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Content That Engages Your Customers: The Role of Brand Congruity and Promotions in Social Media

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How Can Companies Get Their Social Media Campaigns Rebroadcast?

The Role of Congruency between Online Content and Corporate Fan Pages

Abstract

Each day, social network users worldwide spend on average an hour and forty seven minutes on platforms such as Facebook, Instagram, Twitter, and YouTube (Statista, 2021b), and they forward online content such as photos, videos, or news to their friends. Nonetheless, 87% of posts to brand Facebook pages go unanswered. To reduce this negative outcome and attract fans' attention, often companies post content on their corporate profiles on social media that is not necessarily "congruent" with their brand, and also contains promotion-based themes. The question is whether this strategy is effective to boost rebroadcasting. We therefore propose a conceptual framework explaining how two key post themes—congruency and promotional incentives—influence consumers' propensity to share, and why. We then validate our framework by using a multi-method approach. First, we document the existence of the effect between congruency, promotions, and rebroadcasting by analyzing one year of posting activity of four leading brands. Second, we implement a field experiment conducted in collaboration with Samsung Mobile. We find that the degree of fit between online content and the brand positively affects the amount of rebroadcasting. Posts including promotional incentives generate fewer shares, but this negative effect reverses when the post is congruent with the brand. Third, we conduct two lab experiments to explain why this happens, which show that fans' reactance and altruistic motives play a central role.

Keywords: *rebroadcasting, share, fit, online content, promotions, field experiment*

Introduction

Each day, social network users worldwide spend on average an hour and forty seven minutes on platforms such as Facebook, Instagram, Twitter, and YouTube (Statista, 2021b), and they forward online content such as photos, videos, or news to their friends. Leading companies produced an average of one daily brand post on Facebook in 2019, the leading industry (media) published an average of 7.31 posts, whereas industries such as food and beverages, one post every three days (Statista, 2021a). These firms develop a Facebook posting strategy also in the hope that fans would rebroadcast brand posts to others Facebook members. Consistently, most brands have created corporate profiles on social media with the obvious purpose of cultivating and encouraging fans to share their digital campaigns. Rebroadcasting is particularly attractive for firms because it offers them the opportunity to reach prospects, generate cost-free advertising (Tucker, 2014), and boost sales (Chevalier & Mayzlin, 2006; Godes & Mayzlin, 2009; Kumar, Bezawada, Rishika, Janakiraman, & Kannan, 2016).

To achieve these goals, creatives select and develop different themes (Bass, Bruce, Majumdar, & Murthi, 2007) within their campaigns meant to inform consumers about their current product offering, prices, and promotions and to persuade them to share such contents with others individuals (Kumar et al., 2016). Interestingly, such themes are not always strictly “congruent” with the brand; instead, they involve content loosely related to the brand identity or sometimes related to third products or brands. We define these campaigns “incongruent campaigns.” This phenomenon refers, for example, to the use of babies, pets, or aphorisms in social campaigns meant to rack up views, likes, and shares (Goodson, 2017). For instance, T-Mobile launched the online “Pets Unleashed” campaign, followed by a pet-related series of Facebook posts. Similarly, in September 2020, Budweiser launched a “Pupweiser Contest” on

Instagram. Fiat and Starbucks used pets, babies, and zodiac signs in their Facebook posts (see Figure 1, Panel A). Occasionally, incongruent campaigns promote third brands or are combined with promotions, whereby a promotion code referring to a third brand or product is posted in a firm's corporate page. For instance, Microsoft posted content promoting another company (Hendrix motors); Samsung promoted Uxbridge University; Lego, the new Land Rover, and Shutterstock, Microsoft in their Facebook pages.

[Insert Figure 1 about here]

Prior literature shows that social campaigns' themes are meant to inform or persuade fans (Tellis, MacInnis, Tirunillai, & Zhang, 2019), trigger re-broadcasting, and, hopefully, sales. In this line, incongruent campaigns might be effective persuasive tools, as moderately incongruent content is expected to increase customers' attention (Meyers-Levy & Tybout, 1989) and boost interaction with other brand affectionados (Kumar et al., 2016), but they might also dilute or impair fans' interest in the page and their propensity to share its content. This might be particularly true when incongruent campaigns are combined with promotion-based themes. Sales and non-sales promotions in social media can be a double-edged sword: on one hand, they can boost a sense of altruism, leading fans to share price discounts among their social group, even if unrelated to the brand, thereby increasing sales; on the other hand, they can arouse reactance, discouraging fans from both re-broadcasting and buying. These negative effects could escalate when promotions are combined with incongruent themes, as the risk of triggering reactance is likely to increase.

The present work examines the role of the degree of congruency with the brand in social communication with or without promotions. More specifically, the purpose of this paper is to extend our understanding of how rebroadcasting can be achieved by focusing on the role of

congruency between the post and the brand fan page and the presence of *promotions* and why.

We therefore aim to answer the following main research questions:

- 1) Does the degree of *congruency* between the post content on the corporate profile on social media and the brand identity affect sharing? Is a brand post with a low degree of *congruency* more likely to capture fans' interest and be shared?
- 2) If so, does the impact of *congruency* between the brand identity and the post content vary with the presence of promotional incentives?
- 3) Can companies actually design social media campaigns using their corporate profile on social media to boost rebroadcasting by manipulating the degree of *congruency* and the presence of *promotions*?
- 4) What types of social media campaign work best, and why?

We answer questions (1) and (2) by using a data set containing information about one year of posting activity of four brand profiles on Facebook (1,875 posts). We analyze these data by estimating a zero-inflated NBD model to examine the impact of the congruency (*fit*)¹ between the post content and the brand while controlling for other message-specific factors shown to affect rebroadcasting activity. Second, we answer question (3) by conducting a field experiment, in collaboration with Samsung, in which we manipulate the degree of fit and the presence of promotions to understand whether our findings were actionable and whether companies can design social media campaigns using their corporate profile on social media to boost rebroadcasting. Finally, to answer question (4), we run two post-test analyses.

We find that the degree of *congruency* between the online content and the brand fan page positively affects the amount of rebroadcasting activity. Posts including promotional incentives

¹ We use the terms *fit* and *congruency* interchangeably in this paper.

generate less sharing, especially when such posts do not fit the brand identity. However, promotions trigger shares when online content is congruent with the brand fan page. Our field-test results confirm these findings and show how a brand can properly design a post using their corporate profile on social media to boost rebroadcasting, specifically using posts that are highly congruent with the brand identity and that include a price promotion. Our post-test experiments explain that this happens because this type of social media campaign generates less customer reactance (Fitzsimons & Lehmann, 2004) and increases altruistic motivations in social network users (Moe & Schweidel, 2014, p. 42).

Literature Review

Message Content and Rebroadcasting

The relationship between the characteristic of the online content and message features, its online popularity, and likelihood of being rebroadcast has received empirical support in the literature, documenting how posts' content influences rebroadcasting (e.g., Berger & Milkman, 2012; De Vries, Gensler, & Leeflang, 2012; Schulze, Schöler, & Skiera, 2014; Tellis et al., 2019; Zhang, Moe, & Schweidel, 2017).

De Vries et al. (2012) showed that vividness and interactivity of an online content are positively related to the number of fans' likes or comments. Berger and Milkman (2012) documented that online content triggering emotions is more likely to be shared. More specifically, they showed that the likelihood of a message going viral online increases when its content provokes emotions of anger and awe. By contrast, evoking sadness significantly reduces virality.

Schulze et al. (2014) showed that sharing mechanisms' characteristics and message content (e.g., providing an economic incentive to the receiver of the message) impact the viral

success (i.e., number of app downloads) of a product (e.g., Farmville) on social network platforms such as Facebook. In particular, they distinguished between low- and high-utilitarian products, showing, for example, that online messages that include an incentive for the receiver to use a product have a positive impact for hedonic products on Facebook but are ineffective for high-utilitarian products. They explained that this happens because individuals generally do not visit hedonic social network such as Facebook to learn about utilitarian products, so they process online messages about such utilitarian products differently than messages about hedonic products (e.g., games).

Zhang et al. (2017) proposed an integrated framework examining the role played by post content characteristics, audience characteristics, and the interaction between the two. To do so, they analyzed the rebroadcasting activity (retweets) of the top business schools as ranked by *Business Week*. Their results showed that not only does rebroadcasting activity vary with the content of the post; the match between the user's interest and the topic of the post also plays a critical role in triggering retweeting. Tellis et al. (2019) added to this debate by showing that the sharing of video ads is less likely when they encompass information-based versus emotion-based content. They contend that commercial content, that is, content developed with the intent to influence or persuade consumers, may trigger resistance to the message or a desire to counter the message; in particular, they show that prominent brands (brands shown longer and earlier in a video) are less likely to be shared.

In summary, previous research found that consumers are more likely to share online messages that are vivid, that trigger certain emotions, and that provide incentives and interactions consistent with consumers' interests and with the nature of product advertised (e.g., hedonic vs. utilitarian) on social media platforms.

Online Content Congruency with the Brand

In analyzing how consumers respond to incongruent posts, it is helpful to consider the literature on incongruence (Heckler & Childers, 1992; Mandler, 1982). This stream of literature shows that incongruent information or objects trigger more memorable prompts, more attention, and more elaboration than congruent ones do. Consistently, a mismatch between a brand identity and a post on the brand profile on social media is likely to provoke more cognitive elaboration, improving memory of the post than a matched post. Prior work, however, showed that incongruence may also produce adverse effects, as consumers might perceive the message's intent as suspicious and manipulative, and which lead them to counterargue the message and develop a negative attitude toward it. For instance, Meyers-Levy and Tybout (1989) documented that incongruency between a brand and the associated product category influences consumers' evaluations of and attitude toward new products. Similarly, Russell (2002) showed that product placements that are not integrated with the plot of a story improve memory but reduce persuasion.

The above literature suggests that incongruency can adversely influence how consumers react to incongruent posts, as the mismatch between the brand and the post content might indeed increase attention, but might negatively affect persuasion and possibly the likelihood of sharing.

Promotions and Rebroadcasting

Prior work shows that price-related communications may trigger negative reactions (e.g., reactance; Brehm, 1966) that affect consumers' likelihood of responding to the promotions, and that they can also decrease brand loyalty (Gedenk & Neslin, 1999). The negative effect of price-related messages might be notable when rebroadcasting activity is considered, as, particularly in social networks, consumers examine more closely the consequences of social observation for

their self-image (Tedeschi, 1981). For instance, Berger and Schwartz (2011) found that coupon and price discounts do not influence word of mouth. Relatedly, Puntoni and Tavassoli (2007) showed that consumers are less prone to share price-related information, as doing so is expected to activate their concerns about how others see them.

Further, prior work shows that consumers can perceive price-related posts as a means of manipulating them and that this perception might precipitate promotion reactance (Brehm, 1966; Fitzsimons & Lehmann, 2004) and decrease the likelihood of their sharing the promotion. Interestingly, Kivetz (2005) added to this literature by demonstrating that consumers prefer promotions that are congruent with their source (e.g., free groceries from grocery stores), as this consistency reduces the rise of reactance. When online content includes an incentive congruent with the brand, consumers might be more likely to share than they would had it been incongruent. This work once again suggests that the use of price-related themes might lead consumers to reflect on the reasons for the post's presence on the corporate social media profile, particularly when it is associated with incongruent online content, and that this can reduce their propensity to share it.

In summary, prior research suggests that post themes influence rebroadcasting—in particular, the degree of congruency between the brand and the online content on the corporate fan page—and that the presence of price-related incentives plays a role in triggering consumers' motives to share a post.

Conceptual Framework

In this section, we present and illustrate a conceptual framework that helps explain how and why post theme affects the number of post shares (Figure 2). The framework includes three main elements: post themes, motivations to share, and number of shares. Our main thesis is that

the degree of post congruency and presence of price-related incentives can influence consumers' propensity to share a post (dashed line in Figure 2). We also pose that this effect depends on how a post theme moderates the relationship between motivations to share and number of shares.

The link between motivations to share and number of shares attained by a post has been investigated largely in the marketing literature (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Moe & Schweidel, 2014; Tellis et al., 2019). The main motivations driving social media users to share opinions online are self-enhancement, social benefits, and altruism (see Moe & Schweidel, 2014, for a summary). The self-enhancement motivation is common in individuals who see themselves as experts. These individuals will share online content in order to build their reputation as experts or to portray themselves as more knowledgeable than the average person. Social benefit motives are activated when individuals want to share online content to increase or reinforce their opportunities for interacting with others in an online context. Finally, individuals' propensity to share online content on social media will hinge on how much they think doing so will help others. In our work, we also include reactance as a central motive to share social content, as research has shown that, particularly in digital environments (Ascarza, Iyengar, & Schleicher, 2016; Montaguti, Neslin, & Valentini, 2016), consumers may interpret firms' actions and communications as intending to restrict their freedom, which makes them resist any attempt directed to influencing their behavior (Fitzsimons & Lehmann, 2004; Trampe, Konus, & Verhoef, 2014). Reactance theory foretells potential negative consumer reactions to marketing efforts overtly trying to get people to share posts, particularly when these efforts involve financial incentives that too explicitly limit freedom of choice.

[Insert Figure 2 about here]

Figure 2 shows that social benefits, self-enhancement, altruistic motivations, and reactance impact shares. We pose that the impacts of these factors vary along with two main themes—the degree of congruency with the brand (fit) and the presence of promotional incentive—and their interaction.

Social Benefits

Research has shown that the act of sharing information on brands implies a social interaction that raises several social considerations (Hennig-Thurau et al., 2004; Hollenbeck and Kaikati 2012). Sharing content is a way to socialize, engage, and bond with other members of the community. For instance, Alexandrov, Lilly & Babakas (2013) posed that social needs, like the need for social comparison and the need for social bonding, can be fulfilled by sharing information about a brand. Individuals are more likely to talk about more personally relevant content (i.e., fans talking about the brand they follow on social media; Baker, Donthu, & Kumar, 2016) instead of engaging with incongruent contents when they aim to link with friends and/or boost social bonding. We therefore contend that congruency positively moderates the link between social motives and rebroadcasting. Considering this logic, we expect the following:

H1. Social benefits have a stronger impact on sharing for congruent posts than for incongruent posts.

By a different token, posts that are strongly commercial and designed to induce purchase (e.g., posts containing a financial incentive) may reduce social motives, as individuals are unlikely to feel that others will view them favorably when they share content that is too overtly commercial (Tellis et al., 2019). We therefore contend that the presence of price promotions negatively moderates the link between social motives and broadcasting.

H2. Social benefits have a lower impact on sharing for posts with promotions than for posts without promotions.

Self-Enhancement

Sharing content consistent with a brand and its personality can be a way to appear knowledgeable about it. In a social media contest, we anticipate that posts that signal a strong relationship with the brand will be more favorably evaluated by fans who are likely to be interested in enhancing their selves by revealing their expertise about the brand.

The link between self-promoting motives and sharing is positively moderated by the congruency between post and brand, as fans are more likely to retransmit content that is associated with the brand they follow (Chang, You, Yan, & Kumar, 2019). We therefore expect self-enhancement to be positively moderated when a post entails a message consistent with the brand.

H3. Self-enhancement has a stronger impact on sharing for congruent posts than for incongruent posts.

Altruism

Research has shown that consumers derive good feelings from helping charitable causes and this motivates their favorable response to cause-marketing. The positive reaction to charitable initiatives depends on the positive feelings (warm glow) people derive when they help a philanthropic cause (Andreoni, 1989). In this paper, we argue that when fans are exposed to a post that includes sales promotions, they feel a warm glow, as the sharing of a deal will make them think they are helping others, which positively affects their attitude toward the post and boosts their intention to share. The process we describe is not different from the one described in

the literature on cause-related marketing, which showed that cause-based marketing can make consumers feeling good and that this amplifies their purchase intention (Andrews, Luo, Fang, & Aspara, 2014).

H4. Altruistic motives have a stronger impact on sharing for posts with promotions than for posts without promotions.

Reactance

Posts on social media are often meant to influence behavior (i.e., sharing), and this might arouse reactance. Prior work showed that consumers are more likely to select rewards that are consistent with their required consumption effort (Kivetz, 2005), as effort–reward consistency reinforces the motivation to engage in such effort and leads consumers to believe that the effort reflects their preferences and reduces the arousal of reactance. When a post promotes content highly congruent with the page, fans perceive the effort of sharing it as consistent with their tastes and preferences, and this can decrease the prompting of reactance. By contrast, the effort associated with the sharing of a post inconsistent with the page can be perceived as extrinsically generated, and this reinforces an external attribution and triggers reactance. This is particularly true when posts refer to content inconsistent with the main brand, such as when other firms or other content are promoted in the post.

H5. Reactance has a stronger negative impact on sharing for incongruent posts than for congruent posts.

Firms increasingly rely on social media for broadcasting their sales promotions, as this can be an effective way to increase exposure, customers, and, ultimately, sales (Kumar et al.,

2016). A similar intent, however, might be easily understood by consumers who can guess that promotions are advertised in a social media contest to gain visibility through sharing, and this might lead to reactance and resistance to share (Kivetz, 2005; Tellis et al., 2019). We therefore suggest that consumers are likely to refrain from sharing a post if it contains generic price promotions. When promotions refer to the brand of the fan page, however, and encourage the purchase of items that fans would have wanted to buy anyway, reactance is less likely to occur, as fans find the request to share less aggressive and more consistent with the brand. We suggest that consumers are likely to refrain from sharing a post if it contains a promotion, as they might intuit that the promotion is advertised in a social media contest to gain visibility through sharing, and this might lead to reactance and resistance to share (Kivetz, 2005).

H6. Reactance has a stronger impact on sharing for posts with promotions than for posts without promotions.

Analysis Approach

Table 1 summarizes our analysis approach. We analyze one year of online posting activity of four brands through zero-inflated negative binomial distribution (NBD) regression to answer RQ1: whether the degree of fit between the post content and the brand affects sharing, and RQ2: whether the fit between the fan page and the post interacts with the presence of promotional incentives. We then run a field experiment on the Samsung Mobile Facebook corporate page, where we test four campaigns by manipulating the degree of fit and the presence of promotional incentives to answer RQ3, whether companies can actually design social media campaigns by using the degree of fit and promotions to boost rebroadcasting. Finally, we rely on

a post-test data collection and analysis to answer RQ4—diagnosing the factors that drive the success of different campaigns.

[Insert Table 1 about Here]

Study 1: Model-Based Evidence

Data

This research focuses on rebroadcasting activity, as indicated by the number of shares of online content, that is, brand posts on social media such as Facebook. Our unit of analysis is the brand post. We obtained the cooperation of Starcom Mediavest Group to gather data on four international brands that were actively posting online content on their Facebook fan pages from January 2013 to February 2014. These brands represent different product categories: electronics, mobile devices (e.g., smartphones and tablets), and alcoholic beverages. We gathered information for a total of 1,875 brand posts. Table 2 reports descriptive statistics about the number of fans, likes, comments and shares for each during the observation period (1 year).

[Insert Table 2 about here]

Congruency and promotions represent the main covariates of interest of this study, as we contend that the degree of congruency between a post's content and the brand affects the number of shares and that this impact can vary depending on the presence of promotional incentives. We measure congruency as the degree of fit between a brand post and brand using scales from the brand extension literature (Barone, Miniard, & Romeo, 2000, p. 390). To do so, two of the authors independently rated the degree of congruency using a 7-point scale indicating how consistent the post content was with the brand (1 = not at all consistent; 7 = totally consistent) and the presence of a promo and advertising of a third brand using a binary scale (present vs. absent). In the case of disagreement, the authors reanalyzed the posts to reach agreement.

Previous research (De Vries et al., 2012) showed that post characteristics—such as the presence of vivid elements (e.g., photos, videos) or its interactive characteristics (e.g., questions, calls to action, links)—have an impact on the number of likes and comments the post receives. We control for these factors and additional variables. These control variables are summarized in Table 3, which presents the variables used as covariates in our model. To create these variables, ten independent coders² and the authors content-analyzed the 1,875 posts for the presence of these features (e.g., video, photos, call-to-action). The ten independent coders along with the authors coded on average 375 posts each.³

The average agreement is 85%, and the pooled Kappa is 0.65. According to Multon (2010), a 70% level of agreement and a Kappa of 0.50 are generally regarded as adequate.

[Insert Table 3 about here]

Table 4 provides a descriptive analysis of the covariates. First, it shows that there is variation in the degree of congruency. The average level of perceived congruency between a brand post and a brand fan page is 5.25 (SD = 1.77). Second, it illustrates that 16.4% of the posts contain a promotion.⁴ Third, it documents a significant variation across posts in their characteristics. For example, 85% of the brand posts include a photo, and 15% do not. Few posts contain a video (3%). Different interactive elements are used: link to a website (31%) and questions (23%) are the most popular, but companies also use calls to action (10%) and events (16%). On average, a post stays in the top position on the brand fan page less than one day,

² Coders were students attending one author's course. The coding of post characteristics was functional to the development of a teamwork activity project for which students received extra points.

³ We randomly allocated the different brands and relative posts to the ten coders and the authors. To reduce feature fatigue, we allocated posts of the same brand to each coder, as it is easier to evaluate posts of the same brand.

⁴ The average fit of posts with promotions is 5.48 (SD = 1.57), and the average fit of posts without promotions is 5.23 (SD = 1.78). The difference is not significant, meaning that we do not observe differences in fit between posts with and without promotions.

meaning that companies tend to post more than one post per day. Finally, posts can also vary in the number of tags and hashtags embedded in the text.

[Insert Table 4 about here]

Methodology

The main purpose of Study 1 is to understand whether the degree of congruency between post content and brand fan page affects rebroadcasting activity and whether the impact of congruency varies with the presence of promotions. The dependent variable of interest is rebroadcasting activity. More specifically, we define $share_{ij}$ as the number of shares received by post i of brand j , where J is the total number of brands, $1 \leq j \leq J$. At the brand-post level, we model the outcome $share_{ij}$ as the realization of a zero-inflated negative binomial distribution (Greene, 2012). The zero-inflation allows for additional probability mass at zero, so we can accommodate a larger number of posts that receive zero shares than the Poisson or binomial would normally predict. This modeling approach is particularly suited in dealing with overdispersed count data (Ridout, Hinde, & DeméAtrio, 2001), and it has been widely used in the marketing literature (e.g., Dotzel, Shankar, & Berry, 2013; März, Schubach, & Schumann, 2017; Sorescu & Spanjol, 2008).

Equation (1) represents our model:

$$(1) P(\text{share}_{ij} = k) = \begin{cases} \pi_{ij} + (1 - \pi_{ij})(1 + \alpha\mu_{ij}^c)^{-\frac{\mu_{ij}^{1-c}}{\alpha}} & \text{if } k = 0 \\ (1 - \pi_{ij}) \frac{\Gamma(k + \frac{\mu_{ij}^{1-c}}{\alpha})}{\Gamma(\frac{\mu_{ij}^{1-c}}{\alpha})k!} \times (1 + \alpha\mu_{ij}^c)^{-\frac{\mu_{ij}^{1-c}}{\alpha}} \times \left(1 + \frac{\mu_{ij}^{-c}}{\alpha}\right) & \text{if } k > 0 \end{cases}$$

where c is the shape index (Saha & Dong, 1997), and the parameter $\alpha \geq 0$ represents the dispersion of the distribution. When $\alpha \rightarrow 0$, the NBD collapses to a Poisson (Ridout et al., 2001).

The first equation of the system represents the probability that $share_{ij} = 0$; this equation allows us to differentiate online content that will *always* have zero counts from online content that is “at risk” of having a zero count. Equation (2) represents the probability that $share_{ij}$ is a non-zero count. More specifically, we model the mean of the non-zero count data as:

$$(2) \mu_{ij} = \exp\{\omega + \tau_j + \beta_1 fit_{ij} + \beta_2 promo_{ij} + \beta_3 fit_{ij} \times promo_{ij} + \sum_{k=1}^K \gamma_k control_{kij}\}$$

The probability π_{ij} represents the probability that post i of brand j will always have zero counts, and it is restricted by means of a logistic regression model. This yields Equation (3):

$$(3) \pi_{ij} = \frac{\exp(\zeta + \iota_j + \lambda_1 fit_{ij} + \lambda_2 promo_{ij} + \lambda_3 fit_{ij} \times promo_{ij} + \sum_{k=1}^K \nu_k control_{kij})}{1 + \exp(\zeta + \iota_j + \lambda_1 fit_{ij} + \lambda_2 promo_{ij} + \lambda_3 fit_{ij} \times promo_{ij} + \sum_{k=1}^K \nu_k control_{kij})}$$

Equation (2) introduces covariates to model the non-zero counts. β_1 , β_2 , and β_3 are the key parameters of interest representing the impact of fit, promotions, and the interaction between the two on number of shares. γ_k is the vector of parameters associated with the control variables included in Table 1. τ_j are the fixed-effect parameters associated with the different brands, and ω is the intercept. Similarly, equation (3) introduces covariates to model the probability of having always zeros. Although zero-inflated negative binomial models allow for different sets of covariates predicting the binary and the negative binomial model, equation (3) has the same set of covariates used in equation (2).⁵ λ_1 , λ_2 , and λ_3 represent the impact of fit, promotions, and the interaction between the two. ν_k is the vector of parameters associated with the control variables. ι_j are the fixed-effect parameters associated with the brands, and ζ is the intercept.

⁵ This choice is supported by the comparison of different alternative specifications through likelihood-ratio tests and predictive accuracy tests.

Results

We estimate the zero-inflated NBD regression model described in equations (1) through (3) using STATA (Long & Freese, 2001). We test the zero-inflated NBD versus rival specifications. The Vuong (1989) test (Greene, 2012, pp. 823–824) compares the zero-inflated model with an ordinary negative binomial regression model. The significance test ($z = 12.21$; $p\text{-value} = 0.000$) suggests that the zero-inflated model is better. Additionally, we use the likelihood ratio test of the overdispersion coefficient, alpha, to test the superiority of the zero-inflated negative binomial model over the zero-inflated Poisson model (Ridout et al., 2001). Results show that this test is significant ($p\text{-value}=0.000$), confirming that the zero-inflated negative binomial model is better than the zero-inflated Poisson model.

Finally, we test the predictive validity of the presented specification of the model through a Lift Chart analysis, and in-sample (75%) and an out-sample (25%) predictions we also plot the predicted versus actual distribution of counts for each of the four brands. These analyses show a good lift for both in-sample and out-sample posts.⁶

Table 5 summarizes the parameter estimates. Results indicate that when the content of a post is congruent with the brand, the probability of its non-generating sharing decreases significantly ($\lambda_1 = -0.490$) and the number of shares increases significantly ($\beta_1 = 0.111$). Promotions have a negative main effect on amount of rebroadcasting activity ($\beta_2 = -1.203$). Notably, we find a significant positive interaction effect between promotions and the degree of congruency on both likelihood of non-sharing ($\lambda_3 = -2.220$) and number of shares ($\beta_3 = 0.186$), which shows that when the post is congruent with the brand fan page, promotions positively affect broadcasting. Interestingly, we also find that when the post promotes a third brand, it is

⁶ Results of these analyses are available upon request.

less likely to trigger sharing ($\lambda_4 = 3.376$), and it also negatively reduces the number of shares ($\beta_4 = -0.474$).⁷

[Insert Table 5 about here]

In line with previous work (e.g., De Vries et al., 2012), we report several significant control variables. For example, the presence of vivid elements (photos, albums, or videos) has a positive impact on the number of shares ($\gamma_2 = 1.800$, $\gamma_3 = 1.953$) and reduces the likelihood of non-sharing ($v_1 = -24.721$, $v_2 = -28.313$, $v_3 = -53.925$). We also observe several interactivity elements and post characteristics that have a positive impact on shares. Contest posts containing a link to a website significantly increase the number of shares ($\gamma_4 = 0.639$) and decrease the probability of non-sharing ($v_4 = -6.650$). Call-to-Act ($v_5 = -14.472$) and the presence of an answer by the company ($v_8 = -15.342$) significantly decrease the likelihood of non-sharing. Finally, our results highlight factors that negatively affect rebroadcasting activity. For example, posts involving an event significantly decrease the number of shares ($\gamma_6 = -0.666$) and does not influence the probability of receiving zero shares ($v_6 = 0.578$, n.s.), and long text in posts has a negative impact on the number of shares ($\gamma_9 = -0.001$).

Study 2: A Field Experiment

Research Design and Data

The above analysis suggests that online content that is congruent with the brand increases the number of shares. It also indicates that when promotional incentives are present and communicated in an online content, rebroadcasting activity is significantly lower. Notably,

⁷ We also estimated a model in which we interacted τ_1 (i.e., dummies associated with the different brands) with the key covariates in our model (fit and promotion). Some interactions are significant (e.g., Fit * Brand 1 and Promotion * Brand 1), highlighting that the impact of fit and promotion on the number of shares can differ in intensity across brands. However, the key results of our analysis (parameters β_1 , β_2 , β_3) remains unchanged in terms of significant and direction of the coefficients.

results from Study 1 document a positive interaction between the degree of fit and promotional incentives. The purpose of Study 2 is, therefore, threefold. First, we aim to gain more control and strengthen the results of Study 1 by manipulating the degree of fit and the presence of promotions. Second, we want to increase the external validity of our findings, by showing that Study 1's results can be replicated. Third, we want to provide clearer evidence that our insights can be used to actually design social media campaigns.

We obtained the cooperation of the Samsung division of a European country to conduct this field experiment. The company operates in the electronics industry and is a leader in the smartphone and tablet market. The firm has two Facebook pages: Samsung (2.7M fans) and Samsung Mobile (2.3M fans). We implemented our experiment on the Samsung Mobile Facebook page.

Our purpose was to manipulate the two key variables of interest: degree of congruency and promotions. Accordingly, we used a 2×2 experimental logic, where we manipulated the level of fit between the post and the fan page (high vs. low) and the presence of a promotion in the post (present vs. absent). We designed four campaigns in collaboration with Samsung's social media director and copy editors. The four different posts are reported in Figure 2.

[Insert Figure 2 about here]

Each post shows one of the company's products: a Samsung Galaxy tablet⁸ (see Figure 3). However, the low-fit-condition posts (A and C) center on a third brand, different from Samsung, that provides streaming services. The high-fit-condition posts (B and D) present the Samsung tablet only. For each post, we either include (C and D) or do not include (A and B) a promotion (6 months of free streaming with the purchase of a Samsung Galaxy tablet). In

⁸ This was a company requirement that guarantees equal conditions and graphics for each post.

summary, our field experiment entails four posts defined by fit (high vs. low) and promotion (present or absent).

[Insert Figure 3 about here]

Each campaign was delivered through the Samsung Mobile Facebook page to different geographical areas. Although it was not possible to randomize social media users and provide each experimental condition to a randomized group of individuals, we mimicked a between-subjects design and selected four different geographic areas with similar characteristics as experimental groups (an average of 1 million Facebook users each). Each campaign was delivered in one area only and ran from March 3 through March 6, 2016 (4 days). The campaign was sponsored by Samsung to reach a target audience interested in Samsung and ranging from 18 to 45 years of age. While our social media campaigns are motivated by two factors (fit and promotions), company policy, as well as our strategy, dictated that the communications differ on factors other than these two elements. For example, all low-fit campaigns contain a person (an actor of a TV series), whereas the high-fit campaigns do not. Although we acknowledge differences in copy editing across the four campaigns, manipulation checks done in the pre-test analysis of Study 3A show that customers correctly perceived the promotional incentives and the degree of congruency.

Results

Table 6 and Figure 4 report the results obtained for the four posts: the total number of likes, shares, comments, and clicks. The low-fit post with promotion garners the fewest shares, likes, and comments. By contrast, the high-fit post with promotion earns the greatest shares and post-clicks. Finally, the high-fit post without promotion earns the most likes.

[Insert Table6 and Figure 4 about here]

Each post was shown on the Samsung Mobile Facebook page for a specific geographical area, each having a slightly different number of social media users, for each area we know the total number of people reached (third column, Table 6).

To test the significance of these effects, we ran four different logistic regression models (shares, comments, clicks, likes). The dependent variable of each model is a dummy variable that takes the value 1 if the individual reached did a specific action (e.g., share) and 0 otherwise. In each model the independent variables are the experimental condition (and the low-fit, no-promo condition as baseline).

As far as shares are concerned, results show that a congruent post without promotional incentives significantly increases the likelihood of sharing compared with the baseline condition (Wald $\chi^2=6.06$). Interestingly, the presence of a promotion does not hurt sharing if the post is congruent (Wald $\chi^2=9.56$); however, it significantly reduces the propensity to share if the post is not congruent (Wald $\chi^2=5.04$), supporting the presence of an interaction effect between congruency and promotions. The negative impact of the Fit Low – Promo Yes condition is observed also for comments and likes (see Table 7). Interestingly, Fit High – Promo No is the best condition for generating likes, but Fit High – Promo Yes are the best conditions for generating shares and clicks. More importantly, this evidence strengthens the results obtained in Study 1 and indicates that congruency between brand fan page and post content stimulates shares. Furthermore, promotions appear to negatively influence sharing, unless the post is congruent with the brand.

[Insert Table 7 about here]

Study 3: A Post-Test Survey

Our fourth objective is to provide insights for interpreting our results and to validate our conceptual framework. To do so, we run two separate studies aimed at investigating the moderating role of the degree of congruency, promotions, and their interaction on the four main drivers of sharing.

Study 3A

To run Study 3A, we conduct a survey to measure the constructs presented in Figure 2. We collected data by using a Qualtrics panel of respondents who received monetary compensation to complete the survey. We use the same social media campaigns as in the field experiment (see Figure 3), and we randomly expose each respondent to one of the four posts, following a between-subjects design. We use filter questions to obtain a sample that knows the brand Samsung and its mobile products, has a Facebook account, is less than 60 years old, and lives in the country where the field experiment is run. We also use attention-check questions. Ultimately, we obtain 235 valid responses.

We ask all respondents to imagine that they are browsing the Samsung Mobile fan page when they encounter one of the four posts. Participants are required to respond to questions about the constructs reported in Figure 2. The questions and items used are detailed in Appendix Table A1, where manipulation tests items are also provided (Table A2 panel A). To verify whether the difference between the high-fit versus low-fit manipulations are correctly perceived we measure “perceived fit” drawing from the literature on brand extension (see, for example, Aaker & Keller, 1990; Boush & Loken, 1991; Keller & Aaker, 1992; Spiggle et al., 2012). Perceived fit is conceived as a measure of similarity or feature overlap between the parent brand and extension category (Aaker & Keller, 1990). We believe these scales capture well the essence

of the construct we meant to measure. We therefore adapted the items of these scales to measure the perceived overlap between the focal brand and the content of the post on social media (see Table A2 panel A). The manipulation checks indicate that high-fit versus low-fit posts are correctly perceived.

Study 3B

Study 3B searches to conceptually replicate the effects observed in Study 3A across a different manipulation of post congruency. It could be argued that our results depend on the manipulation used in studies 2 and 3A, which maps the specific circumstance in which a firm promotes a third brand (see Figure 1, Panel B) but excludes the more general case where a post contains content unrelated to the focal brand and any alternative brand. To rule out this possibility, in Study 3B we use a more neutral manipulation whereby an incongruent post corresponds to content unrelated to the focal brand (see Figure 5).⁹ The rest of the questionnaire, including focal brand (Samsung), instructions, and questions were the same as those for Study 3A.

[Insert Figure 5 about here]

We measure the constructs detailed in Figure 2 while using the items listed in Table A1. Manipulation checks items are reported in Table A2 panel B.¹⁰ Manipulation checks provide support to the idea that respondents correctly classify each post consistently with the intended manipulation of fit.

⁹ We thank an anonymous reviewer for this suggestion.

¹⁰ We measured fit using a semantic differential scale, instead of the Likert scale used in Study 3A, and we also included a richer set of items to better capture perceived fit. We thank an anonymous reviewer for this suggestion.

A total of 195 participants recruited through Prolific completed this study in exchange for a monetary compensation.

Tables 8 and 9 report the results of studies 3A and 3B, respectively.

[Insert Tables 8 and 9 about here]

Column 5 in Table 8 shows the overall impact of the four drivers of sharing and their interactions with the experimental conditions on attitude toward the post and, subsequently, on sharing intention. In general, in both studies, reactance significantly decreases attitude toward the post ($\kappa_{R_3A} = -0.200$, $\kappa_{R_3B} = -0.225$), whereas altruistic motives have positive effects on post attitude ($\kappa_{A_3A} = 0.331$; $\kappa_{A_3B} = 0.302$). By contrast, in Study 3A we observe a significant effect of self-enhancement on attitude toward the posts ($\kappa_{SE_3A} = 0.378$) that we do not find in Study 3B, where instead social benefits appear to drive the attitude ($\kappa_{SB_3B} = 0.232$).

In turn, consistent with the theory of planned behavior (Ajzen, 1991), attitude toward the post in the previous regression is a positive driver of intention to share the post ($\eta_{PA_3A} = 1.482$; $\eta_{PA_3B} = 1.270$), together with subjective norms ($\eta_{SN_3A} = 0.152$; $\eta_{SN_3B} = 0.656$). By contrast, perceived behavioral control negatively affects sharing intention in study 3A ($\eta_{PBC_3A} = -0.221$), but we do not replicate this finding in Study 3B (see Table 8).

Columns 1 through 4 of Table 8 show that these results vary across the different experimental conditions. Interestingly, the negative effect of reactance on post attitude is significant in the low-fit condition in both studies ($\kappa_{R(1)_3A} = -0.290$, $\kappa_{R(3)_3A} = -0.275$), ($\kappa_{R(1)_3B} = -0.381$, $\kappa_{R(3)_3B} = -0.230$), providing support to H5. Moreover, reactance is more likely to influence attitude toward a post when it contains a promotion ($\kappa_{R(3)_3A} = -0.275$; $\kappa_{R(3)_3B} = -0.230$), as proposed by H6.

Again consistent with H4, altruism increases attitude toward the post coupled with a promotional incentive, especially when the online content is congruent with the brand ($\kappa_{A(3)_3A} = 0.372$, $\kappa_{A(4)_3A} = 0.681$; $\kappa_{A(3)_3B} = 0.431$, $\kappa_{A(4)_3B} = 0.323$). Interestingly, altruism also has a positive, even if the least significant, effect in the low-fit condition without promotions ($\kappa_{A(1)_3A} = 0.305$).

In Study 3A we find that the impact of social benefits is significant and negative, but only in the low-fit plus promotional condition ($\kappa_{SB(3)_3A} = -0.250$). This suggests that respondents felt that others would view them less favorably if they shared commercial content (i.e., containing a promotion) referred to an incongruent post, in line with H2. Study 3B corroborates this finding by showing that social benefits drive the attitude toward a congruent post ($\kappa_{SB(2)_3B} = -0.447$).

As far as self-enhancement is concerned, studies 3A and 3B provide some interesting insights. In Study 3A we find that self-enhancement has its strongest effect on post attitude for non-promotional posts consistent with the brand ($\kappa_{SE(2)_3A} = 0.685$), supporting H3. Interestingly, self-enhancement also positively affects attitude toward incongruent posts with and without promotion ($\kappa_{SE(3)_3A} = 0.400$; $\kappa_{SE(1)_3A} = 0.340$). Notably, self-enhancement is not significant in any condition in Study 3B. The difference in the manipulation used in studies 3A and 3B indicates an interesting moderating effect of congruency on self-enhancement: content advertising a third brand positively affects self-enhancement (3A), whereas neutral content does not (3B). One likely explanation is that when a third brand shares some focal traits with the focal brand, self-evaluation is bolstered (Shalev & Morwitz, 2012). This means that broadcasting a post promoting, as in our case, a new technological product or service (e.g., Netflix as third brand) on the brand fan page of another technologically based brand (e.g., Samsung, the focal

brand) helps signal innovativeness and technological expertise, therefore triggering self-enhancement.

Conclusions

Interacting with customers through corporate fan pages on platforms such as Facebook, Instagram, or Twitter is one of the most common forms of social media marketing. Companies are increasingly allocating budgets to social media campaigns in order to boost fan engagement and rebroadcasting activity. Previous work has highlighted the value of increasing likes and shares on a firm's Facebook page and its relationship with offline customers' behavior (Mochon, Johnson, Schwartz, & Ariely, 2017) and sales (Kumar et al., 2016).

Previous work documents the positive association between social content characteristics and sharing activity (Berger & Milkman, 2012) as well as dimensions of popularity (e.g., likes, comments; De Vries et al., 2012; Schulze et al., 2014; Zhang et al., 2017). Our research differs from prior work in that it centers on why a post's theme affects the main sharing motives and not simply on how it influences rebroadcasting. This is the key contribution of the paper.

We propose a conceptual framework for how communications themes moderate the relationship between sharing motives and actual sharing. The framework is based on previous research investigating the main motivations behind individuals' propensity to share and on work examining how message content affects virality. Our framework suggests that proposing a message that is congruent with a corporate brand and offering an incentive affects the drivers of sharing and explains why.

To validate this framework, we used a multi-method approach. By analyzing a year of posting activities for four brands that actively use social media, we show (Study 1) that (1) rebroadcasting increases with the degree of congruency between the post and the brand fan page

and that (2) promotional incentives significantly reduce the number of post shares; however, (3) when promotional incentives are coupled with content that is congruent with the brand fan pages, companies can benefit from a high level of rebroadcasting of their social media campaigns.

We show that these associations can be translated into practice and that our insights can be used to design social media campaigns through a field experiment (Study 2).

Studies 3A and 3B validate our proposed conceptual framework by showing that reactance arises when a promotion theme characterizes a post but does not when a post is congruent with the brand fan page. We also show that posts including promotional incentives stimulate altruistic motivations, that is, the desire to share helpful information, such as discounts, with friends. This result is in line with previous research documenting that altruistic motives affect consumers' willingness to share opinions and news in digital content (Moe & Schweidel, 2014), especially when information is useful (e.g., discounted products, good restaurants; Dichter, 1966; Hennig-Thurau et al., 2004). We also show that congruency triggers self-enhancement, whereas incongruency positively affects it only when a post promotes a third brand sharing some focal traits with the focal brand. Hence, this motivation can be activated by a highly congruent or a co-branded post.

Our research has important implications for researchers. First, we validate a link between post congruency and promotions and drivers of rebroadcasting activity. We provide empirical evidence of these associations, and we show, through the analysis of a field test, that post shares can increase as a result of manipulating the degree of fit and the presence of promotional incentives. Second, we document the importance of reactance, altruism, social benefits, and self-enhancement motivations in the design of social media marketing campaigns and how they vary

along with the theme of the social campaign. A third implication is the importance of field tests. Field tests provide evidence that the relationships found in descriptive analyses are causal.

Our research offers important implications for managers. First, we show that the content of a post matters. Firms can devise more effective digital campaigns by carefully considering the characteristics of a post, as these can influence the likelihood of rebroadcasting. Second, not all posts are equally effective: our work shows that firms should carefully consider the congruity of a post with the brand fan page, particularly when the post embeds a promotional incentive. In our application, we find that a communication that is in line with the brand fan page and that provides a promotional incentive is most effective.

Studies 3A and 3B suggest that congruent posts are less likely to trigger reactance to the communication. Therefore, firms posting online content on their fan pages should strike a delicate balance—they need to attract the interest of their fan base while avoiding elements that are unrelated to the brand. At the same time, posts need to give the fan base incentives to share the communication with others, or self-enhancement motivations. Inserting promotional incentives can encourage altruistic motives in the fan base. However, they can also activate reactance; thus, it is important to couple the incentive with cues congruent with the brand or in line with the corporate fan page. For example, companies can use self-enhancement motivations by convincing the fan base that the online content can be a vehicle to position themselves as experts.

Our guidance simply is to mitigate reactance and provide altruistic or self-enhancement motivations.

Limitations and Future Research

First, our unit of analysis in this research is the post, as we examined the impact of fit and promotions at the post level. One could argue that companies should consider the overall social media strategy of their corporate fan page and that creating posts that are consistently congruent with the page could produce a negative effect, at least in the long term. Further research could explore whether variation in post fit can boost the rebroadcasting of the overall page, as opposed to rebroadcasting of a single post.

Second, we based our work on a brand-related measure of fit (Czellar, 2003). However, further research could explore whether our results hold when different dimensions of perceived fit are considered.

Third, we did not examine differences in the type of incentives provided. It would be interesting to assess whether social media users respond differently to different promotional incentives (e.g., price vs. non-price promotions).

Fourth, it is possible that the specifics of the campaign used, such as the graphics and copy used in our field experiment, influenced our results. Our post-test survey suggests that the manipulations worked and that high-fit posts were correctly perceived as congruent with the brand. We also find the same pattern of results in Study 1. This is reassuring. However, we cannot rule out that the results would change with a different execution.

Last, we considered different industries (electronics, mobile devices, and beverages). We ran a separate analysis for each brand and each category of products in Study 1, obtaining similar results. However, we cannot exclude that results would vary if we were to consider different categories and products (e.g., hedonic vs. utilitarian products).

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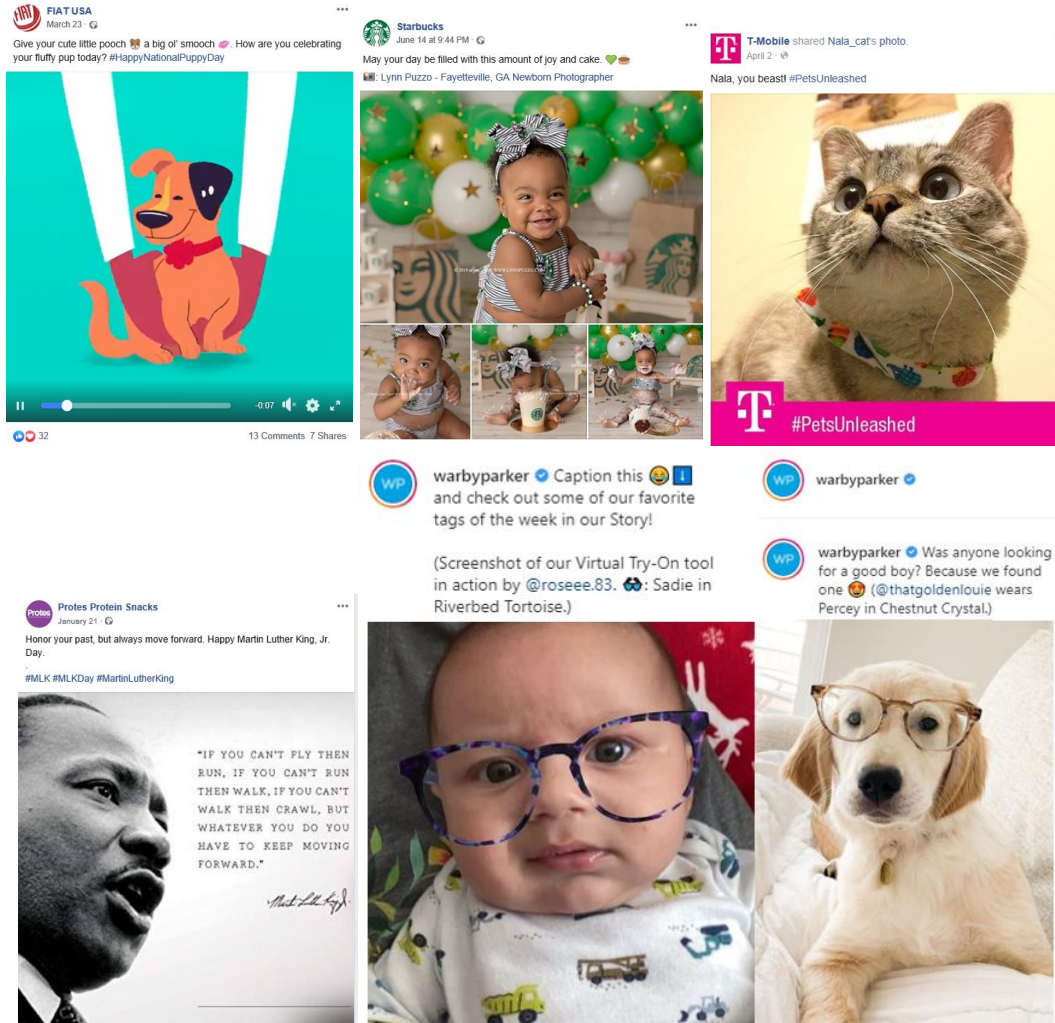
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Figure 1: Examples of Posts Using Themes Less Congruent with the Corporate Fan Page
 Panel A: Examples of posts using themes not congruent with the corporate fan page



Panel B: Examples of posts promoting third companies or brands

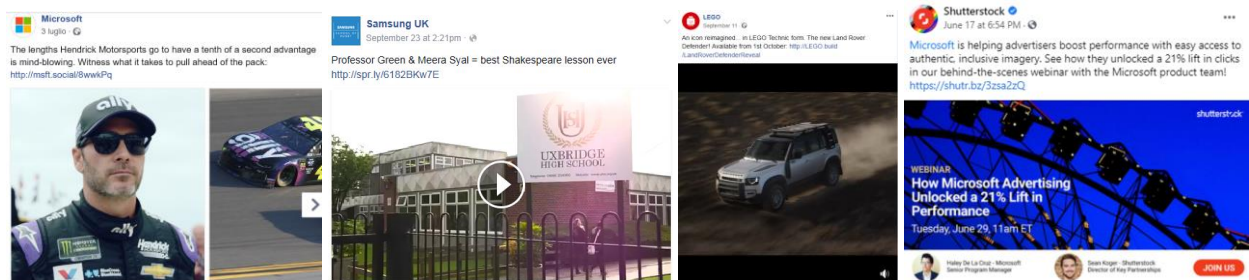


Figure 2: Why do people share online content?

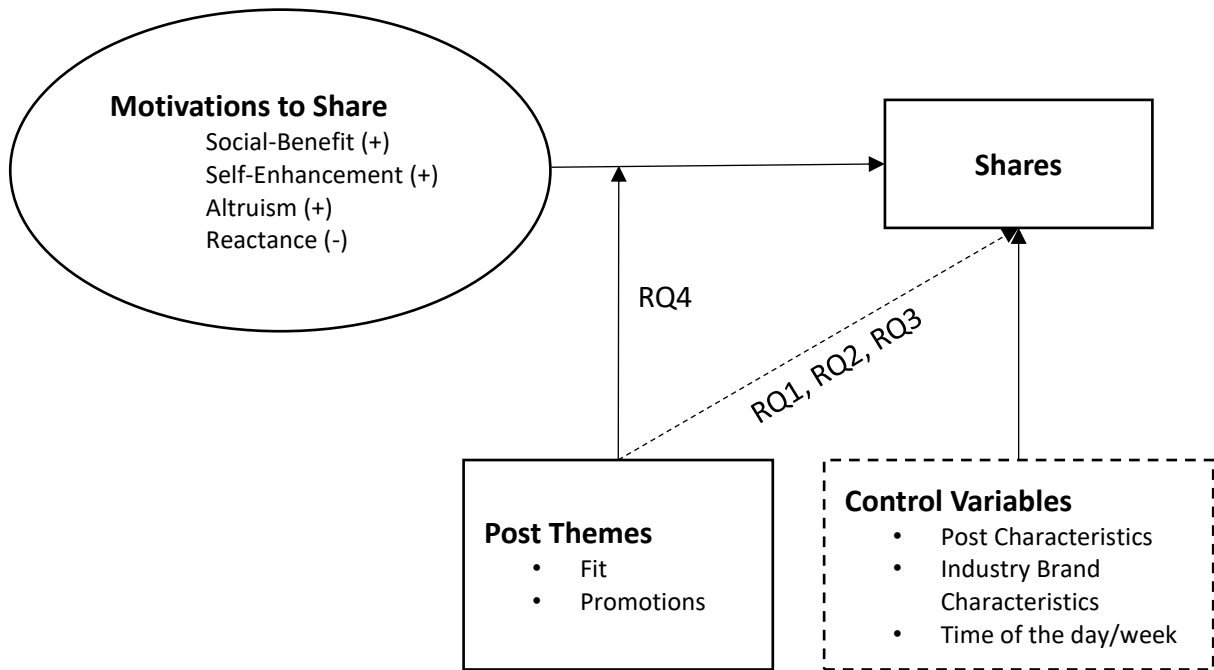


Figure 3: Study 2 (Field Experiment) Conditions

A) Promo No / Fit No



B) Promo No / Fit Yes



C) Promo Yes / Fit No



D) Promo Yes / Fit Yes

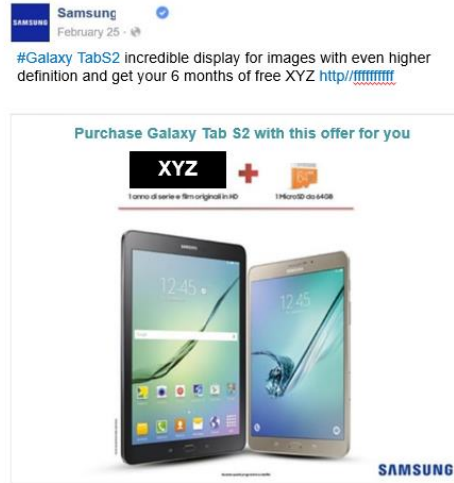


Figure 4: Total Reactions (Study 2) Field Experiment













| | LOW Fit | HIGH Fit |
|-----------|---|--|
| Promo NO | <p>1586 Reactions:</p>  <p>Like Love Haha Wow Sad Angry</p> <p>1505 24 7 8 1 0</p> <p> Share  Comment</p> <p>23 25</p> <p>826 Post Clicks</p> | <p>3013 Reactions:</p>  <p>Like Love Haha Wow Sad Angry</p> <p>2814 47 12 50 5 6</p> <p> Share  Comment</p> <p>64 27</p> <p>1814 Post Clicks</p> |
| Promo YES | <p>1167 Reactions:</p>  <p>Like Love Haha Wow Sad Angry</p> <p>1129 10 2 13 3 2</p> <p> Share  Comment</p> <p>13 3</p> <p>1170 Post Clicks</p> | <p>2138 Reactions:</p>  <p>Like Love Haha Wow Sad Angry</p> <p>1942 39 15 59 3 5</p> <p> Share  Comment</p> <p>73 24</p> <p>1884 Post Clicks</p> |

Figure 5: Study 3B: Conditions





| A) Promo No / Fit No | B) Promo No / Fit Yes |
|--|--|
|  <p>Samsung 3 h</p> <p>Are you an art lover? Let's celebrate the #WorldArtDay!</p> <p>Like Comment Share</p> |  <p>Samsung 3 h</p> <p>Are you an art lover? #Samsung celebrates the #WorldArtDay! Today you can catch any detail with the new super powerful #GalaxyS9 and #GalaxyS9plus. Adapts to any light, powerful intelligent camera, say goodbye to bad shots!</p> <p>Like Comment Share</p> |
| C) Promo Yes / Fit No | D) Promo Yes / Fit Yes |
|  <p>Samsung 3 h</p> <p>Are you an art lover? Let's celebrate the #WorldArtDay! Check out our 20% discount. It's an absolute masterpiece! Use the code MASTERPIECE to redeem the discount.</p> <p>20% OFF EVERYTHING! It's an absolute MASTERPIECE!</p> <p>Like Comment Share</p> |  <p>Samsung 3 h</p> <p>Are you an art lover? #Samsung celebrates the #WorldArtDay! Today you can catch any detail with the new super powerful #GalaxyS9 and #GalaxyS9plus. Adapts to any light, powerful intelligent camera, say goodbye to bad shots! Check out our 20% discount on #GalaxyS9, #GalaxyS9plus and many other #Samsung products: it's an absolute masterpiece! Use the code MASTERPIECE to redeem the discount.</p> <p>20% OFF EVERYTHING! It's an absolute MASTERPIECE!</p> <p>Like Comment Share</p> |

Table 1: Article Scope and Overview

| Research Questions | Study | Analyses | Tables and Figures |
|--|--------------|---|--|
| RQ1: Does the <i>congruency</i> of fit between the post content and the brand fan page affect sharing? Is online content with a low degree of <i>congruency</i> more likely to capture fans' interest and be shared? | Study 1 | Analysis of four brands posting activity: Zero-Inflated NBD | Figure 1 Tables 2-5 |
| RQ2: If so, does the impact of <i>congruency</i> between the fan page and the post vary with the presence of promotional incentives? | Study 1 | Analysis of four brands posting activity: Zero-Inflated NBD | Figure 1 Tables 2-5 |
| RQ3: Can companies actually design social media campaigns using their corporate Facebook pages to boost rebroadcasting by manipulating the degree of <i>congruency</i> and the presence of promotions? | Study 2 | Field experiment: Samsung Mobile Facebook page | Figures 2-4 Tables 6-7 |
| RQ4: What types of social media campaign works best, and why? | Study 3 | Post-test survey using Qualtrics and Prolific panels | Figures 3,5 Table 8-9 Tables A1-A2 |

Table 2: Summary Statistics about Posting activity of the four brands considered

| Product Category of the Brand | # Fans | # Posts | # Likes | | # Comments | | # Shares | |
|-------------------------------|-----------|---------|----------|----------|------------|--------|----------|--------|
| | | | Mean | SD | Avg | SD | Avg | SD |
| Electronics | 2,719,522 | 468 | 1,073.10 | 2,278.12 | 51.00 | 184.83 | 74.69 | 202.58 |
| Mobile devices | 2,118,670 | 700 | 1,452.15 | 4,733.18 | 45.22 | 171.69 | 90.65 | 367.20 |
| Beverages 1 | 1,026,122 | 337 | 1,038.50 | 2,277.51 | 23.77 | 76.91 | 134.64 | 342.07 |
| Beverages 2 | 587,479 | 370 | 1,160.39 | 2,080.70 | 23.21 | 46.25 | 176.34 | 395.56 |
| Total | 6,451,793 | 1,875 | - | - | - | - | - | - |

Table 3: Operationalization and Description of the Main Variables (Study 1)

| Dependent Variable | Description |
|--------------------|---|
| Share | Number of times each post has been shared |
| Covariates | |
| Fit | Extent to which the brand post is congruent with the page contents, measured on a 7-point scale (see Table A2, appendix) |
| Promotion | Dummy variable indicating whether the post includes a promotional activity (e.g., price promotion, price rewards), not necessarily concerning the brand of the fan page |
| Controls | |
| Informativeness | Dummy variable indicating whether the brand post contains information pertaining to the brand or product category |
| Photo | Dummy variable indicating whether the post contains a photo |
| Album | Dummy variable indicating whether the post contains an album |
| Video | Dummy variable indicating whether the post contains a video |
| Link | Dummy variable indicating whether the post contains a link to a different website |
| Call-to-Act | Dummy variable indicating whether the post asks people to engage in specific actions (e.g., “click like if you prefer option A, or comment if you prefer option B”) |
| Event | Dummy variable indicating whether the post advertises an event |
| Question | Dummy variable indicating whether the text of the post contains a question |
| Post Length | Number of characters in the text of each post |
| Top Position | Number of days the post was in the top position on the page, represented by the number of days elapsed between the focal post and the subsequent post |
| Tags | Number of tags (of people and/or other Facebook fan pages) in each post |
| Hashtags | Number of hashtags in the text of each post |

Table 3: Summary statistics of the variables considered in equations (1) and (2)

| Dependent Variable | Relative Freq | Mean | SD | Min | Max |
|----------------------------|---------------|--------|--------|-----|-------|
| Share | - | 111.48 | 337.25 | 0 | 6,000 |
| Main independent variables | Relative Freq | Mean | SD | Min | Max |
| Fit | - | 4.90 | 1.81 | 1 | 7 |
| Promotion | 16.40% | - | - | - | - |
| Adv other brands | 14.53% | - | - | - | - |
| Controls | Relative Freq | Mean | SD | Min | Max |
| Post Length | - | 98.39 | 91.42 | 0 | 650 |
| Top Position | - | 0.65 | 0.89 | 0 | 14 |
| Tags | - | 0.73 | 2.78 | 0 | 44 |
| Hashtags | - | 0.54 | 0.74 | 0 | 6 |
| Informativeness | 62.35% | - | - | - | - |
| Photo | 85.28% | - | - | - | - |
| Album | 10.13% | - | - | - | - |
| Video | 3.15% | - | - | - | - |
| Link | 30.88% | - | - | - | - |
| Call-to-Act | 10.45% | - | - | - | - |
| Event | 16.11% | - | - | - | - |
| Question | 22.61% | - | - | - | - |
| Answer | 42.29% | - | - | - | - |
| Morning | 40.85% | - | - | - | - |
| Monday | 19.47% | - | - | - | - |
| Tuesday | 15.36% | - | - | - | - |
| Wednesday | 20.96% | - | - | - | - |
| Thursday | 16.96% | - | - | - | - |
| Friday | 19.84% | - | - | - | - |
| Weekend | 7.41% | - | - | - | - |
| Fan-Page Fixed Effects | Relative Freq | | | | |
| Brand 1 | 19.73% | - | - | - | - |
| Brand 2 | 17.97% | - | - | - | - |
| Brand 3 | 24.96% | - | - | - | - |
| Brand 4 | 37.33% | - | - | - | - |

Table 5: Zero-Inflated Negative Binomial Regression Study 1

| Dependent Variable: | | Number of Shares | | | | | |
|----------------------|--------------------|----------------------------|-----------|-----------|--------------------|------------|-----------|
| | | Negative Binomial | | | Logit ^a | | |
| | | Eq(3) | Coef. | Std.Error | Eq(4) | Coef. | Std.Error |
| Fit | | β_1 | 0.111*** | (0.030) | λ_1 | -0.490*** | (0.161) |
| Promotion | | β_2 | -1.203** | (0.574) | λ_2 | -3.046 | (5.822) |
| Promotion*Fit | | β_3 | 0.186** | (0.095) | λ_3 | -2.220** | (0.909) |
| Adv other brands | | γ_1 | -0.474* | (0.273) | ν_1 | 3.376*** | (1.157) |
| Informativeness | | | 0.197 | (0.127) | | -1.243 | (0.798) |
| Vividness | No (Baseline) | | - | - | | - | - |
| | Photo | γ_2 | 0.951* | (0.492) | ν_2 | -24.721*** | (3.662) |
| | Album | γ_3 | 1.800*** | (0.540) | ν_3 | -28.313*** | (4.345) |
| | Video | γ_4 | 1.953*** | (0.587) | ν_4 | -53.925*** | (3.313) |
| Interactivity | No (Baseline) | | - | - | | - | - |
| | Link | γ_5 | 0.639*** | (0.116) | ν_5 | -6.650*** | (1.241) |
| | Call-to-Act | γ_6 | -0.141 | (0.101) | ν_6 | -14.472*** | (1.899) |
| | Event | γ_7 | -0.666*** | (0.170) | ν_7 | 0.578 | (0.863) |
| | Question | γ_8 | -0.141* | (0.082) | ν_8 | -1.205 | (1.922) |
| | Answer | γ_9 | 0.473 | (0.101) | ν_9 | -15.342*** | (2.387) |
| Post | Post Length | γ_{10} | -0.000 | (0.001) | ν_{10} | -0.130*** | (0.002) |
| Characteristics | Top Position | γ_{11} | 0.356*** | (0.064) | ν_{11} | -20.866*** | (3.449) |
| | Tags | γ_{12} | 0.143*** | (0.024) | ν_{12} | 0.746*** | (0.180) |
| | Hashtags | γ_{13} | 0.034 | (0.073) | ν_{13} | -1.525* | (0.908) |
| Time of Day | Morning | γ_{14} | 0.321*** | (0.098) | ν_{14} | 1.254** | (0.541) |
| Weekdays | Monday | γ_{15} | -0.690*** | (0.247) | ν_{15} | 3.681** | (1.453) |
| | Tuesday | γ_{16} | -0.213 | (0.251) | ν_{16} | -0.276 | (1.442) |
| | Wednesday | γ_{17} | -0.016 | (0.249) | ν_{17} | -0.349 | (1.559) |
| | Thursday | γ_{18} | 0.028 | (0.258) | ν_{18} | 3.444** | (1.372) |
| | Friday | γ_{19} | -0.175 | (0.259) | ν_{19} | 1.062 | (1.350) |
| | WeekEnd (Baseline) | | - | - | | - | - |
| | Christmas | γ_{20} | 0.582** | (0.232) | ν_{20} | -33.521 | (3.162) |
| | Trend | γ_{21} | -0.002*** | (0.000) | ν_{21} | 0.019*** | (1.157) |
| Fan Page | Brand 1 | τ_1 | 0.020*** | (0.193) | ι_1 | -10.474*** | (1.925) |
| Fixed Effects | Brand 2 | τ_2 | -0.251 | (0.175) | ι_2 | -56.041*** | (7.761) |
| | Brand 3 | τ_3 | -0.740*** | (0.168) | ι_3 | 0.298 | (0.648) |
| | Brand 4 (Baseline) | | - | - | | - | - |
| Constant | | ω | 2.871*** | (0.591) | ζ | 25.025*** | (3.610) |
| Number of obs = 1875 | | Non-zero obs = 1,417 | | | Zero obs = 404 | | |
| | | Wald $\chi^2(28) = 412.96$ | | | | | |

^a The Logit model accounts for the probability of not sharing. Robust standard errors are in parentheses.

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

Table 6: Descriptive Analysis Study 2 (Field Experiment)

| Experimental Conditions | | People Reached | Total Reactions | | | |
|-------------------------|-------|----------------|-----------------|----------|--------|-------|
| Fit | Promo | | Shares | Comments | Clicks | Likes |
| Low | No | 103,514 | 23 | 25 | 826 | 1,505 |
| High | No | 158,326 | 64 | 27 | 1,814 | 2,814 |
| Low | Yes | 127,453 | 13 | 3 | 1,170 | 1,129 |
| High | Yes | 156,893 | 73 | 24 | 1,884 | 1,942 |

Table 7: Logistic Regression Analysis Study 2 (Field Experiment)

| Dependent Variable: | Share ^a | | Comment ^a | | Click ^a | | Like ^a | |
|-----------------------------------|--------------------|-------------|----------------------|------------|--------------------|--------------|-------------------|--------------|
| | Coef. | Wald | Coef. | Wald | Coef. | Wald | Coef. | Wald |
| Fit High - Promo No ^b | 0.599 | 6.06** | -0.348 | 1.57 | 0.365 | 75.03*** | 0.204 | 40.23*** |
| Fit High - Promo Yes ^b | 0.739 | 9.56** | -0.457 | 2.55 | 0.413 | 96.94*** | -0.163 | 22.25*** |
| Fit Low - Promo Yes ^b | -0.799 | 5.04** | -2.329 | 14.52*** | 0.141 | 9.59*** | -0.501 | 160.25*** |
| Constant | -8.412 | 1,627.06*** | -8.328 | 1,733.61** | -4.823 | 19,059.40*** | -4.216 | 26,365.28*** |

^a N=546,186 represents the total number of unique people reached who have seen the post published by Samsung Facebook Page. For each individual reached, we created a dummy variable that takes value 1 if a specific action (e.g., share) was made, and 0 if not.

^b the reference group is Fit Low - Promo No

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

Table 8: Linear Regression Estimation Attitude Model (Study3)

Panel A: Study 3A

| Dependent Variable: | Attitude toward the post | | | | |
|-----------------------|--------------------------|---------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| | Promo No Fit No | Promo No Fit Yes | Promo Yes Fit No | Promo Yes Fit Yes | General Model |
| | $\kappa_{(1)}$ | $\kappa_{(2)}$ | $\kappa_{(3)}$ | $\kappa_{(4)}$ | κ |
| Reactance (R) | -0.290*** (0.073) | -0.068 (0.119) | -0.275*** (0.090) | -0.115 (0.094) | -0.200*** (0.048) |
| Social Benefits (SB) | -0.0304 (0.100) | 0.068 (0.135) | -0.250** (0.108) | 0.183 (0.126) | -0.001 (0.062) |
| Self-enhancement (SE) | 0.340*** (0.103) | 0.685*** (0.146) | 0.400*** (0.108) | 0.149 (0.151) | 0.378*** (0.067) |
| Altruism (A) | 0.305** (0.120) | 0.103 (0.173) | 0.372*** (0.135) | 0.681*** (0.187) | 0.331*** (0.081) |
| Constant | 0.000 (0.088) | -0.126 (0.119) | 0.182* (0.105) | -0.016 (0.134) | 0.000 (0.059) |
| R-squared | 0.620 | 0.553 | 0.522 | 0.509 | 0.469 |

Panel B: Study 3B

| Dependent Variable: | Attitude toward the post | | | | |
|-----------------------|--------------------------|---------------------|---------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| | Promo No Fit No | Promo No Fit Yes | Promo Yes Fit No | Promo Yes Fit Yes | General Model |
| | $\kappa_{(1)}$ | $\kappa_{(2)}$ | $\kappa_{(3)}$ | $\kappa_{(4)}$ | κ |
| Reactance (R) | -0.381*** (0.112) | -0.071 (0.098) | -0.230** (0.096) | -0.147* (0.083) | -0.225*** (0.048) |
| Social Benefits (SB) | 0.404 (0.243) | 0.447** (0.194) | 0.112 (0.176) | 0.177 (0.163) | 0.232** (0.092) |
| Self-enhancement (SE) | 0.089 (0.208) | -0.039 (0.202) | 0.015 (0.176) | 0.069 (0.133) | 0.040 (0.088) |
| Altruism (A) | 0.125 (0.187) | 0.254 (0.150) | 0.431*** (0.129) | 0.323** (0.137) | 0.302*** (0.072) |
| Constant | -0.164* (.086) | 0.140** (0.063) | -0.134** (0.064) | 0.086 (0.062) | 0.000 (0.032) |
| R-squared | 0.510 | 0.549 | 0.442 | 0.404 | 0.457 |

Standard errors are in parentheses.

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

Table 9: Linear Regression Estimation Intention to Share Model (Study 3)

| Dependent Variable: | Intention to share | |
|------------------------------------|---------------------|---------------------|
| | Study 3A | Study 3B |
| | η | η |
| Post Attitude (predicted) (PA) | 1.482*** (0.129) | 1.270*** (0.207) |
| Perceived Behavioral Control (PBC) | -0.221** (0.091) | -0.087 (0.074) |
| Subjective Norm (SN) | 0.152** (0.076) | 0.656*** (0.091) |
| Constant | 4.340*** (0.576) | 1.290*** (0.372) |
| R-squared | 0.481 | 0.511 |
| Observations | 235 | 195 |

Standard errors are in parentheses.

* Significant at 0.10 level

** Significant at 0.05 level

*** Significant at 0.01 level

APPENDIX

Table A1: Measurement Scales

| Variable | Cronbach's Alpha | | Items |
|--------------------------------------|------------------|----------|--|
| | Study 3A | Study 3B | |
| Attitude toward the post | 0.94 | 0.86 | This post is effective I like this post This post is interesting |
| Reactance (Hong & Faedda, 1996) | 0.91 | 0.74 | This post gave me a negative feeling This post made me feel annoyed This post made me feel irritated I feel like acting against the wishes of Samsung I feel that my freedom to share/comment this content is threatened I feel that I am forced to share/comment a content I don't want to share/comment I feel that I am free to choose which content of the page to share/comment |
| Self-Enhancement | 0.92 | 0.78 | Sharing this post makes me better in my friends' eyes Sharing this post shows others that I am a smart shopper Sharing this post shows others that I am an expert in mobile phones Sharing this post shows others that I stay updated on mobile phones news |
| Social Benefits | 0.92 | 0.77 | Sharing this post allows me to know interesting people on Facebook Sharing this post is a way to communicate with other people through Facebook Sharing this post is a nice way to interact with others |
| Altruistic Motivation | 0.82 | 0.78 | This post allows me to help others This post allows me to share information useful to others This post promotes the diffusion of information potentially interesting to others |
| Involvement (Beatty & Talpade, 1994) | 0.92 | 0.83 | In general, I have a strong interest in Samsung products Samsung products matters a lot to me In general, Samsung products mean nothing to me Samsung products are beautiful Samsung products are useful Samsung products are exciting Samsung products are very relevant to me |
| Share (Berger & Milkman, 2012) | n.a. | n.a. | Please indicate how strong is your intention to share this post with others in the next three days |
| Perceived Behavioral Control | n.a. | n.a. | I could easily share any post from the Samsung Facebook page if I wanted to |
| Subjective Norm | n.a. | n.a. | Most people like me would share this post from the Samsung Facebook page |

Note: Confirmatory factor analysis (CFA) was conducted to determine the factors

Table A2: Fit Manipulation Check

Panel A: Study 3 A

| Variable | Mean | | Diff | t |
|--|------------------|------------------|--------|--------|
| | Low Fit | High Fit | | |
| This post is coherent with the typical contents of Samsung's Facebook fan page | 5.113 (0.105) | 5.550 (0.104) | 0.437 | 2.955 |
| This post is in line with the personality and the values of Samsung | 5.287 (0.101) | 5.558 (0.104) | 0.271 | 1.867 |
| This post is coherent with Samsung | 5.357 (0.111) | 5.617 (0.101) | 0.260 | 1.737 |
| In general, the image of the post I have seen has nothing to do with Samsung | 3.409 (0.164) | 2.592 (0.148) | -0.817 | -3.712 |
| This post well represents Samsung | 5.139 (0.118) | 5.542 (0.108) | 0.403 | 2.511 |

Panel B: Study 3B

| Variable | Mean | | Diff | t |
|---|------------------|------------------|-------|--------|
| | Low Fit | High Fit | | |
| With respect to the typical contents I expect to find in the Samsung's Facebook page, this post is: (Incoherent – Coherent) | 5.262 (0.266) | 7.382 (0.209) | 2.112 | 6.280 |
| With respect to the Samsung brand, this post is: (Inconsistent – Consistent) | 5.473 (0.273) | 7.345 (0.233) | 1.871 | 5.221 |
| With respect to the Samsung brand, this post is: (Incoherent – Coherent) | 5.661 (0.275) | 7.160 (0.241) | 1.500 | 4.111 |
| Taking into account Samsung's personality and values, this post is: (Disaligned – Aligned with Samsung's personality and values – consistent) | 6.013 (0.234) | 7.195 (0.195) | 1.181 | 3.880 |
| This post: (Does not represent Samsung – Does represent Samsung) | 4.669 (0.279) | 7.225 (0.244) | 2.556 | 6.895 |
| In general, the post I saw is: (Unrelated to the brand Samsung – Related to the brand Samsung) | 4.340 (0.272) | 8.071 (0.216) | 3.731 | 10.756 |

Note: Standard errors are in parentheses