**How to Grow Brand Post Engagement on Facebook and Twitter for Airlines?
An Empirical Investigation of Design and Content Factors**

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Abstract

Airlines are increasingly using social media for initiating and sustaining consumer brand engagement through interaction and sharing. This study introduces a conceptual model on brand post engagement on social media and contributes to extant knowledge on the effectiveness of the determinants of such engagement in the airline industry. Facebook brand posts of a major Nordic airline published between 2011 and 2015 (242 posts), and Twitter brand posts from 2012 to 2016 (143 tweets), were collected, categorized and analyzed based on their design and content. Our models explain 52 and 58 percent of the variance in likes for Facebook and Twitter respectively. Our models also show strong results for shares/retweets and explain 42 and 53 percent for Facebook and Twitter, respectively. Moreover, the results show that an "entertaining" content is a key determinant of consumer brand post engagement on both social media platforms. The study points out the distinction between consumer brand post engagement on two of the biggest social media platforms and thus, provides a guide for the design and content of messages that could be used by airlines in building consumer engagement on Facebook and Twitter.

Keywords: Social media platforms; brand post; consumer engagement; design and content strategy

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1. Introduction

Social media grew phenomenally in just a few years. Users spent as much as 135 minutes on average per day on social networking sites in 2017, increasing from 90 minutes in 2012 (GlobalWebIndex, 2017). Since brands go where the consumers are (Ashley & Tuten, 2015), brands also increased their priority for social media marketing in recent years (He, Zhab, & Li, 2013). Using social media is not only a relatively inexpensive communication approach (Parveen, Jaafar, & Ainin, 2015), it also opened up new opportunities for brands to extract value from existing and potential consumers by providing new ways for brands and consumers to engage with each other (Kabadayi & Price, 2014). Many consumers follow brands they like on social media, and can respond easily when brands post content on their official social media platforms by "liking", commenting, and/or sharing the content in their network. The air transport industry is not an exemption. Airline companies have largely adopted social media (Grančay, 2014), and many of them have a strong and highly interactive presence on both Facebook and Twitter (Dijkmans, Kerkhof, Buyukcan-Tetik & Beukeboom, 2015). As passengers use of airlines' social media is expected to increase in the years to come, so is airlines use of social media marketing (Seo & Park, 2018). Research on the air transport industry demonstrates that airlines' utilize social media for many purposes, including customer service, brand building/consumer engagement, and providing relevant offers and deals (Bygstad & Presthus, 2012; Gal-Tzur, Grant-Muller, Minkov & Nocera, 2014; Grančay, 2014; Leung, Schuckert, & Yeung, 2013; Parveen, Jaafar, & Ainin, 2015).

According to Kumar, Bezawada, Rishika, Janakiraman, and Kannan (2016), a dedicated fan base can significantly strengthen consumer–brand relationships and has a positive impact on consumer spending. For an airline, social media marketing activities has been shown to affect brand awareness and brand image, how passengers perceive the airline and to what extent they will post positive comments about, and recommend, the airline on social media (Seo & Park, 2018). Reactions (judgment and feelings) and relations the consumers form about an airline brand, and thus the airlines brand equity, is increasingly based on exposure to the airlines social media content (Dijkmans, Kerkhof & Beukeboom, 2015; Dijkmans, Kerkhof, Buyukcan-Tetik & Beukeboom, 2015). This shows the importance of air transport carriers being active on social media in engaging consumers. Top brands seem to focus on Facebook and Twitter, the two most important social media platforms on which users share content (Statista, 2019).

Liking, commenting, and sharing brand posts on social media are behavioral manifestations of consumer engagement (Van Doorn et al., 2010), and critical for a brand's overall social media engagement strategy (Kabadayi et al., 2014). Although academic research on consumer engagement on social media has increased lately (see e.g. Kumar et al., 2016; Lee, Hosanagar, & Nair, 2018; Seo & Park, 2018), the impact of brand post design and content on a wider set of consumer engagement behaviors are still not very well understood (Luarn, Lin, & Chiu, 2015). Earlier studies on factors driving consumer engagement behaviors seem to limit their attention to liking and commenting behaviors (e.g. De Vries, Gensler, & Leeflang, 2012; Kabadayi & Price, 2014; Sabate, Berbegal-Mirabent, Cañabate, & Lebherz, 2014), and/or to engagement behaviors related to only Facebook fan pages (e.g. Kabadayi & Price, 2014; Leung et al. 2013; Tafesse, 2015). Further, research in the air transport industry

demonstrates that airlines' social media approach can be different both within a segment (Leung et al., 2013) and across segments (Bigne et al., 2018; Gal-Tzur, Grant-Muller, Minkov & Nocera, 2014; Seo & Park, 2018). This points to a need for more research on factors influencing consumers' engagement to brand messages from different types of air transport carriers, which include, but are not limited to, empirical examinations of brand posts on Facebook and Twitter. Methods used in studies on social media in the airline industry vary including but not limited to consumer surveys (Bigne et al., 2018; Dijkmans et al., 2015a,b; Seo and Park, 2018), interviews with airline managers (Parveen, Jaafar & Ainin, 2015), and content analysis and Web content mining/text mining (Bygstad & Presthus, 2012; Leung et al., 2013; Grančay, 2014). In the current study, we examine real brand posts from an airline and analyze how different types of posts content affects consumers' engagement behavior. Except for Leung et. al. (2013), there has been few attempts to analyze airlines' social media brand posts in terms of consumers' engagement behaviors. While Leung et al. (2013) analyze Facebook posts related to three low-cost airlines, we analyze Facebook and Twitter brand posts from Icelandair, a major Nordic airline. Icelandair has positioned itself as an airline offering a combination of low fares and full-service. According to O'Connell and Williams (2005), such a positioning creates an ideal scenario for passengers. Operating approximately 600 flights carrying 12,000 passengers every day (Icelandair, 2018), their business strategy is centered around its geographic location of Iceland, midway between northern Europe and the east coast of the United States of America, where it connects 23 gateways from North America to 24 gateways in Europe with Iceland serving as a hub (Icelandair, n.d.). Icelandair has a very active and progressive social media marketing strategy. They predominantly use social media to drive customer engagement and create brand awareness. The company

also uses Facebook as a proactive platform which encourages consumers to report any problems or suggest ways to improve its services. Icelandair's social media strategy reflects its business strategy in that the social media team is not excluded from other teams or divisions, and thus well aware of overall operations (H. Ágústsson, personal communications, April 8, 2015). Based on the data from Facebook and Twitter, we investigate "likes," "comments," "shares," "replies", and "retweets" as the key dependent variables. The study offers a preliminary set of dimensions for comparing consumers' brand post engagement on the two different social media platforms. Seo and Park (2018) suggest based on their study that airlines should induce customers to interact more actively by developing more interesting social media marketing activities. Thus, the current study contributes on providing such insights as it investigates what type of content make consumers more likely to engage with brand posts on both Facebook and Twitter in the context of a major Nordic airline.

The paper has four parts. After reviewing the literature on social media engagement, Section 2 describes the conceptual framework and derives the hypotheses. Section 3 describes the method and Section 4 discusses and summarizes the findings. The paper concludes with managerial implications and directions for future research.

2. Theoretical framework and hypotheses

2.1. Social media and consumer brand post engagement

Consumers' brand post engagement in social media is largely driven by content (Dessart Veloutsou, & Morgan-Thomas, 2015), which must be relevant and of high quality to engage the consumer and build meaningful relationships. Firms must design and develop content that can encourage consumer engagement, conversation, and discussion (Heinonen, 2011), which in turn fosters strong relationships. An engaging

content increases the likelihood of reaching more consumers through likes, comments, and shares (Lipsman, Mud, Rich, & Bruich, 2012; Cvijikj & Michahelles, 2013). This follows the fact that when consumers are highly engaged with a media vehicle they often become more responsive to its marketing communications (e.g., Cunningham, Hall, & Young 2006). Each social media platform plays a different role in developing consumer relations with a brand. For instance, Facebook could help enhance consumer experience while Twitter could improve interactivity (Alalwan, Rana, Dwivedi, & Algharabat, 2017). Understanding how engagement differs between these platforms, and how best to cultivate consumer engagement are invaluable for marketers interested in brand co-creation across different social media platforms.

Apart from being a key metric for gauging brand performance (Bowden, 2009; Kumar et al., 2010), consumer engagement can increase sales growth and brand referrals (Bijmolt et al., 2010), and contribute to retention and loyalty by affecting consumer experience (Verhoef, Reinartz, & Krafft, 2010). Recent studies have examined the motivations (e.g. Hoffman & Fodor, 2010) and consequences (e.g. Chen & Xie, 2008; Godes & Mayzlin, 2009) of consumer engagement on social media. However, most of the studies on consumer brand engagement are mainly exploratory in nature and lack empirical foundation (Hollebeek, Glynn, & Brodie, 2014) except De Vries, Gensler, & Leeflang, (2012), Tafesse, (2015), Luarn et al., (2015), He et al., (2013), and Lee et al., (2018) who investigated the factors driving consumer engagement with brand posts in terms of the number of likes, comments, and shares. In the present study, using two social media platforms, we introduce a conceptual model (see Figure 1) based on our understanding from previous literature (De Vries et al, 2012; Tafesse, 2015; Luarn et al., 2015; He et al, 2013, Lee et al., 2018), that if a brand post is

designed well and has relevant content, then this, ceteris paribus, would lead to an increase in consumer brand post engagement. Therefore, the independent variables pertaining to the design element in this study were vividness and interactivity, and the ones pertaining to the content element were classified as informative, entertaining, promotional, social, and remunerative. The dependent variables were shares, comments, likes, replies, and retweets. In addition to day of the week and message length of brand post, which were the control variables in De Vries et al. (2012), we also control for position, boost, fans, and the number of paid impressions. In the next section, we elaborate on the variables used in the study and justifications for hypotheses are provided.

[Insert Figure 1 about here]

2.2. Design factors

Adding vivid and interactive characteristics can increase the salience of brand posts (De Vries et al., 2012). Steuer (1992) defines vividness as being related to the breadth and depth of a message. "Breadth" signifies the number of sensory dimensions being stimulated by the content such as sound, pictures, color etc. "Depth" showcases the quality of the content and the resolution presented. Social media content varies in the level of vividness it exhibits. For example, a brand post can include texts, pictures with animations, or videos. The vividness on social media does not differ from traditional channels (Luarn et al., 2015). High vividness had a positive effect on attitudes towards websites (Fortin & Dholakia, 2005) as well as with social media (Luarn, et al., 2015; Sabate et al., 2014). Higher vividness was also found to increase users' sense of immersion and motivation to visit the websites (Coyle & Thornson, 2001). Therefore,

H1. Higher vividness results in higher consumer brand post engagement.

Interactivity is "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 & Shrum, 2002, p. 54). Social media communications are highly interactive and are revolutionizing how brands communicate with consumers (Kaplan and Haenlein, 2010). The posts on social media platforms however, differ in interactivity. For example, a post that includes a question is more likely to elicit a reaction than a post that includes only a simple statement. A post that includes a link would also be more interactive, since the reader would be motivated to click on the link and react in some way to the posted content. Cho and Lee (2011) find that interactivity increases users' perceived value of their social media activities. The more interactive content users engaged with, the more they felt that they were participating in something meaningful. Users also developed a more positive attitude towards more interactive websites and were more likely to keep visiting these websites (Coyle & Thornson, 2001). Thus,

H2. Higher interactivity results in higher consumer brand post engagement

2.3. Content factors

Finding information is an important motivation for users to interact, express, share, and create content on a fan page (Muntinga, Moorman, & Smit 2011). Consumers with high informational needs are more likely to engage in human-message interactions such as viewing a website, clicking on links, and using multimedia features (Ko, Cho, & Roberts, 2005). Cvijikj and Michahelles (2013), de Vries et al. (2012), and Lee, Hosnager, and Nair (2013) demonstrate the impact of informational content on consumer engagement empirically. Cvijikj and Michahelles (2013) find that posts with brand-related information increased engagement in the form of likes

and comments, but did not have any impact on the number of shares. This contradicts De Vries et al.'s (2012) finding that brand posts with informative content have no influence on the number of comments. Lee et al. (2018) find that informational content combined with persuasive attributes such as company logos and celebrity endorsements increase consumer engagement, while similar informational content in isolation decreases engagement. This study defines informative posts as those containing information about a company or its brand and/or services, including important announcements to consumers. Posts containing relevant information about the company/brand and/or its products should have a positive impact on brand post engagement. Therefore,

H3. Posts with informational content results in higher consumer brand post engagement.

An important dimension of fan page content is that it is entertaining; however, while it provides enjoyment, it does not need to be related to the product or brand. Cvijikj and Michahelles (2013) find that entertainment content increased consumer engagement through likes, comments, and shares the most. Other scholars (Ashley & Tuten, 2015; Kang & Lee, 2010) emphasize that fan pages are a pleasure-oriented information system, where users are more motivated to visit the pages repeatedly if they perceive more enjoyment from it. Muntinga et al. (2011) state that entertainment in a brand post leads users to consume, create, or contribute to brand-related content. Therefore,

H4. Posts with entertainment content results in higher consumer brand post engagement

Hong (2011) describes "promotional" posts as involving a contest, coupon, or any type of offer aiming to attract attention from Facebook users to encourage some form

of participation. While many companies use social media as a tool to acquire consumers by running promotional campaigns on social media, little has been explored on the empirical consequences of promotional content in real world, field settings (Lee et al., 2018). However, such campaigns do not make full use of the interactive capabilities that the social media platforms have to offer, thereby resulting in lower consumer engagement (Malthouse et al., 2013). A recent study by Lee et al. (2018) found that direct informative content that mentions price, availability, and other deals or promotions result in lower consumer engagement. This study categorizes posts as promotional if they include various offers and marketing campaigns. Hence, traditional promotional content such as digital advertisements will have a negative impact on brand engagement because they violate the expectations that users have when visiting a fan page. Thus,

H5. Posts with promotional content results in lower consumer brand post engagement

 "Social" posts are those aiming to encourage users to participate in an activity, mainly by asking a question or inviting direct feedback from users rather than by providing entertaining content or information (Hong, 2011). Social posts provide enough information to evoke user feedback. Gaber and Wright (2014) use the term engaging content for posts that others have described as "social" posts. Their definition of engaging content is that it calls for users to act in some way or perform a certain action, i.e., they are encouraged to engage with the post. Gaber and Wright (2014) use the term engaging content for posts that others describe as "social" posts, with the same purpose of calling for users to act in some way, such as asking users to rate their favorite sandwiches and drinks, or name a favorite bank branch, or the post may include some kind of contest. Entertaining posts can look similar to "social" posts, but are posted to give users pleasure rather than stating what is at the top of the

airline company's agenda. In the present study, "social" posts are those that give notice of and report events or some social activities, and include open questions meant to encourage activities among users. Accordingly,

H6. Posts with higher level of social content results in higher consumer brand post engagement.

Muntinga et al. (2011) report remuneration as one of the three motivations for consuming brand-related content, along with information and entertainment. Remuneration content provides economic benefits and capture attention using contests, coupons, and other offers. Social media contests are increasingly popular, and companies use them to disperse brand messages and build awareness, thereby using them as a powerful and unique way to engage consumers (Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013). Cvijikj and Michahelles (2013) find that posts with remunerative content were negatively related to the number of likes, but positively related to the number of comments. In contrast, Luarn et al. (2015) find that remunerative posts were highly influential in engaging consumers though likes, but had no effect on comments and shares. Social media content focusing on remunerative aspects may be particularly effective if coupled with a good prize, and a higher reward should increase brand engagement (Nisar & Whitehead, 2016). Therefore,

H7. Posts with remunerative content result in higher consumer brand post engagement.

3. Method

3.1. Sample

This study analyzes data composed of 242 Facebook posts (January 2011 – January 2015), 143 Twitter posts (October 2012 – March 2016), and their comments on

Icelandair's brand page. The reason for the difference in the time periods between Facebook and Twitter posts is that Twitter posts before October 2012 were not available for Icelandair. Facebook post engagement is measured by the number likes, comments, or shares by Facebook users, and Twitter post engagement is measured by the number of likes, comments, or retweets by Twitter users.

3.2. Operationalization of variables

3.2.1. Design variables

Operationalization of vivid and interactive brand post characteristics included three levels (none, low, and high) and four levels (none, low, medium, and high), respectively. A link to a website was categorized under low interactivity, a call to action such as urging brand fans to do something was categorized under medium interactivity, and a question or a quiz was categorized under high interactivity. Furthermore, in the case of low interactivity, the links include only those that are not directed to the company's own website, though most were direct links to its home page.

3.2.2. Content variables

Informative posts contain information about the company, the brand and/or its services, and important announcements to consumers. Entertainment posts create interest among users, such as interesting pictures, photos, and videos, or trivia or content that aims to educate users about topics in an interesting way. Promotional posts involve various advertising campaigns, while remunerative posts involve sales promotions. Social posts are those that involve social activities such as social events,

sport events, open questions to fans regarding daily activities, and humanitarian work.

3.2.3. Control variables

Consumer internet search activities fluctuate by day of the week. Consumers engage in more Internet searches on weekdays, with most activity on Monday and the least activity during the weekends (Rutz & Bucklin, 2011). This can affect consumer brand engagement, so the study includes the day of the week as a control variable. According Drèze and Hussherr (2003), the position of a banner ad has a positive effect on the attention paid to the ad. More recent brand posts receive more attention because they appear on the top of the page, which can affect consumer engagement, irrespective of its design and content. Therefore, this study includes the position of a brand post as a control variable. Boost is a control variable that indicates whether the company paid for the post to appear higher in a user's news feed or on the news feeds of non-fans, and will therefore affect engagement. The control variable fans are the number of fans the airline company had at the time of each post. Since the number of fans plays a large part in determining how many users will see the post, it is positively related to engagement. Impressions measure the ability to expose content, indicating not only content reach, but also the frequency with which users see the content (Smitha, 2013). This study includes the number of paid impressions as a control variable because paid content invariably boosts the content reach, thereby influencing consumer engagement.

3.3. Procedure

The three dependent variables as indicators of Facebook and Twitter brand post engagement are count data that follow a Poisson distribution (Cameron &

Trivedi, 2005). Equations 1 and 2 describe the models and Table 1 summarizes the definitions for each variable.

$$y_{ij}=\alpha+\exp\left(\begin{array}{c}\sum_{f=1}^{2}\beta_{f}\text{vivid}_{fj}+\sum_{g=1}^{3}\beta_{g}\text{ia}_{gj}+\beta_{i}\text{info}_{j}+\beta_{e}\text{entertain}_{j}+\beta_{p}\text{promotion}_{j}+\beta_{s}\text{social} \\ +\beta_{w}\text{weekd}_{j}+\beta_{o}\text{pos}+\beta_{t}\text{text}_{j} \\ +\beta_{b}\text{boost}_{j}+\beta_{n}\text{fans}_{j}\end{array}\right)+\varepsilon_{ij} \qquad (1)$$

$$y_{ij}=\alpha+\exp\left(\begin{array}{c}\sum_{f=1}^{2}\beta_{f}\text{vivid}_{fj}+\sum_{g=1}^{3}\beta_{g}\text{ia}_{gj}+\beta_{r}\text{remun}_{j}+\beta_{p}\text{promotion}_{j}+\beta_{i}\text{info}_{j}+\beta_{e}\text{entertain}_{j} \\ +\beta_{s}\text{social}+\beta_{f}\text{followers}_{j} \\ +\beta_{m}\text{paidimpre}_{j}+\beta_{w}\text{weekd}_{j}+\beta_{o}\text{pos}_{j}\end{array}\right)+\varepsilon_{ij} \qquad (2)$$

The OLS regressions take the natural logarithm of the dependent and independent count variables.

[Insert Table 3 about here]

3.4. Inter-observer agreement

This study uses an inter-observer agreement test to affirm the categorization of Facebook posts. Two individuals independently evaluated and categorized a random sample of 50 posts from the dataset into one of the four post types. The results were then compared to find the number of agreements and disagreements about the post types. The inter-observer agreement was 84%. For Twitter brand posts, the Cohen's Kappa test for agreement between the two coders' judgement on the categories for 143 tweets indicated clear agreement between the coders k= .810 (Viera & Garrett, 2005) with a statistically significant coefficient ($p < 0.0005$).

4. Results and discussion

The results from the two regression models are shown on Table 2, for Facebook, and Table 3, for Twitter. On average, about 87% of the Facebook brand posts contain vivid content (from low to high) and 39% of them contain interactive content. In terms of

post type, 33.9% include social content, 29.8% of are promotional posts, 27.3% are informative, and 14.5% have entertaining content. On Twitter, 67.1% and 89.5% of the posts contain vivid or interactive content. By post type, 34.97% are informative, 12.59% are entertaining, 24.48% are promotional, 18.88% have social content, and 9.9% are remunerative. The following sections explain in detail, the impact of the design and content factors on Facebook and Twitter.

4.1. The impact of design and content on consumer brand engagement on Facebook

Table 2 shows the results from the factors influencing consumer engagement on Facebook. The model in Equation 1 to explain the number of likes (F-value $=19.616$, p-value < 0.01, $R^2 = 0.55$, adj. $R^2 = 0.52$), comments (F-value $= 2.832$, p-value $<$ 0.01, $R^2 = 0.15$, adj. $R^2 = 0.10$), shares (F-value $= 13.406$, p-value < 0.01, $R^2 = 0.45$, adj. $R^2 = 0.42$) is significant overall and explains the variance within these three engagement variables relatively well for likes and shares, but not so much for comments. As seen in Table 2, the design and content variables clearly have different effects on the components of consumer brand post engagement. This is in line with the literature (e.g., De Vries et al., 2012; Luarn et al., 2015; Tafesse, 2015), but the explained variance is higher, perhaps stemming from the fact that our dataset only focused on the aviation industry and other studies provide aggregate data from different industries.

[Insert Table 2 about here]

4.1.1. Design factors for Facebook

The low level of vividness (i.e., pictures) is significantly related to the number of likes ($\beta_{picture} = 0.645$, p-value < 0.05), though the high degree of vividness (i.e.,

video) is not related to the number of likes. The low level of interactivity (i.e., website link) is significantly and negatively related to the number of likes (β_{link} = -0.812, p < 0.10). The low level of vividness is not significantly related to the number of comments, but the high level of vividness is marginally significant and negatively related to the number of comments (β_{video} = -1.730, p-value < 0.10). The low and medium levels of interactivity (i.e., website link and call to action) are not significantly related to the number of comments. The high level of interactivity (i.e., question) is, however, very significantly and positively related to comments ($\beta_{question}$ = 1.451, p-value < 0.05). The low and high levels of vividness are both strongly significant and positively related to the number of shares ($\beta_{picture}$ = 3.494; β_{video} = 3.985, p-value < 0.05). The low, medium, and high levels of interactivity (i.e., website link, call to action, and question) are not significantly related to the number of shares.

4.1.2. Content factors for Facebook

The medium and high interactive media types are not significantly related to the number of likes. Providing information in a brand post is not significantly related to the number of likes. Entertaining posts are very significant in terms of the number of likes ($\beta_{entertaining}$ = 1.010, p-value < 0.05). Promotional posts are significantly and negatively related to the number of likes ($\beta_{promotional}$ = -1.176, p-value < 0.05). However, posts that include social content are not significantly related to the number of likes. Whether a brand post is informative, social, or promotional has no influence on the number of comments, though entertaining brand posts are strongly significant and positively related to the number of comments ($\beta_{entertaining}$ = 3.685, p-values < 0.05). Providing informative, social, or promotional content in a brand post is not

significantly related to the number of shares, though entertaining content is ($\beta_{entertaining}$ = 4.021, p-values < 0.05).

 4.2. Increasing consumer brand post engagement on Facebook

The literature shows that the most common brand posts on airlines' Facebook pages are news and interesting facts about the airline, seat sales, photographs of aircraft in company livery, updated information about operations, new destinations, and quizzes (Grančay, 2014). The findings reported by Leung, Schuckert, & Yeung (2013) further demonstrate that airlines have adopted a different social media approach, and that what works for one airline not necessarily works for another airline. It is therefore important for any airline to analyze how their fans engage with different types of post design and content. For Icelandair , the results are mixed in terms of the effectiveness of message design and content on social media engagement (Table 4). Low vividness exhibit a positive significant relation to the number of likes and shares, but no effect on comments. High vividness has a significant negative relationship with comments and a significant strong positive relationship with shares. This is contrary to Cvijikj and Michahelles (2011, 2013) and de Vries et al. (2012), who propose a positive relationship between vividness and post engagement. The results also show that highly vivid content works well for the airline in the current study to engage consumers. A statistically significant positive relationship exists between the number of comments and high interactivity level. This might be because a question naturally encourages fans to give an answer and the only way to do so is to comment. de Vries et al. (2012) reach the same conclusion after finding a positive relationship between the number of comments and high level of interactivity. The results therefore support asking open-ended questions to engage consumers and to increase the organic reach of posts. The results show a negative relationship (significant at the 10% level)

between low level of interactivity and the number of likes, possibly because posts that contain a link direct fans to other websites that are not necessarily related to the brand. Fans might be more interested in the brand itself or something related to it, and thus not very motivated to follow the link. This implies that companies should focus more on their own content as much as possible rather than directing consumers to other websites or external content not related to the brand itself.

Entertaining content is most related to brand post engagement because it has a significant relationship to all three dimensions, perhaps because some users like to use Facebook as a way to find entertaining content. Entertainment is the only additional variable significantly related to likes, apart from promotion, which has a significant negative relation to the number of likes. This is in line with dogmatic social media marketing practice arguing that users tend to use social media to socialize and entertain themselves, and therefore do not favor interruption-based forms of promotion. The three low-cost airlines in the study of Leung et al. (2013) posted mostly promotional brand posts (special fares, new route promotions, and new apps promotion). Although we cannot directly compare the results in the current study with their findings due to e.g. categorization differences, their results do indicate that promotional posts might work for low-cost airlines to engage fans. For instance, Leung et al. (2013) found that AirAsia used the majority of posts to promote tickets and that such posts also were the most popular posts among their users in terms of likes, shares and comments. However, other studies (Shen & Bissell, 2013; Swani et al. 2013; Hong, 2011) show, similar to our findings, that promotional posts tend not to be popular amongst users, while entertaining posts usually are. This is also in line with Facebook's policy, which focuses on reducing the number of unpaid promotional posts. The findings related to increasing the number of comments is in

line with de Vries et al. (2012), as well as general findings by leading research firms on social media marketing (e.g., Elliot, 2011); highly interactive brand posts, or more specifically, asking a question, is related to an increase in comments. This agrees with the view that engagement and an interest in user conversations are some key aspects of social media marketing using Facebook (Elliot, 2011).

4.3. The impact of design and content on consumer brand engagement on Twitter

The model in Equation 1 to explain the number of likes (F-value =14.976, p-value < 0.001, R^2 = 0.62, adj. R^2 = 0.58), replies (F-value = 5.838, p-value < 0.001, R^2 = 0.39, adj. R^2 = 0.32), and retweets ((F-value = 12.282, p-value < 0.001, R^2 = 0.58, adj. R^2=0.53) is significant overall. Table 3 provides an overview of results for the components of consumer brand post engagement on Twitter. The table illustrates that different tweet characteristic yield different results.

[Insert Table 3 about here]

4.3.1. Design factors for Twitter

The low level of vividness is significant and positively related to the number of likes (β_{pic} = .888, p-value<0.001), but the high degree of vividness is not. All three types of interactive tweets (low, medium, and high) are not related to the number of likes. Both low and high levels of vividness are not related to the number of replies, nor is the level of interactive tweets. The low level of vividness is significant and positively related to the number of likes (β_{pic} = 0.370, p-value<0.001). However, the high degree of vividness is not related to number of retweets. None of the levels of interactive tweets are related to the number of retweets.

4.3.2. Content factors for Twitter

All tweet types, namely, information ($\beta_{info} = 3.327$, p-value<0.001), entertainment ($\beta_{entain} = 3.728$, p-value<0.001), promotion ($\beta_{promo} = 3.691$, p-value<0.001), social ($\beta_{social} = 3.270$, p-value<0.001), and remuneration ($\beta_{remun} = 3.404$, p-value<0.001, are significant and positively related to the number of likes. All tweet types, information ($\beta_{info} = 2.923$, p-value<0.001), entertainment (β_{entain} 2.882, p-value<0.001), promotion ($\beta_{promo} = 2.859$, p-value<0.001), social ($\beta_{social} = 2.544$, p-value<0.00), and remuneration ($\beta_{remun} = 2.787$, p-value<0.001), are significant and positively related to the number of replies. Informational ($\beta_{info} = .487$, p-value<0.05), entertaining ($\beta_{entain} = .644$, p-value<0.01), and promotional ($\beta_{promo} = .442$ p-value<0.05) tweets are significant and positively related to the number or retweets, whereas tweets that contain social or remunerative content are not.

 4.4. Increasing consumer brand post engagement on Twitter

Our results show the distinct nature of Twitter from Facebook. Low vividness (picture) exhibit a positive significant relation to the number of likes and retweets, but did not have any effect on replies. The number of likes and retweets is a signal of consumer engagement and thus constitute an important metric for managers. High vividness (video) did not have any significant effect on consumer brand post engagement on Twitter. Unlike YouTube and Facebook where the users are encouraged to broadcast themselves, Twitter's unique architecture, culture and subtle nature is focused more on promoting conversation than self-presentation (Kietzmann, Hermkens, McCarthy & Silvestre 2011). Our results indicate that pictures will resonate more with consumers than videos, which is in line with the current trend where memes circulate more widely on Twitter than on any other social media platform. The increased retweeting of pictures might also be explained by the fact that people more often use Twitter to spread news (Smith et al., 2012). None of the

interactive messages, be it low, medium, or high, did not have any effect on likes, replies, or retweets on Twitter.

Tweets commonly ask for news, information, opinions, or details about daily activities (Smith et al., 2012). The results from our study shows that informative, entertaining, and promotional posts on Twitter have a significant positive relation to likes, comments and shares. Our results are also in line with Liu, Burns, and Hou (2017) who show that product, service, and promotions are the primary consumer concerns when consumer interacts with a brand on Twitter. Therefore, it is expected that consumers will interact more with posts that have informative, entertaining and promotional content through likes, replies, and retweets. The results also indicate that proactive brands could use Twitter to effectively communicate and build positive consumer engagement at all levels. Such an engagement need not be focused on brand-related tweets, but to provide interesting and engaging content to consumers.

[Insert Table 4 about here]

5. Managerial implications

Consumers' brand post engagement in form of liking, commenting, and sharing, can strengthen the reach and impact of an airline's brand posts. Consumer engagement helps to trigger favorable behavioral intentions towards the airline brand (Hapsari et al., 2017), affects how consumers perceive an airline's reputation (Dijkmans et al., 2015b), and influences the extent to which consumers will recommend the airline on social media (Seo & Park, 2018). It is therefore important for airlines to measure consumer engagement in relation to each of their brand posts, and to determine the effectiveness of different types of brand posts on their fans engagement behaviors. Similar to De Vries et al. (2012), our findings suggest that different media and post

types can have varying effectiveness within different dimensions of consumer brand post engagement. This points to the necessity for airlines to use the model to empirically test their own contingencies of brand post engagement, not only on Facebook and Twitter, but also for other social media platforms. The main findings in this study do not replicate the aggregated findings presented in the De Vries et al., (2012) study. We believe that the brand post engagement framework, initiated by De Vries et al (2012), and further enhanced in the current paper provides a structure for further development within this research area. Further research could explore the effect of additional variables such as the latest trends in rich media, or any other relevant variables or intermediaries for different social media platforms. For effective content management, airline managers should create their own version of the framework and empirically test the effectiveness of different content on their page or pages. Continuous testing is also critical for further academic development as well as the success of a content strategy given the constantly evolving parameters in social media marketing. Additionally, findings from different firms within the same and different categories require further testing before making any general assumptions.

However, this study has limitations. The study focused on the airline industry, which rarely uses posts containing voting, contests, or a quiz, so this study excluded these variables. Furthermore, the variable for website link as a low interactivity element included only those that were directed away from the company's own website. It would be interesting to extend this study to other social networking sites. Despite these limitations, this study enhances de Vries et al.'s (2012) conceptual framework by adding shares as a third and perhaps most important measure of brand post engagement. Due to the different findings within these three dimensions of the same factor, the added dimension as an indirect measurement of engagement can give

managers or researchers more information. However, the number of shares is also an important direct goal for companies engaged in social media marketing, especially after the changes to Facebook's Edgerank algorithm in October 2013. This diminished organic reach for many brands dramatically, thereby reducing the value of likes because users are less likely to see the brand post in their news feeds. Hence, relevant content, more shares, and other viral activities are all important because they often create more reach than the organic reach does through likes. The findings show that in the case of an international airline company, increasing the vividness of the brand posts with pictures and videos is related to increased sharing. This is in line with managers' emphasis on vividness, as pictures and videos seem to be an even more important part of the Facebook experience, constantly occupying more space on the page.

This research extends the ongoing research on social media, especially those focusing on how firms can use social media effectively to maintain and grow consumer relationships. Future studies could enhance the model and findings by applying it to different industries and including additional variables.

Tables and figures

Table 1. Definition of variables.

Variable	Explanation
y_{ij}	y_{1j}, y_{2j} and y_{3j}: are the number of likes per brand post j, number of comments per brand post j and number of shares per brand post j, respectively y_{1j}, y_{2j} and y_{3j}: are the number of likes per brand tweet j, number of replies j and number of retweets per brand tweet j, respectively
$vivid_{fj}$	dummy variable indicating whether the vivid characteristic f at a brand post and brand tweet j were present or not (baseline category is no vividness)
ia_{gj}	dummy variable indicating whether the interactive characteristic g at a brand post and brand tweet j were present or not (baseline category is no interactivity)
$info_j$	dummy variable indicating whether brand post and brand tweet j are informative (base category is no information)
$entertain_j$	dummy variable indicating whether brand post and brand tweet j are entertaining (base category is no information)
$promo_j$	dummy variable indicating whether brand post and brand tweet j are promotional (base category is no information)
$social_j$	dummy variable indicating whether brand post and brand tweet j are social (base category is no information)
$remun_j$	dummy variable indicating whether brand tweet j is an incentive (base category is no incentive)
$followers_j$	count variable indicating the number of followers at the time a brand tweet j was tweeted
$weekd_j$	dummy variable indicating whether brand post j was placed during weekdays (base category is weekend)
$text_j$	indicating the number of words of brand post j
$position_j$	count variable indicating the position of the brand post and brand tweet by the number of days the post and tweet j were at the top of the brand page
$boost_j$	dummy variable indicating whether brand post j was boosted (base category is no boost)
$fans_j$	Indicating the number of fans at the time brand post j was posted
$PaidImpress_j$	count variable indicating the number of additional impressions that the brand tweet j received, because the company paid for additional impressions
ε_{ij}	ε_{1j} or ε_{2j} or ε_{3j}: normally distributed error terms for dependent variable y_{1j} or y_{2j} or y_{3j} respectively

Table 2. Results for consumer brand post engagement on Facebook

All posts			Log Likes	Log Comments	Log Shares
			All posts	All posts	All posts
Vividness	No	(baseline)	-	-	-
	Low	Picture	0.645*	-0.483	3.494*
	High	Video	0.163	-1.73**	3.985*
Interactivity	No	(baseline)	-	-	-
	Low	Link website	-0.812**	-2.129	-2.091
	Medium	Call to act	0.564	1.672	0.003
	High	Question	0.218	1.451*	0.029
Information		No information (baseline)	-	-	-
		Information	0.100	2.142	-0.111
Entertainment		No entertainment (baseline)	-	-	-
		Entertainment	1.01*	3.685*	4.021*
Promotion		No promotion (baseline)	-	-	-
		Promotion	-1.176*	1	-2.241
Social		No social (baseline)	-	-	-
		Social	0.044	1.376	-0.007
Control variables		Weekdays	0.427	-0.256	0.129
		Fans	0.955*	0.795*	3.195*
		Boost	0.760*	0.672	2.823*
		Message length	-0.008	-0.077	0.144
		Position	0.028	-0.086	-0.105
Constant		N	242	242	242
		F-value	19.616*	2.832*	13.406*
		R2	0.547	0.149	0.453
		Adj. R2	0.520	0.097	0.419

Note: We report unstandardized coefficients.

$*p < 0.05$. $**p < 0.10$

Table 3. Results for consumer brand post engagement on Twitter

All posts			Log Likes	Log Replies	Log Retweets
			All posts	All posts	All posts
Vividness	No	(baseline)	-	-	-
	Low	Picture	0.888***	0.356	0.370***
	High	Video	-0.040	-0.361	0.028
Interactivity	No	(baseline)	-	-	-
	Low	Link website	-5.150	-0.148	0.045
	Medium	Call to act	-	0.279	0.115
	High	Question	-0.464	0.366	0.071
Information		No information (baseline)	-	-	-
		Information	3.327***	2.923***	0.487*
Entertainment		No entertainment (baseline)	-	-	-
		Entertainment	3.728***	2.882***	0.644**
Promotion		No promotion	-	-	-
		Promotion	3.691***	2.859***	0.442*
Social		No social (baseline)	-	-	-
		Social	3.270***	2.544***	0.227
Remuneration		No incentive (baseline)	-	-	-
		Incentive	3.404***	2.787***	0.299
Control variables		Weekdays	0.219	0.222	0.051
		Followers	1.861***	0.375	0.255**
		Paid impressions	0.041	0.038	0.052***
		Position	0.105*	0.006	0.023
Constant		N	143	143	143
		F-value	14.976***	5.836***	12.282***
		R2	0.621	0.39	0.577
		Adj. R2	0.579	0.323	0.530

Note : We report unstandardized coefficients

p < 0.05. ** *p* < 0.01. *** *p* < 0.001

Table 4. Summary of results

| Hypotheses	Expected	Facebook			Twitter		
		Number of Likes	Number of Comments	Number of Shares	Number of Likes	Number of Replies	Number of Retweets
H_1: Vividness	+	Not supported	Contrary to H_1	Supported	Not supported	Not supported	Not supported
H_2: Interactivity	+	Contrary to H_2	Supported	Not supported	Not supported	Not supported	Not supported
H_3: Information	+	Not supported	Not supported	Not supported	Supported	Supported	Supported
H_4: Entertainment	+	Supported	Supported	Supported	Supported	Supported	Supported
H_5: Promotion	-	Supported	Not supported	Not supported	Supported	Supported	Supported
H_6: Social	+	Not supported	Not supported	Not supported	Supported	Supported	Not supported
H_7: Remuneration	+	-	-	-	Supported	Supported	Not supported
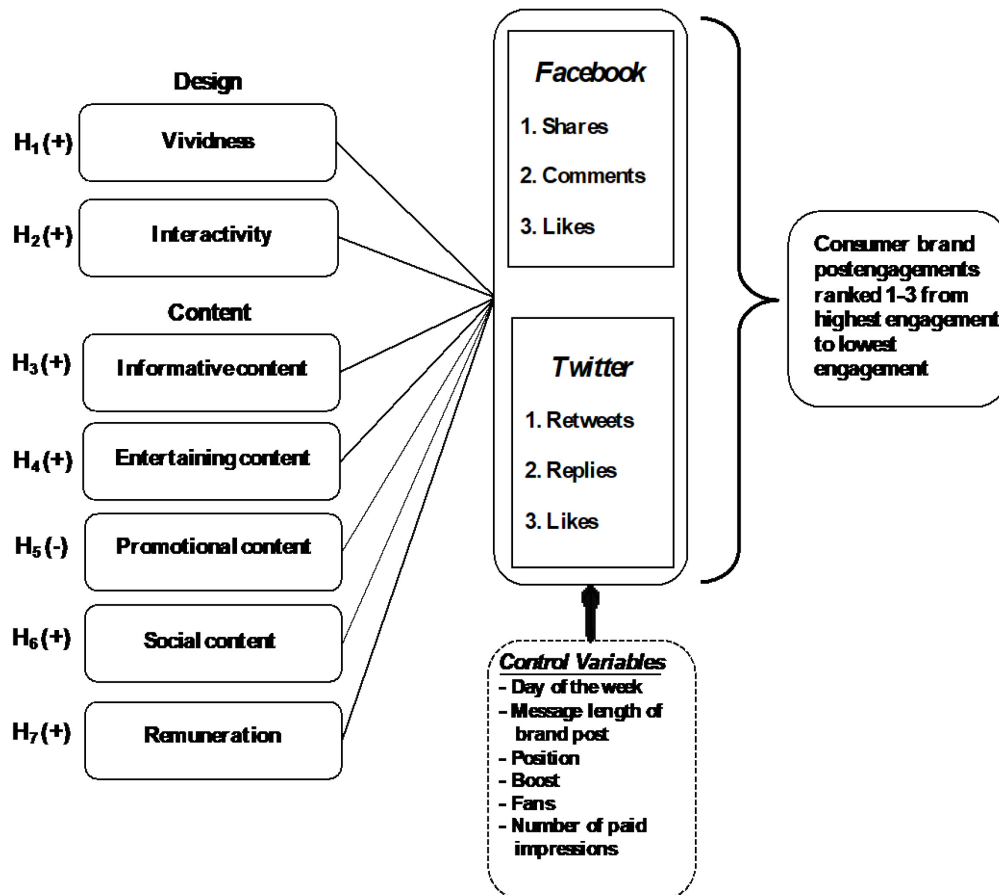
Figure 1. Conceptual model for brand post engagement on social media

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