



Brand Mentions in Social Media as a Key Performance Indicator in the German Fast Moving Consumer Goods Industry

Olga AZARKINA*, Monyédodo KPOSSA **, Erhard LICK **

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ABSTRACT

This research aims to explore correlations between consumer-generated social media activity and the level of sales of German brands from the fast moving consumer goods industry. In particular, the objective was to examine whether there is a correlation between the number of brand mentions in social media and the sales of these products. The results indicate that the number of brand mentions and sales correlate positively in relation to products from the food and beverages category while this is not the case with respect to the non-food product category. Hence, marketers need to promote consumer-generated social media activity particularly for food and beverages.

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1. Introduction

Social media have been increasingly used by enterprises to 'evangelize' customers. One of the advantages of social media is that they permit to enter into a real-time dialogue with customers. In addition, customers normally do not hesitate to share their opinions and views on products and brands with others. They also have an abundance of information to share, such as their experiences with the product. The aim of our research was to explore whether there is a relation between, on the one hand, buzz in consumer generated social media activity and, on the other hand, the sales of brands from the German fast moving consumer goods industry. In the following, first, a distinction is made between *paid*, *owned* and *earned* online media activity. Referring to the latter, a literature review on the relation between consumer-generated social media activity, in particular, brand mentions, and sales is given. Subsequently, the findings of the empirical analysis are presented and discussed. Then conclusions are drawn and managerial suggestions are made. Finally, the limitations of the study and possible avenues for further research are given.

2. Paid, owned and earned online media activity

In general, we can distinguish between three types of online media activity, that is, *paid media*, *owned media*, and *earned media*. Paid media refers to media activities generated by a company, or its agents, such as display/banner advertising, search advertising, or social network advertising, as well as electronic direct mail. In other words, a company pays for the efficient use of channels provided by others. In contrast, owned media is defined as media activities which a company, or its agents, pursues in channels it controls.

Typical examples are company websites or blogs, as well as company-owned pages/accounts in online social networks, like *Twitter* or *Facebook*. Finally, earned media occurs when media activity is carried out by others than the company and its agents, like customers and journalists, who, in turn, constitute the channel. Examples of earned media would be online word-of-mouth referrals, posts in online communities or social networks, or online ratings and reviews (Flores 2014, Stephen and Galak 2012, p. 625; Hanna, Rohm, and Crittenden 2011, p. 4; Corcoran 2009). In general, according to Flores (2014, p. 39), a brand should try to "truly orchestrate its communication around the customer" by using both digital and offline paid media, owned media, and earned media. To put it differently, the brand must create its own "*communication ecosystem*" (original in italics), which he defines as "all the communications it can have with different publics through different points of contacts". For the terms paid, owned, and earned media Flores (2014, p. 40) coined the acronym "POEM". According to Flores (2014, p. 40), within the brand's communication ecosystem "the brand orchestrates the dissemination of its *brand content* (original in italics) by 'writing' and deploying its 'POEM'". This particular view reflects an integrated marketing communications point of view (Flores 2014,

*PRIME RESEARCH International, Germany, **, ***Department of Marketing and Communication, ESCE International Business School, Paris, France. E-mail addresses: azarkina@prime-research.com (O. Azarkina), rkpossa@esce.fr (M. Kpossa), erhard.lick@esce.fr (E. Lick).

p. 39), according to which a company's marketing communications need to show coherence, consistency, and continuity: coherence means that marketing communications need to be logically connected, consistency refers to the absence of self-contradiction, and continuity stands for connection and consistency over time (Pickton and Broderick 2005, pp. 28-29).

According to *The Nielsen Global Survey of Trust in Advertising*, which was conducted among more than 29,000 internet respondents in 58 countries, earned advertising in terms of word-of-mouth recommendations made by friends and family, represented the most influential source of information for 84% of the subjects. This was an increase of 6% compared to 2007. Moreover, owned advertising on branded websites proved to be the second most trusted form of advertising (Nielsen 2013).

The main product categories which stimulate word-of-mouth, both on-line and off-line, are food and dining, media and entertainment, as well as beverages, according to a study based on a sample of more than 37,000 respondents in the US (Keller and Libai 2011, p. 19). In our study we concentrate on earned media and, in particular, social media where activity is generated by consumers.

3. Research on the relation between consumer-generated social media activity and sales

Larson and Watson (2011, p. 3) define the term 'social media' as "the set of connectivity-enabled applications that facilitate interaction and the co-creation, exchange, and publication of information among firms and their *networked* communities of customers". In particular, social media include, for example, social networks, blogs, podcasts, wikis, mobile applications and games (Drula 2012, p. 77). Social media is sometimes referred to as 'consumer-generated media' as opposed to 'traditional media', like TV, the radio and magazines. Other terms for 'traditional media' are 'old media' or 'legacy media' (Yu and Kak 2012, pp. 2-3; Russell 2010, p. 50).

In general, social media research helps organizations to make management decisions based on information collected from social media channels (Pletikosa Cvijikj, Dubach Spiegler, and Michahelles 2012). In order to monitor social media activity special software has been developed. Kasper et al. (2010, pp. 33-35) provide a list with solutions offered on the German market. The biggest providers of such solutions are, for example, *Alterian SM2*, *Attensity360*, *Radian6*, *Visible Intelligence*, and *NM Incite - My BuzzMetrics*, which was developed by *Nielsen*. These tools usually work as search engines: a request triggers a real-time query which is sent to the social media platform (Sen 2011, p. 13). Subsequently, the findings in relation to all the requests are shown on a customized dashboard.

Yadav et al. (2013, p. 312), Yu and Kak (2012, p. 4), as well as Zhang, Li and Chen (2012, p. 2) argue that although a considerable amount of research has been carried out on both consumer behavior on social network sites and the effects of electronic word-of-mouth, there is a lack of research on the relationship of social media activity and sales. Similarly, Keller and Libai (2011, p. 18) criticize the lack of measurement of the economic value of word-of-mouth. Yet, Chevalier and Mayzlin (2006) investigated the relationship between customer online book reviews and sales and found that an improvement of book reviews results in an increase in sales. Moreover, Liu (2006), Dellarocas, Zhang, and Awad (2007), as well as Duan, Gu, and Whinston (2008) examined the impact of customer online word-of-mouth on sales in the motion picture industry. These three studies showed a positive correlation between the volume of word-of-mouth and box office sales.

3.1. Measuring the correlation between online brand mentions and sales

Marketing research has developed metrics to measure the effectiveness of the use of traditional media when planning a media campaign. Examples are CPM, that is, the costs to reach a thousand people in print media or CPRP, which refers to the costs per rating point in relation to advertising on TV. The problem involved is that these terms are used inconsistently since the cost bases employed and the standards of measurement of costs may vary according to the different media used (Belch and Belch 2009, pp. 319-320). In other words, in traditional, paid media the number of people who may pay attention to a message is measured. Hence, we can speak of "assumed attention". In contrast, metrics which measure the quality or quantity of consumer online activity can be referred to as "earned engagement" (Russell 2010, p. 45).

Cui, Lui, and Guo (2012, p. 39) define three categories of metrics which can be used to measure 'earned engagement' in social media: volume, valence, and dispersion. While volume metrics are quantity-related and measure, for example, the number of consumer reviews, valence metrics refer to the positive or negative opinions involved; dispersion metrics measure the speed at which word-of-mouth is spread within and across communities. Hoffman and Fodor (2010, p. 44) give a detailed overview of the metrics that can be employed according to the different social media applications, like blogs or product reviews, and according to the social media performance objectives of brand awareness, brand engagement, and word-of-mouth.

The volume-related metric of brand mentions, also referred to as 'buzz', is one of the most widely spread metric used to determine a company's social media presence. The reason is that tracking brand mentions in social media may give marketers an insight into the customers' awareness of their brands (Hoffman and Fodor 2010, p. 46). Keller and Libai (2011, p. 18) state that 3.3 billion brand impressions are made via word-of-mouth, both online and off-line, in the US every day. Hence, as Keller and Liabi (2011, p. 18)

phrase it, “[b]rands, it is fair to say, are a major currency of conversation”. Most of the social media monitoring software mentioned above measure the metric ‘brand mentions’ for their clients.

According to a study (Awareness 2012) conducted in January 2012 among the marketers of the 320 biggest US companies, 23 % monitor social media for brand mentions on a real-time basis, 22 % few times a week, and 33% on a near-time basis. In contrast, only 22% do not monitor brand mentions at all and 14% are planning to monitor them in future. Thus, brand mentions is the leading social media marketing metric tracked by 77% of US companies. Therefore, for our study we explored whether brand mentions in social media have an impact on sales.

3.2. Online brand mentions in the fast moving consumer goods industry

While in the literature correlations between online word-of-mouth and sales were explored for different products, such as for microloans granted by online marketplaces (Stephen and Galak 2012) as well as books (Chevalier and Mayzlin 2006), and movies (Duan, Gu, and Whinston 2008; Dellarocas, Zhang, and Awad 2007; Liu 2006), as mentioned above, there is a lack of research on the possible differences in these correlations according to different product categories (Cui, Lui, and Guo 2012, p. 40). The reason is that consumers may show different online behavior for different types of products. As a matter of fact, Huang, Lurie, and Mitra (2009, pp. 64-66) revealed that in the case of experience products consumers spend more time on an internet page and consult fewer internet pages than in the case of search products. Furthermore, the existence of customer feedback on the internet increases the likelihood of purchasing from the seller to a larger extent for experience products than for search products.

Huang, Lurie and Mitra (2009) follow the traditional distinction between experience and search products, which was made, for example, by King and Balasubramanian (1994), Leahy and Howard (2005), as well as Franke, Huhmann, and Mothersbaugh (2004). Generally speaking, experience products, such as books and movies, constitute products whose attributes in connection with product quality can be best discovered by making experiences with the product. In contrast, search products, like electronics, are those where the discovery of attributes which are essential for the evaluation of product quality normally do not require the consumer, or others, to interact with the product (Huang, Lurie and Mitra 2009, p. 57; Cui, Lui, and Guo 2012, pp. 42-43).

Typical examples of experience products are fast moving consumer goods. The term ‘fast moving consumer goods’ refers to “typically non-durable products that are consumed over a short period of time after which they would need to be replaced” (Pillay 2007, p. 34). Examples would be food and beverages, health and beauty products, as well as household detergents. With respect to beverages, for example, Prawono, Purwanegara, and Indriani (2013) contend that both past experiences and word of mouth have the largest influence on impulsive buying behavior towards beverages (Prawono, Purwanegara, and Indriani 2013). In addition, Javornik and Mandelli (2012, pp. 304-305) argue that in the case of fast moving consumer goods brands customers’ engagement is generally limited to the spread of word-of-mouth and repurchase of brands; customers do not seem to be willing to act as brand ambassadors or to participate in the brand community.

Hence, in view of the characteristics of this market, pointed out above, brand awareness and brand recognition are decisive factors for marketers. These may conduct social media research to obtain valuable consumer insights in relation to brand awareness and brand loyalty (Hoffman and Fodor 2010, p. 42).

Thus, our research is based on the fast moving consumer goods industry. In addition, we distinguished between two product categories, that is, on the one hand, food and beverages products and, on the other hand, non-food products. The reason for this distinction was to find out whether there is a difference in the correlation between brand mentions and sales according to these two product categories.

As a matter of fact, as Davis and Khazanchi (2008) have demonstrated, there is reason to believe that product category represents a moderator variable for the relation between online word-of-mouth and sales. In other words, according to Davis and Khazanchi (2008), the interaction between product category and number of comments about a product shows a significant effect on product sales.

4. Purpose, data and methodology

The purpose of this study was to determine whether the number of brand mentions in social media qualifies as a key performance indicator in social media research. In particular, the aim was to find out whether there is a correlation between, on the one hand, how many times brands of the German fast moving consumer goods industry (food and beverages as well as non-food products) are mentioned in social media and, on the other hand, the sales of these brands.

To this end, data from both the *Nielsen* social media panel and the *Nielsen* retail panel were analyzed. The data from the *Nielsen* social media panel was retrieved with the help of *Nielsen's My BuzzMetrics* (Nielsen 2014), which is a program that captures and analyzes content and messages from a wide range of consumer-generated media sources (worldwide more than 100 million), such as blogs, user groups, social networks and boards, as well as the micro-blog portal *Twitter* and the video portal *YouTube*. In our study only messages

composed in German coming from a German domain were considered. Hence, for example, Austrian and Swiss domains were excluded since only sales data from Germany were available.

In addition, the *Nielsen* retail panel, named *Market Track*, was used. It covers B2C data on purchases of fast moving consumer goods which is collected directly at the point-of-sale. In particular, the data is collected by scanning the bar codes of products in over 15,000 retail outlets in Germany, such as supermarkets, food retailing stores, self-service department stores, beverage stores, discounters, drug stores, and pharmacies. Moreover, the *Excel*-integrated *Nielsen* software *Nitro* was used for retrieving the data.

Nine well-established product brands from the fast moving consumer goods industry were chosen (see table 1). From these nine brands five fall into the ‘food and beverages’ (*F*) and four into the ‘non-food’ (*NF*) category. For reasons of confidentiality the brand names have been replaced as can be seen in table 1. Several criteria were employed for the selection of the sample of brands. The first criterion was the size of the company. A mix of both small and large international companies was chosen, since, in general, the size of a business influences its marketing expenditure and, consequently, its media buzz.

The second criterion was the number of brand mentions. On the one hand, brands with a low number of mentions and, on the other hand, brands with a high number of mentions were selected; this allowed detecting possible differences between these two types of brands. The third criterion was the degree to which the company was carrying out social media marketing, with, for example, *F1* performing very much social media marketing and *F3* with hardly doing any social media marketing.

Table 1. Brands analyzed

Brand	Product category	Product
NF1	hair and body care	shampoo
NF2	femcare	tampons
NF3	childcare	diapers
NF4	home care	laundry detergent
F1	alcoholic beverages	beer
F2	alcoholic beverages	beer
F3	non-alcoholic beverages	mineral water
F4	non-alcoholic beverages	mineral water
F5	alcoholic beverages	beer

The data was taken from the year 2011, in particular, from Monday the 3rd of January 2011 to Sunday the 1st of January 2012; these exact dates had to be selected in order to compare data based on individual calendar weeks.

For each of the nine brands mentioned above both weekly sales data from the *Market Track* and the number of brand mentions per week from *My BuzzMetrics* were studied. Thus, for each brand both sales (in Euro) and the buzz for 52 time periods (weeks) were collected. Based on this data a correlation analysis was conducted. Correlation analysis is a statistical method which aims at determining whether there is a relationship between two quantitative variables, and, if this is the case, it determines the strength of this relationship.

5. Results and discussion

In the following, the empirical results of, first, all the nine brands, second, the brands from the product category food and beverages, and, third, those from the non-food category, are presented. Moreover, important marketing activities that may have contributed to an increase in brand mentions over the period analyzed are pointed out.

Our results show that when we do not differentiate between the food and beverages products, on the one hand, and non-food products, on the other hand, there is no correlation between sales and buzz ($r=-0.067$, $p\text{-value}=0.635$). Nonetheless, when we regard these two product categories separately the results draw a different picture.

5.1. Food and beverages category

When we look at the category of food and beverages products, our results show that there is a strong positive correlation ($r=0.700$, $p\text{-value}=0.000$) between the sales and social media buzz. This result was confirmed when analyzing the products of this specific category individually.

Referring to the mineral water *F4* the correlation between the sales (revenues) generated with this brand and the buzz level for this brand in social media is significant ($r=0.691$, $p\text{-value}=0.000$). For illustration purposes refer to figure 1.

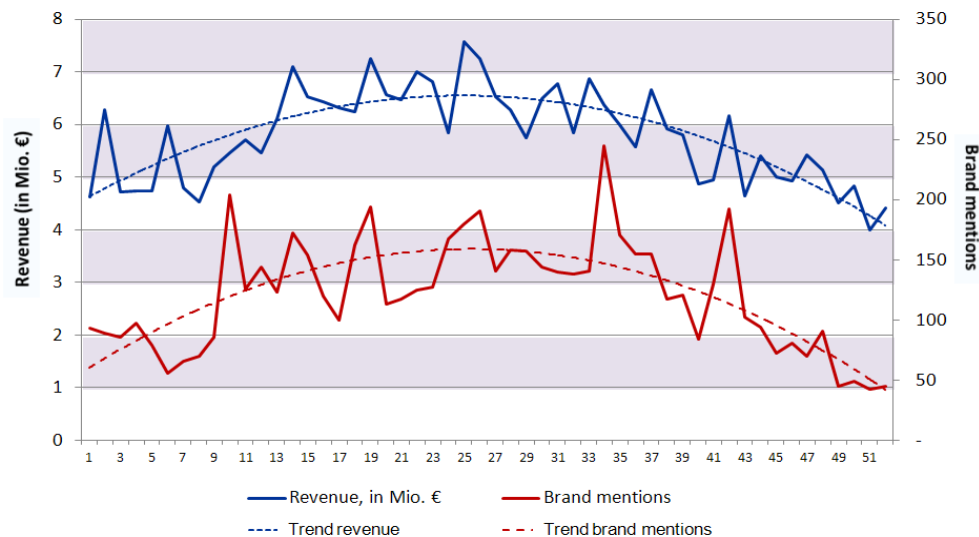


Figure 1. Revenues and brand mentions of F4

It needs to be mentioned that the sales for *F4* changed throughout the year, according to the temperature level. The warmer the weather got, the more mineral water was bought. In addition, *F4* consumers were discussing *F4*'s advertising, new product launches (new variants of flavoured mineral water), as well as the *Facebook* campaigns of its producer. Thus, we may assume that there is a relationship between the marketing activities of the producer of *F4* and the enhanced level of social media buzz.

The German beer mix *F2* shows also a positive correlation ($r=0.424$, $p\text{-value}=0.002$) between its sales and social media buzz. What is more, similar to the other beer brands analyzed in this study, beer sales in Germany seem to increase when the weather is getting warmer or during public holidays.

Furthermore, there was a sharp increase in the sales of *F2* in the Christmas week of 2011. Moreover, it could be noted that while an increase in sales, which followed directly an increase in advertising activity, was often supported by strong media buzz, a rise in sales following sales promotions and favorable weather conditions, did not find any reflections in social media buzz.

The mineral water *F3* generally shows a low level of social media buzz. Nevertheless, the positive correlation coefficient is significant ($r=0.303$, $p\text{-value}=0.029$). Similar to *F3*'s competitor *F4*, a relationship between the weather trend and the sales of *F3* could be noted. Nonetheless, *F3* was much less frequently shown on TV, or in other traditional media channels, compared to *F4*. This may have resulted in a much lower level of social media buzz in the case of *F3*.

Concerning the beer *F5* the results indicate a significant positive correlation ($r=0.312$, $p\text{-value}=0.024$) between its sales and brand mentions. In the time period analyzed, its producer launched two new products, carried out several TV campaigns, one of which featured celebrities, and invested heavily in PR. These marketing activities appear to have positively influenced the producer's brand awareness and, in turn, its social media presence.

Finally, the mixed drink *F1* showed a significant positive correlation between sales and buzz ($r=0.284$, $p\text{-value}=0.042$). During the period analyzed TV spots were shown, a viral ad campaign on *YouTube* was launched, and events, such as music festivals, were sponsored.

5.2. Non-food category

The analysis of the non-food product category as a whole does not indicate any correlation ($r=-0.008$, $p\text{-value}=0.957$) between the sales and social media buzz. This is in contrast to the positive correlation that was found between the sales and the number of brand mentions with respect to the food and beverages category pointed out above. The differences in the product categories examined may be explained by the fact that food and beverages brands are more frequently bought by consumers compared to non-food brands, and, consequently, are more likely to spark a higher level of social media attention.

When examining the products individually, we find that the results diverge according to the various products. In the following the results of the individual non-food products are pointed out.

NF1 offers a wide range of hair care products. The statistical analysis showed a significant positive correlation ($r=0.471$, $p\text{-value}=0.000$) between the sales of this brand and social media buzz. From a marketing point of view, especially the product launch of two new products in November may have increased sales, which, in turn, appear to have been supported by the increase in social media mentions.

The number of mentions of brand *NF2*, which represents tampons for women's personal hygiene, was relatively low. This result may largely derive from the fact that women's personal hygiene products are a more or less taboo topic in media. Nevertheless, the statistical analysis showed a significant positive relation

between the sales and buzz of this brand ($r=0.299$, $p\text{-value}=0.031$). It is worth mentioning that the producer of *NF2* spent a relatively low amount of money on advertising; only two commercials were shown on German TV in 2011. Furthermore, their marketing activities concentrated on women's and girls' magazines and, in general, *NF2*'s sales remained on a high level in the period analyzed. For *NF4* no correlation between sales and social media buzz could be found ($r=0.025$; $p\text{-value}=0.862$).

Similarly, the brand *NF3*, which stands for baby diapers, did not show any correlation between sales and buzz ($r=0.045$, $p\text{-value}=0.228$) either. Table 2 gives an overview of the individual results of the statistical analysis for the nine products analyzed. Furthermore, table 3 shows the statistical findings for, on the one hand, all nine products together and, on the other hand, for the two separate product categories.

Table 2. Statistical results for the individual products

Brand	Correlation coefficient buzz/sales	p-value	Average number of brand mentions per week
<i>F1</i>	0.284	0.042	12.1
<i>F2</i>	0.424	0.002	7.7
<i>F3</i>	0.303	0.029	8.5
<i>F4</i>	0.691	0.000	121.6
<i>F5</i>	0.312	0.024	10.2
<i>NF1</i>	0.471	0.000	42.2
<i>NF2</i>	0.299	0.031	14.0
<i>NF3</i>	0.045	0.228	743.1
<i>NF4</i>	0.025	0.862	194.5

Table 3. Statistical results by category

Product category	Number of brands	Correlation coefficient buzz/revenue	p-value
All products	9	-0.067	0.635
Food and beverages	5	0.700	0.000
Non-food	4	-0.008	0.957

It has to be noted that the increase in sales may have been influenced by other factors, like the enhancement of marketing activities in the form of advertising campaigns carried out in traditional media, new product launches as well as the conduction of sales promotions campaigns.

6. Conclusions and managerial implications

The purpose of this study was to explore whether there is a relation between, on the one hand, the number of brand mentions, or to put it differently, buzz, in consumer-generated social media activity, and, on the other hand, the sales of brands from the German fast moving consumer goods industry. This study was based on nine representative brands drawn from the German market. When considering all the products together no correlation could be found between the number of brand mentions and sales.

In contrast, the analysis of each individual product showed a significantly positive correlation for seven out of nine brands. In addition, whereas the statistical analysis revealed a positive correlation between the number of brand mentions and sales in relation to the food and beverages products analyzed, this was not the case in connection with the non-food products. Hence, the findings indicate that the relation between the number of brand mentions and sales depends on the product category. Hence, our results appear to confirm the findings of Davis and Khazanchi (2008) mentioned above.

In view of the empirical results above, we can conclude that the volume metric 'brand mentions' seems to be a key performance indicator for businesses in the fast moving consumer goods industry, in particular, the food and beverages product category. Hence, marketers, or market research companies, need to integrate empirical evidence of the correlation between the number of brand mentions and sales in their social media reports. This would considerably enhance the information value of such reports and allow their customers to adapt their social media strategies accordingly. Finally, marketers need to stimulate consumer-generated social media activity especially for the product category of food and beverages.

7. Limitations and directions for further research

The findings of our research have some limitations. First, the *MarketTrack* panel retrieved sales data from the German market. Yet, although *My BuzzMetrics* allows excluding brand mentions composed outside of Germany, this is not the case with *Facebook* due to the specifications of its domain. This domain does not allow distinguishing between comments from German speaking *Facebook* users located outside the boundaries of Germany, such as Switzerland and Austria, and from buzz composed in Germany. Nevertheless, the number of *Facebook* brand mentions was relatively low for the biggest part of the brands studied.

Second, social media is developing further at a high speed and, therefore, for instance, new boards, blogs, and profiles on both *Facebook* and *Twitter* are continuously created in the Web 2.0. Although *Nielsen* is trying to keep up with these changes in real time, it is practically unfeasible to track all online conversations on brands which occur in German on the internet every day.

Third, from a linguistic perspective, *My BuzzMetrics*, like any other comparable software, generally searches for a set of predetermined key words and does not take into account the complexity of the semantic context. Hence, not all brand mentions are relevant, since some of them may appear to be homonyms or spam. Spam, for instance, posed a problem especially in relation to *Twitter*. Hence, in our study we used the most precise search queries as possible to only find the relevant mentions of the brand and to eliminate spam.

Fourth, citations may distort the results, especially in discussion boards and forums. The reason is that social media monitoring software does not always recognize a citation, and the latter is then counted as an independent entry (Zaefferer 2010, p. 65). This may unjustifiably increase the number of brand mentions. The same holds true for 'spamming', where, for instance, retailers send out spam e-mails to promote their online stores. Nevertheless, *My BuzzMetrics* is constantly up-dated to filter out any possible distortions. In addition, when we came across spams we adjusted the number of brand mentions accordingly.

Finally, it has to be mentioned that effective social media research should be based on a combination of different types of metrics, that is, volume, valence, and dispersion metrics, to collect reliable information on the awareness of a brand and its acceptance by customers. This view is supported by Peters et al. (2013, p. 294) who suggest considering both qualitative and quantitative issues as well as both the state and dynamics when applying metrics in social media research. For that purpose, changes in sentiment may be explored or the proportion between the positive brand mentions of a particular brand and the total number of its mentions may be calculated (Barry et al. 2011). Moreover, the active engagement, or the percentage of engagement activities, such as comments, 'shares', and 'likes' (Peters et al. 2013, p. 292) may be used to measure the effects a social media program exerts on customer loyalty (Barry et al. 2011, p. 3). In order to determine the reliability of the different social media metrics other analyses need to be produced.

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