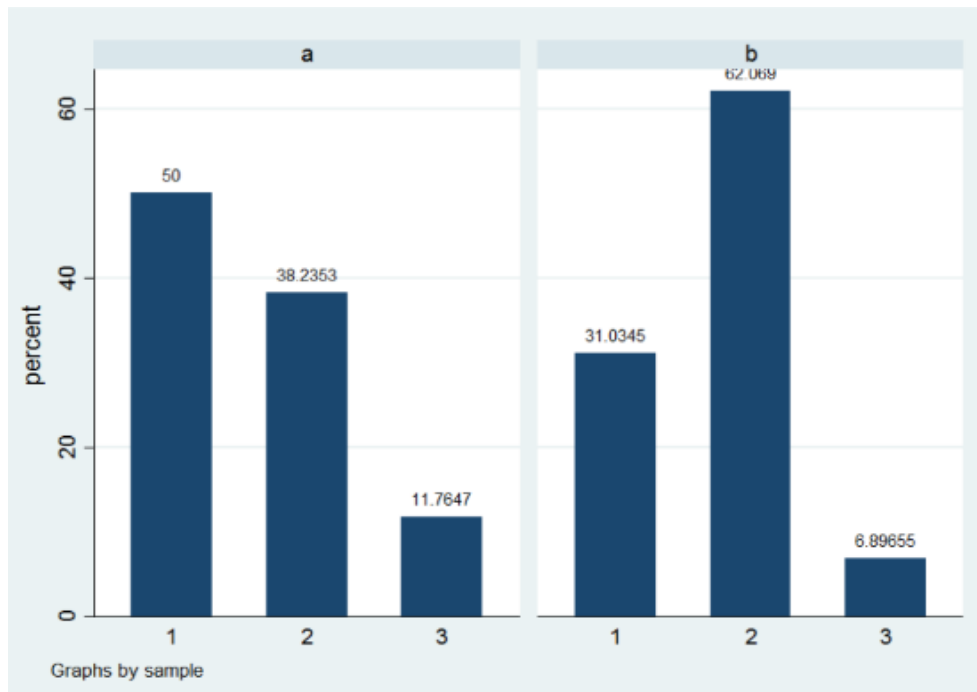
Appendix 7: education level per sample

Graphs by sample
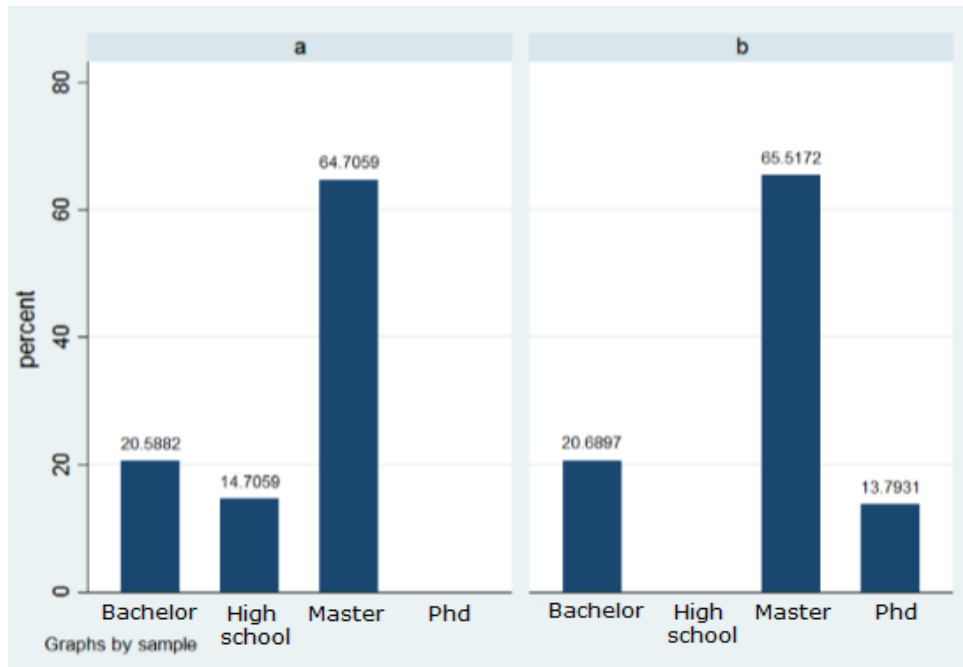
Appendix 8: Comparison of the samples over post engagement with BRC

Graphs by sample
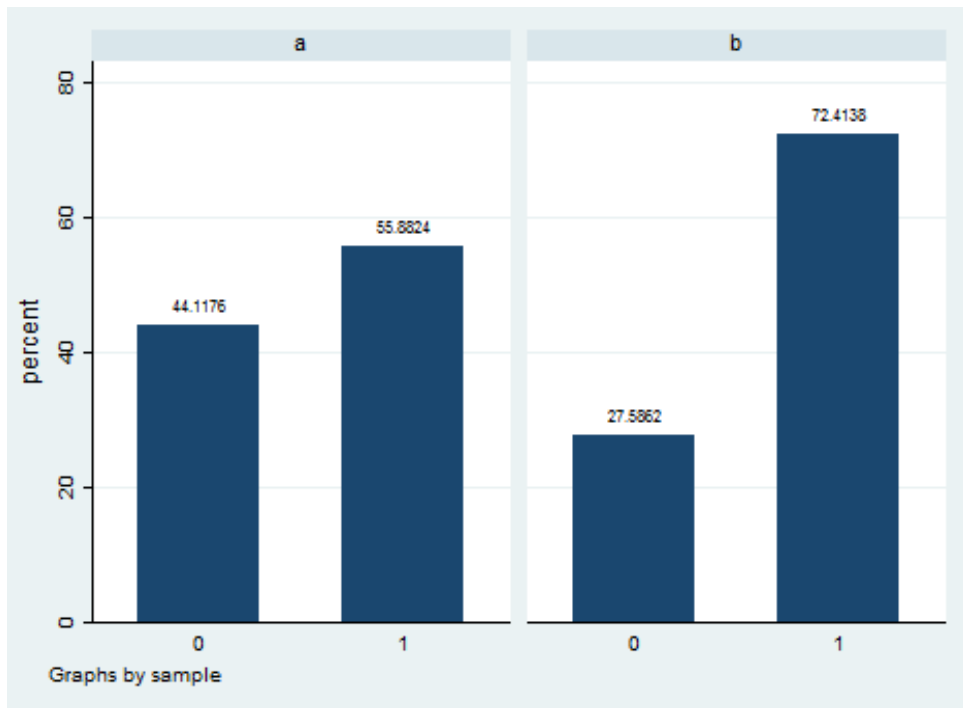
Appendix 9: Chi-square test

```
┌─────────────────┐
│ Key             │
├─────────────────┤
│   frequency     │
│ row percentage  │
└─────────────────┘
```

	BRC_interac		
sample	0	1	Total
a	45	57	102
	44.12	55.88	100.00
b	24	63	87
	27.59	72.41	100.00
Total	69	120	189
	36.51	63.49	100.00

Pearson chi2(1) =   5.5357   Pr = 0.019

Appendix 10: Chi-square gender-eng per sample

-> sample = a

	BRC_interac		
gender	0	1	Total
Female	38	49	87
Male	7	8	15
Total	45	57	102

Pearson chi2(1) =   0.0463   Pr = 0.830

-> sample = b

	BRC_interac		
gender	0	1	Total
Female	13	35	48
Male	11	28	39
Total	24	63	87

Pearson chi2(1) =   0.0136   Pr = 0.907

Appendix 11: Chi-square age-eng per sample

-> sample = a

age groups	BRC_interac 0	1	Total
1	25	26	51
2	16	23	39
3	4	8	12
Total	45	57	102

Pearson chi2(2) = 1.2144 Pr = 0.545

-> sample = b

age groups	BRC_interac 0	1	Total
1	6	21	27
2	18	36	54
3	0	6	6
Total	24	63	87

Pearson chi2(2) = 3.5675 Pr = 0.168

Appendix 12: Chi-square education level-eng per sample

-> sample = a

educlevel	BRC_interac 0	1	Total
Bachelor's degree	11	10	21
High school graduate	7	8	15
Master's degree	27	39	66
Total	45	57	102

Pearson chi2(2) = 0.8968 Pr = 0.639

-> sample = b

educlevel	BRC_interac 0	1	Total
Bachelor's degree	4	14	18
Master's degree	13	44	57
Phd	7	5	12
Total	24	63	87

Pearson chi2(2) = 6.5901 Pr = 0.037

Appendix.13: Survey A

Thank you for accepting to take this survey.

 I am studying social media consumer engagement and your contribution is greatly appreciated. This survey will take about 4 minutes.
  This is an anonymous survey. By completing it, you give me consent to use your anonymized answers for scientific research.
Thank you,
 Imane Serghini

This research is carried out on some diamond jewelry brands. Before we focus on their Twitter activity, it's important to consider the big picture. In fact, this industry is facing a big challenge:

Customer preferences are changing
rapidly, and the diamond jewelry industry
is facing increased competition from the
Experiences and Electronics categories and
from lab-grown stones

SOURCE: THE NINTH ANNUAL GLOBAL DIAMOND
STUDY FROM BAIN & COMPANY AND THE
ANTWERP WORLD DIAMOND CENTRE

Lab-grown stones are diamonds made in the lab and they are identical to natural diamonds. Consumers tend to prefer them because they are less expensive. Consumers also believe they are less damaging to the environment.

However..

Extremely high temperatures are
needed to grow diamonds in the
laboratory, which uses a large amount of
energy

SOURCE: FUTURE
PLANET, BBC FUTURE

What you should also know, this time regarding natural diamonds, is that..

Diamond mining can involve the removal of
vast amounts of earth and rock which
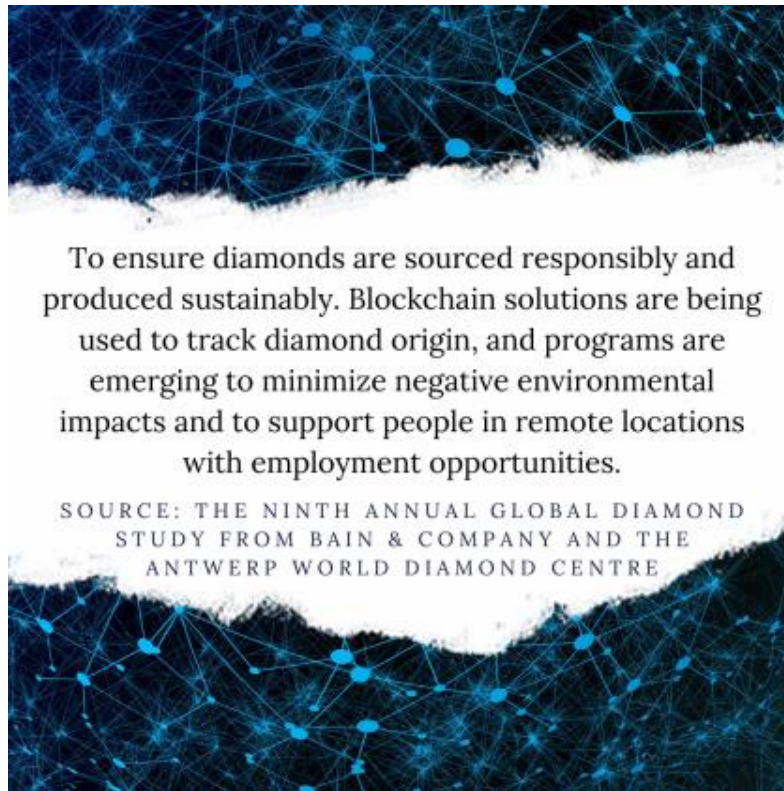creates holes so big they can be seen from
space

SOURCE: FUTURE
PLANET, BBC FUTURE

Diamond mining provides employment in
developing countries but is also
surrounded by humanitarian concerns

End of Block: Block 1

If you're confused, the good news is..

To ensure diamonds are sourced responsibly and produced sustainably. Blockchain solutions are being used to track diamond origin, and programs are emerging to minimize negative environmental impacts and to support people in remote locations with employment opportunities.

SOURCE: THE NINTH ANNUAL GLOBAL DIAMOND STUDY FROM BAIN & COMPANY AND THE ANTWERP WORLD DIAMOND CENTRE

That's it.. End of the story !

Now that you know enough about the industry, I'm going to show you a certain number of tweets by some diamond jewelry brands. Imagine they appear in your feed and tick the option that best describes how you would interact with each tweet.

Please click the red button below to start.

Here you can see tweets of the brand Blue Nile :

How would you interact with this tweet ?

(Tweet url https://twitter.com/BlueNileDiamond/status/1204579054378274818)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/BlueNileDiamond/statuses/1200487850191605761)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

Here you can see tweets of the brand James Allen :

How would you interact with this tweet ?

(Tweet url https://twitter.com/JamesAllenRings/status/1204125820639469569*)*

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/JamesAllenRings/statuses/1175147876055433218)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

Here you can see tweets of the brand Forevermark :

How would you interact with this tweet ?

(Tweet url https://twitter.com/forevermark/status/1199342275668561921)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/forevermark/statuses/1187037481528709121)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

Your gender:

◯ Male (1)

◯ Female (2)

◯ Other (3)

Your age:

_____

Your education level:

◯ Below high school graduate (1)

◯ High school graduate (2)

◯ Bachelor's degree   (3)

◯ Master's degree (4)

◯ Phd (5)

End of Block: Demographics

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Appendix.14: Survey B

Thank you for accepting to take this survey.

I am studying social media consumer engagement and your contribution is greatly appreciated. This survey will take about 4 minutes.
This is an anonymous survey. By completing it, you give me consent to use your anonymized answers for scientific research.
Thank you,
Imane Serghini

This research is carried out on some diamond jewelry brands. Before we focus on their Twitter activity, it's important to consider the big picture. In fact, this industry is facing a big challenge:

Customer preferences are changing rapidly, and the diamond jewelry industry is facing increased competition from the Experiences and Electronics categories and from lab-grown stones

SOURCE: THE NINTH ANNUAL GLOBAL DIAMOND STUDY FROM BAIN & COMPANY AND THE ANTWERP WORLD DIAMOND CENTRE

Lab-grown stones are diamonds made in the lab and they are identical to natural diamonds. Consumers tend to prefer them because they are less expensive. Consumers also believe they are less damaging to the environment.

However..

Extremely high temperatures are
needed to grow diamonds in the
laboratory, which uses a large amount of
energy

SOURCE: FUTURE
PLANET, BBC FUTURE

What you should also know, this time regarding natural diamonds, is that..

Diamond mining can involve the removal of
vast amounts of earth and rock which
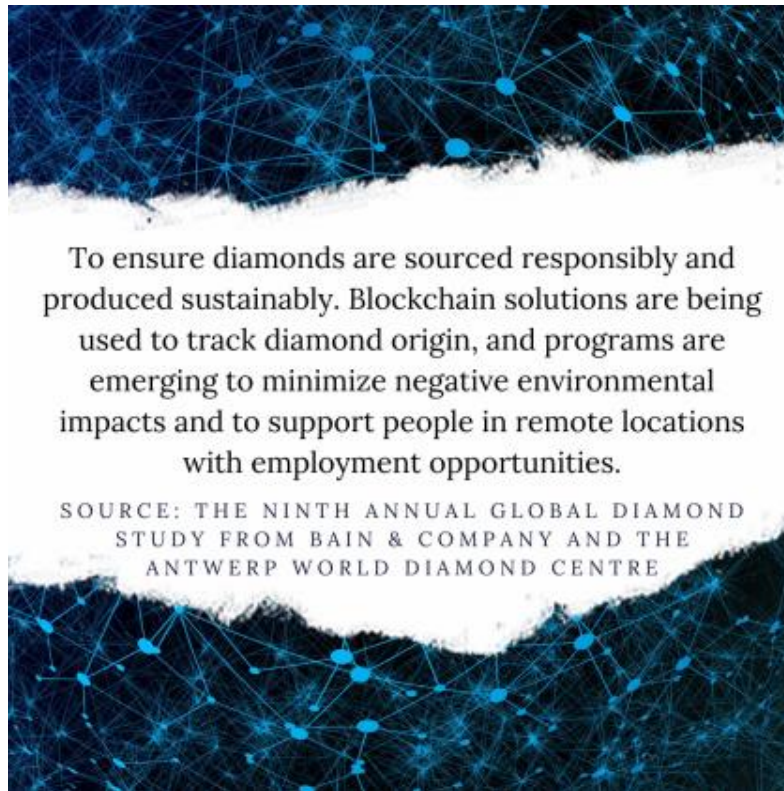creates holes so big they can be seen from
space

SOURCE: FUTURE
PLANET, BBC FUTURE

Diamond mining provides employment in
developing countries but is also
surrounded by humanitarian concerns

If you're confused, the good news is..

To ensure diamonds are sourced responsibly and produced sustainably. Blockchain solutions are being used to track diamond origin, and programs are emerging to minimize negative environmental impacts and to support people in remote locations with employment opportunities.

SOURCE: THE NINTH ANNUAL GLOBAL DIAMOND STUDY FROM BAIN & COMPANY AND THE ANTWERP WORLD DIAMOND CENTRE

That's it.. End of the story !

Now that you know enough about the industry, I'm going to show you a certain number of tweets by some diamond jewelry brands. Imagine they appear in your feed and tick the option that best describes how you would interact with each tweet.

Please click the red button below to start.

Here you can see tweets of the brand Blue Nile :

How would you interact with this tweet ?

(Tweet url http://twitter.com/BlueNileDiamond/statuses/1209425236350906368)

◯ No interaction (1)

◯ Like (2)

◯ Reply (3)

◯ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/BlueNileDiamond/statuses/1221963861961728000)

◯ No interaction (1)

◯ Like (2)

◯ Reply (3)

◯ Retweet (4)

Here you can see tweets of the brand James Allen:

How would you interact with this tweet ?

(Tweet url http://twitter.com/JamesAllenRings/statuses/1204869221269803009)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/JamesAllenRings/statuses/1212131075675303936)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

Here you can see tweets of the brand Forevermark :

How would you interact with this tweet ?

(Tweet url http://twitter.com/forevermark/statuses/1226705382200020994)

No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

How would you interact with this tweet ?

(Tweet url http://twitter.com/forevermark/statuses/1229780324004982785)

○ No interaction (1)

○ Like (2)

○ Reply (3)

○ Retweet (4)

Your gender:

○ Male (1)

○ Female (2)

○ Other (3)

Your age:

_____

Your education level:

○ Below high school graduate (1)

○ High school graduate (2)

○ Bachelor's degree (3)

○ Master's degree (4)

○ Phd (5)

End of Block: Demographics