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1 **When sponsorship causes anger: Understanding negative fan reactions to postings on**
2 **sports clubs' online social media channels**

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When sponsorship causes anger: Understanding negative fan reactions to postings on sports clubs' online social media channels

Abstract

Research question: Fans' perception that sponsors are a financial need illustrating the increased commercialisation in sports is not always aligned with their view of a club's culture. This perceived imbalance represents a challenge in the online marketing strategies of sports clubs. When club managers decide on the content of online social media posts/messages related to sponsors, they should be aware of potential fan reactions. Therefore, this study analyses how sponsor-related and other online social media communication of football clubs affect fan reactions.

Research methods: We analyse Facebook postings (N=4,603) published by German first division football clubs. After classifying postings regarding their content, we regress 'Reactions', 'Shares', and 'Angry' reactions on the content variable and further covariates. Linear regression models, Poisson regression models, and general dominance statistics are used for exploring variance within the data.

Results and Findings: Fans react considerably angrier to sponsor-related posts than to other content except for defeat-related postings. Regarding overall reactions and shares, sponsor-related posts perform worst among different contents. In addition, the content of posts is elementary to negative reactions, but of less importance to overall reaction rates.

Implications: Sports managers and sponsors should be aware of the potential negative shift in reactions when using clubs' social media channels to share sponsor-related content. We recommend releasing sponsor-related posts as videos on game days to decrease the fraction of negative responses and simultaneously maximize the overall reactions.

Keywords: Facebook; Sponsorship; Social Media; Football; Sports Fans.

1 **When sponsorship causes anger: Understanding negative fan reactions to postings on**
2 **sports clubs' online social media channels**

3 Like other entertainment-related brands, sports clubs increasingly use online social
4 media channels (OSMC; e.g. Facebook, Twitter, or Instagram) for developing relationships
5 with consumers, building up consumption capital, and offering branded entertainment
6 (Anagnostopoulos, Parganas, Chadwick, & Fenton, 2018). Sports clubs trigger strong
7 consumer involvement (Beaton, Funk, Ridinger, & Jordan, 2011; Waters et al., 2011), and fans
8 share emotions more frequently than average consumers do (Benigni, Porter, & Wood, 2009).
9 Therefore, from a club's brand management perspective, the growing importance of
10 communication via OSMC is not surprising (Abeza, O'Reilly, Séguin, & Nzindukiyimana,
11 2015; Filo, Lock, & Karg, 2015; Ruiz-Mafe & Veloutsou, 2017). While research has associated
12 fan emotions mainly with game outcomes for a long time, newer studies have expanded this
13 view by considering the stimuli triggered by sports teams and marketing activities leading to
14 these emotions (Kwak, Kim, & Hirt, 2011; Lee, Kim, & Heere, 2018). Consequently,
15 understanding fans' emotional reactions towards teams and their activities is crucial for sports
16 managers because these reactions may be a display of fans' loyalty towards the club (Biscaia
17 Correia, Rosado, Maroco, & Ross, 2012; Kaynak, Salman, & Tatoglu, 2008).

18 In this regard, sports managers need to understand how to minimize fans' negative
19 emotional reactions (e.g. anger, unhappiness, and worry) on OSMC to prevent damaging their
20 relationship with the club (Coulter et al. 2012). One possibility to influence fan reactions seems
21 to be through the content of OSMC posts (Yuki, 2015). While sports clubs have no choice to
22 hold back negative public information (i.e. game results or player transfers), they are more
23 flexible when it comes to non-public content. One category of non-public content posted

1 voluntarily¹ is content related to sponsors (Eagleman & Krohn, 2012; Delia & Armstrong,
2 2015). Indeed, posting slots on a club's OSMCs are usually included in sponsorship packages
3 (Meenaghan, 2013), which is why sponsor-related content on OSMCs has become a frequent
4 issue for sports organisations (Delia & Armstrong, 2015).

5 A fan's reaction to sponsor-related content is a manifold and complex construct. For
6 many fans, supporting a club is an integral part of their identity (Lock & Heere, 2017) and they
7 do not switch clubs even when they are unhappy with the team's performance or league
8 standing (Giulianotti, 2005; Koenigstorfer, Groeppel-Klein, & Schmitt, 2010). However, since
9 fans often perceive the club as 'belonging' to them (Margalit, 2008), they tend to turn club-
10 related events into cultural and social events, and often disregard the commercialisation and
11 business part of it (Dionísio, Leal, & Moutinho, 2008). The resulting lack of congruence
12 between a club's identity (culture) and its sponsors (commercialisation) might induce negative
13 reactions (Kennedy & Kennedy, 2012; Martinez & Janney, 2015; Popp, Germelmann, & Jung,
14 2016; Popp, Horbel, & Germelmann, 2018), while positive reactions are triggered if fans
15 perceive a fit between both parties (Biscaia et al., 2017). Therefore, despite contributing to the
16 clubs' financial stability and growth, sponsors might lead to an increased team
17 commercialisation and not align with the club's culture. This perceived imbalance between
18 club and sponsor (Mazodier & Quester, 2014) is a challenging issue for managing OSMC due
19 to the potential impact on fans' negative reactions (Cornwell & Kwon, 2019; Meenaghan,
20 2013; Popp et al., 2018).

21 Although recommended by past literature (Abeza et al., 2015; Filo et al., 2015),
22 research on fan reactions to sponsor-related posts (i.e. posts by a club endorsing a sponsor) is
23 still sparse and requires further development because the extent to which these posts are viewed

¹ Even if the post is contractually fixed, the decision to sign the contract with a sponsor regarding posts on their OMSC is a free choice from a club's perspective.

1 more positively or negatively by club fans is an important indicator of performance
2 (Meenaghan, McLoughlin, & McCormack, 2013) for both clubs and associated sponsors.
3 Hence, the examination of fan reactions to sponsor-related posts is both timely and warranted.
4 The purpose of the current study is to address this research gap by investigating (1) how fans
5 react to the content of posts on a club's OSMC, and (2) whether there are more negative user
6 reactions to sponsor posts compared to other content posts.

7

8 **Theoretical Background and Hypotheses**

9 **Sports Clubs and Online Social Media Channels**

10 Motivated by the convenience of constant updates, fans follow their clubs' OSMC and
11 interact with the club and other fans (Mahan, 2011; Santos, Correia, Biscaia, & Pegoraro,
12 2019). Consequently, a well-managed OSMC is an important tool for clubs in their
13 relationship-marketing (Williams & Chinn, 2010) and is distinctly more beneficial for
14 consumer engagement than unidirectional marketing campaigns (Santos et al., 2019; Yan,
15 Watanabe, Shapiro, Naraine, & Hull, 2018). Therefore, monitoring OSMC content seems
16 crucial to gain competitive advantages and to provide club managers with quantitative feedback
17 on the level of consumption capital related to their clubs (Ghiassi, Skinner, & Zimbra, 2013;
18 Kaplan & Haenlein, 2010; Prinz, Weimar & Deutscher, 2012).

19 Understanding how fans react to OSMC content is also vital for managing a club's
20 brand image (Abeza et al., 2015; Filo et al., 2015). Following Keller (1993), a club's image
21 refers to the set of mental associations consumers hold in memory regarding that club. These
22 associations can be further classified into attributes (product-related or non-product-related),
23 benefits (meaning attached to the product by consumers), and attitudes (consumers' overall
24 evaluation of the brand) (Biscaia et al., 2016; Keller, 1993). In contrast to attitudes and
25 perceived benefits (e.g. pride in place, peer-group acceptance, escape, entertainment) that often

1 arise from a club's brand attributes and are often less controllable, a sports club can directly
2 influence the communication of product-related attributes (e.g. club performance, players and
3 head coach) and non-product-related attributes (e.g. club history and tradition) when
4 developing a club's brand image (Bauer, Stokburger-Sauer, & Exler, 2008; Biscaia et al., 2016;
5 Kunkel, Funk, & King, 2014). Past research has shown that such attributes of clubs' brand
6 images are key predictors of consumers' reactions to these clubs (Biscaia et al., 2016; Kunkel,
7 Hill, & Funk, 2013). For example, Bauer, Sauer, and Exler (2005) suggested that positive brand
8 attributes (product- and non-product-related) are the means for consumers to obtain a desired
9 benefit. In this regard, the content and the way it is communicated by sport properties via
10 OMSCs contributes to an increased consumer online experience (Huang & Hsu, 2010;
11 Kharouf, Biscaia, Garcia-Perez, & Hickman, in press). In addition, Önder, Gunter, and Gindl
12 (2019) found that content type tends to affect consumer reactions, and thus product- and non-
13 product-related attributes might influence how fans react to a club's OSMC communication
14 (Bauer et al., 2008; Kunkel et al., 2013).

15 This connection has been observed for different sport-related brands such as clubs and
16 athletes. For example, Geurin-Eagleman and Burch (2016) noted that athletes' posts related to
17 their athletic pursuits (e.g. athlete-related news, competition outcomes, injuries) are more
18 appreciated by fans than other posts. Furthermore, Anagnostopoulos et al. (2018) examined
19 two clubs and verified that club management-related information via OSMC tends to generate
20 fewer likes (e.g. pictures or announcements of the executive management), while Parganas,
21 Anagnostopoulos, and Chadwick (2015) focused on a single football club and noted that posts
22 related to star players and team success (i.e. product-related) generate more engagement (e.g.
23 retweets) among fans both in off-season and during the season. Collectively, these studies seem
24 to align with balance theory (Heider, 1958) suggesting that people react more positively to
25 consistency (i.e. sport-related brands posting content linked to the core product). Although

1 these studies provide useful insights for managing different brands involved in the sport
2 ecosystem, the analysis of club-related communication through OSMC should extend beyond
3 ‘likes’ and ‘tweets’ and focus on a greater number of clubs to better understand how to manage
4 club-fan relations. In addition, tourism researchers have suggested that the way content is
5 posted (e.g. core-product-related or promotions) influences consumer interactions (Önder et
6 al., 2019) and that the medium used to share the information (e.g. videos or photos) as well as
7 conversational posts (as opposed to advertising posts) influence the number of consumer
8 reactions (Kwok & Yu, 2013). In a study of the Giro d’Italia (bicycle racing), Kassing and
9 Sanderson (2010) found that event-specific information was especially suitable to foster fan
10 interaction. Wallace, Wilson, and Miloch (2011) further showed that product-related posts of
11 NCAA organisational sport pages led to a significantly higher number of likes than non-
12 product-related posts. Posts signalling authenticity and fan interaction (e.g. raffles) especially
13 influence the relationships between clubs and their fans positively (Pronschinske, Groza, &
14 Walker, 2012). Therefore, based on previous literature analysing different types of posts (e.g.
15 advertising, event, game or athlete-related, management and sponsor announcements) and the
16 remaining gaps, we propose that:

17 H1: The type of content of a sports club’s posts on OSMC influences the number of fan
18 reactions.

19 **Negative Fan Reactions to Sports Clubs’ OSMC-Content**

20 Besides using information found in OSMCs as inspiration for further consumption or
21 for sharing positive emotions (Heinonen, 2011), fans might also communicate negative
22 feelings towards a club with other online consumers (Jansen, Zhang, Sobel, & Chowdury,
23 2009; Popp et al., 2016). The behavioural consequences of negative emotional reactions can
24 range from a negative influence on future consumption intentions to negative word-of-mouth
25 or anti-brand activism (Bagozzi et al., 2016; Zeelenberg & Pieters, 2004; Popp et al., 2018).

1 Thus, to properly manage a club's image among fans, sports clubs are assumed to generally act
2 averse towards content potentially eliciting negative behavioural reactions in OSMC
3 environments given that such reactions negatively correlate with fan loyalty (Coulter et al.,
4 2012).

5 Negative reactions often emerge when fans perceive a conflict between different parties
6 in a sport setting, and balance theory has proven valuable to explain it in relation to clubs and
7 sponsors (e.g. Angell, Gorton, Bottomley, & White, 2016; Demir, & Söderman, 2015; Popp et
8 al., 2018). According to Heider's (1958) balance theory, people strive for psychological
9 balance in their lives. This implies that, when individuals have a positive perception about an
10 object (e.g. sports club) and a negative perception about an associated object (e.g. sponsor),
11 they feel a sense of imbalance (Peluso, Rizzo, & Pino, 2019; Popp et al., 2018). Following this
12 rationale, a mismatch (i.e. lack of fit or imbalance) between fan expectations concerning a
13 club's product- and non-product related attributes (e.g. success, tradition or culture) and the
14 content of posts on OSMCs might lead to negative reactions since unfulfilled expectations
15 negatively influence fans' satisfaction and feelings of balance (Peluso et al., 2019; Yoon &
16 Kim, 2000).

17 Within this discussion of negative reactions to the content of posts on OSMCs of sports
18 clubs, past research indicated sponsor-related communication as one potential source of
19 conflict (Biscaia et al., 2017; Kim, Lee, Magnusen, & Kim, 2015; Tsordia, Papadimitriou, &
20 Parganas, 2018). Digital environments provide companies with sponsorship opportunities to
21 engage individuals and groups, communicate real-time offers, build communities of interest,
22 and offer new user experiences (Meenaghan et al., 2013). Sport properties also use OSMCs to
23 attract and promote sponsors (Eagleman & Krohn, 2012; Alonso-Dos-Santos, Guardia,
24 Campos, Calabuig-Moreno, & Ko, 2018; Santos et al., 2019). To this respect, it is important to

1 note that fan reactions towards OSMC posts are often affected by the relationship with the club
2 and that the sponsor appears as a third party in this relationship (Popp et al., 2018).

3 Posts regarding a sponsorship may lead to positive reactions if fans perceive them to
4 be credible and helpful to the club (Biscaia et al., 2017; Rifon, Choi, Trimble, & Li, 2004).
5 Since relatedness influences storage in memory and retrieval of information (Cornwell, Weeks,
6 & Roy, 2005), a perceived high degree of fit also leads to positive reactions (Angell et al.,
7 2016). In addition, the sponsor-sponsee fit has been suggested to positively influence
8 perceptions of altruistic motives and credibility of the sponsors (Rifon et al., 2004). However,
9 since fans often perceive sports not as business but as culture, reactions to sponsorship can also
10 generate tension (Kennedy & Kennedy, 2012). This is problematic, since research on
11 sponsorship and balance theory suggests that fans want to avoid such perceived inconsistencies
12 between sponsor and sponsee (Cornwell et al., 2005). In summary, sponsors and clubs have the
13 potential to affect one another and to trigger fan reactions (Dalakas & Levin, 2005; Kunkel &
14 Biscaia, 2020). As noted by Gwinner and Eaton (1999), image transfer often occurs in a
15 sponsorship agreement due to an associate network process, and a lack of fit between both
16 parties may lead to unfavourable thoughts if the incongruency is not resolved by managers
17 (Jagre, Watson, & Watson, 2001; Mazodier & Quester, 2014). When there is a lack of fit
18 between the sponsor (commercialisation) and a club's identity (culture), fans may perceive
19 sponsorship posts as not adding value to their online experience with the club (Williams &
20 Chinn, 2010) and thus have negative reactions (Martinez & Janney, 2015). This highlights the
21 importance of the fit between both parties (i.e. strategic match between sponsor and sports club
22 in business, mission, target, audience, geographic location, image, and/or values; Becker-Olsen
23 and Hill, 2006; Mazodier & Merunka, 2012),

24 Since the perceived fit (or non-fit) between a club and its sponsor influences a fan's
25 reaction to the sponsor brand (e.g. Biscaia et al., 2017; Delia & Armstrong, 2015; Popp et al.,

1 2018), one might expect spillover effects to the club's image. For instance, increased
2 commercialisation (e.g. player salaries or sponsors) or unauthentic club or player behaviour
3 have led to prompt declines in crowd numbers (both at live and TV games) and other negative
4 fan reactions in the German Bundesliga in the past (Merkel, 2012). Also, Delia and Armstrong
5 (2015) have noted that both positive and negative mentions to sport event sponsors are common
6 in online platforms. Given that fans often develop a stronger sense of identification with their
7 teams (Lock & Heere, 2017), and that sponsorship incongruence can be detrimental to sports
8 clubs due to the difficulty to cognitively reconcile (Groza, Cobbs, & Schaefers, 2012) the
9 sponsor message with the club's values and image (Kennedy & Kennedy, 2012), an
10 examination of how sponsor-related posts affect associated clubs is timely and warranted.
11 Based on previous research and the existing gap in understanding fan reactions to sponsor-
12 related posts on OSMC, we propose that:

13 H2: If the content of a post on a club's OSMC is sponsor-related, then the number of negative
14 reactions is higher compared to other content.

15

16 **Empirical Analysis**

17 **Data Sample**

18 Among the 18 German first division (Bundesliga) clubs investigated in this study, all
19 run a Facebook channel. Facebook has been suggested to be an important OSMC to understand
20 how individuals react to brands since many people use the platform to retrieve information.
21 Consumers visit Facebook pages because they tend to apply the principle of least effort and
22 this platform is one of the easiest ways to retrieve information while avoiding information
23 overload (Önder et al., 2019). Our data sample covers information on all Facebook posts that
24 were released by the 18 First Division Bundesliga clubs between February 1st and March 31th,
25 2017 (N=4,603 posts). Since the number of posts for football clubs per day is generally high,

1 we restricted the research to a two-month period. The reactions for every post were manually
2 collected after four weeks. This time gap between the day of the posting and the collection of
3 the data was necessary for ensuring an almost complete capture of the reactions to the post
4 (since fans keep reacting to posts for several days). Therefore, the data represents the (time-
5 point related) accumulated reactions four weeks after the initial posting.

6

7 **Dependent Variables: Facebook Reactions**

8 Facebook offers several outcome information linked with consumer reactions (e.g.
9 Prinz et al., 2012; Filo et al., 2015). Since 2009, Facebook users can ‘evaluate’ a post with the
10 ‘like’ button that reflects the reactions to a post’s content. Thus, the variable reflects the sum
11 of all reactions to a post. Facebook also enables users to share posts on their personal page by
12 clicking the ‘share’ button, which is reflected by the second dependent variable SHARES. Both
13 ‘reaction’ and ‘share’ buttons can be selected independently from each other. However, the
14 ‘share’ button offers a rather ambiguous measurement of reaction, since postings might be
15 shared through agreement or disagreement with the content (Larsson, 2018).

16 In order to offer users a more detailed way to express their feelings, Facebook
17 redesigned the ‘like’ button in 2015 by adding five options to the original like option: ‘love’,
18 ‘haha’ (i.e. funny/laugh), ‘wow’ (i.e. impressed/fascinated), ‘sad’ and ‘angry’ (i.e.
19 dislike/rejection). Therefore, REACTIONS is the sum of all these options (i.e. like, love,
20 laughing, wow, sad, angry). In accordance to hypothesis 2, adding the angry options to the post
21 reaction canon enabled us to investigate negative reactions.² Therefore, our third dependent
22 variable is labelled “ANGRY” and covers the number of users mainly associating a post with
23 anger or rejection. Still, as the total number of angry reactions may not be enough when

² Facebook itself offers the choice between like, love, sad, surprised and angry. Therefore, we only collected the information on likes and angry reactions and did not code the reactions by ourselves in any way.

1 examining hypothesis 2, we divided the total number of angry ‘statements’ by the overall
2 number of reactions (REACTIONS). This ANGRY RATIO could be compared among posts
3 with different reaches and is our fourth and main dependent variable.

4

5 **Independent Variables**

6 The main independent variable POST CONTENT contains information on the content
7 of Facebook posts. Since there is no existent research on the segmentation of post contents for
8 football clubs through Facebook, we clustered the posts explanatory into 13 subcategories,
9 which we found to reflect the best trade-off between maintaining variance in the data and
10 reducing the content dimensions to an analysable and interpretable number of subcategories.
11 Two researchers coded the content of the postings in an exploratory way. We grouped the first
12 content and compared it to the next. When we identified a clear distinction to the already
13 existing categories, a new category was defined. In doing this, we ended up with 13 categories:
14 advertising (e.g. merchandise), event-related (e.g. information for a special club event), fan-
15 related (e.g. information concerning fan meetings), game defeat (e.g. post-game reports after a
16 defeat), game draw (e.g. post-game reports after a draw), game pre-information (e.g.
17 preliminary reports to an upcoming game), game win (e.g. post-game reports after a victory),
18 injuries (e.g. news related to player injuries), management-related (e.g. announcement to
19 personnel changes of managerial aspects), other club-related (e.g. opponent, other local clubs),
20 player-related (e.g. posts related to player statements or news), sponsor-related (any verbal or
21 visual connection to the sponsor except for advertising for a certain product of the sponsor) and
22 raffle (announcements of a raffle).

23 Further covariates control for the month of the post (FEBRUARY=1, MARCH=2), the
24 WEEKDAY the post was released, the TIME OF THE DAY a post was released and the
25 medium used to transport the message (POST MEDIUM). With respect to the latter variable,

1 we distinguish between live videos (i.e. recorded via Facebook app and simultaneously
2 streamed), pictures, pure text messages, title pictures (i.e. pictures that appear in the page
3 heading to every user), and non-live videos. The option for these variables is based on previous
4 research highlighting the connection between the medium and the success/reach of the
5 communication (Bene, 2017; Gerodimos & Justinussen, 2015; Malhotra, Malhotra, & See,
6 2013).

7 **Descriptive Statistics**

8 Descriptive statistics (Table 1) show clear patterns of right skewed dependent variables,
9 which stems from the count nature of these variables. Count variables possess the largest
10 fraction of observation at the lowest level and decline rapidly from that maximum on. While
11 REACTIONS is less right skewed, SHARES shows zero observations within 25% of the lowest
12 values and ANGRY RATIO even among the lowest 75% of the observations. In contrast to
13 ANGRY RATIO, the variables REACTIONS, SHARES, and ANGRY show a much larger
14 variance compared to the mean, which is an indication of overdispersion in the count data. This
15 first impression is supported by a Pearson test of overdispersion. On average, Facebook posts
16 generated 2,956 reactions, they were shared 108 times, and received 15 angry reactions, which
17 makes 2% negative emotional responses.

18 [Table 1]

19 As shown in Table 2, the most frequent types of content were pre-game information
20 (24%) and player-related news (22%). As content of main interest in the present study, sponsor-
21 related posts were rather seldom with 61 posts among the 4,603 observations. Most posts were
22 released on Saturday (22%), which should be associated with the fact that Bundesliga games
23 are mostly taking place on that day. Monday was identified as the weekday with the smallest
24 fraction of posting activities. The detailed descriptive statistics for TIME OF DAY show that
25 the majority of the posting activities occur in the afternoon (35%) and evening (28%), with this

1 pattern being similar to previous research on OSMC activities (Golder, Wilkinson, &
2 Huberman, 2007). A vast majority of the posts (71%) contained a picture as content (POST
3 MEDIUM). Videos were also a popular medium with 22%.

4 [Table 2]

5 When investigating the bi-variate correlation structure among the metric and ordinal
6 variables (table 3), we found a high correlation ($r=0.76$) between REACTIONS and
7 SHARES, which is in line with previous findings indicating that the number of reactions is
8 more associated to shares than comments (Saxton & Waters, 2014). A rather low correlation
9 ($r=0.40$) between ANGRY and ANGRY RATIO can be seen as a further justification for the
10 differentiation between the two variables in the subsequent empirical estimations. No critical
11 correlations were found among the ordinal independent variables. Due to the high correlation
12 of both daytime variables ($r=0.86$), we decided to include the reduced daytime information
13 only.

14 [Table 3]

15 **Empirical Model**

16 To expand our understanding of the independent parameters, we used linear ordinary
17 least squares regressions as starting models. Since the total amount of a Facebook page's
18 postings influences the overall reaction rate (Prinz et al., 2012; Weimar, 2012) and the number
19 of Facebook fans strongly differs between the Bundesliga clubs, we concluded that fixed
20 effects are suitable (OLS FE).

21 Based on the linear model, the count nature of the dependent variables raises questions
22 about applying appropriate non-linear models to account for the right skewed distribution
23 and/or the high fraction of zeros in the data. For count data, non-linear Poisson regressions are
24 one possible approach (Long & Freese, 2014). However, Poisson estimations are biased if there
25 is overdispersion in the dependent variable. As discussed above, REACTIONS, SHARES, and

1 ANGRY (not ANGRY RATIO) are strongly characterized by overdispersion. To account for
2 overdispersion, a multiplicative random effect θ could be added to a Poisson regression model
3 to represent unobserved heterogeneity, which is then called a negative binomial regression
4 model (Long & Freese, 2014). To better measure the impact of the fixed effects in the
5 dominance models, we use an unconditional least squares dummy variable approach in every
6 model (LSDV).

7 For better insights into the relation between the dependent and independent variables
8 beyond statistical significance, we use a measurement of relative importance. For this purpose,
9 we use general dominance statistics (Budescu, 1993; Grömping, 2015), which reflect the
10 average marginal contribution of each independent variable to the overall R^2 of all possible
11 covariate combinations, also called Shapley values (Grömping, 2015). The final values can be
12 interpreted as > 0.14 strong effects, > 0.06 moderate effects, > 0.01 small effects, and < 0.01
13 negligible effects (Cohen, 1988; Richardson, 2011). The advantage of this method (compared
14 to t-values, standardized beta coefficients, or zero-order correlations) is a lower sensitivity to
15 multicollinearity (Tonidandel & LeBreton, 2011).

16 Results

17 Results show the highest variance explanation by the independent variables for our
18 main model 4 (ANGRY RATIO) with an adjusted R^2 of 47.8% (table 4). The variance within
19 REACTIONS for the posts seems to be more affected by unobserved factors, as the adjusted
20 R^2 is only 37.8%. In turn, variance within SHARES (16.3%) and total negative reactions (8.6%)
21 is even more determined by unobserved heterogeneity.

22 [Table 4]

23 Regarding POST CONTENT, dominance statistics show a diverse relation between
24 content and different reaction variables (table 5). While content explains 7% of the variance in
25 REACTIONS, its R^2 contribution rises up to 32% in the ANGRY RATIO model. Moreover,

1 its relative importance among the independent variables rises from 19% in REACTIONS up to
2 67%. In this term, the importance of a post's content is stronger than the fixed effects of the
3 clubs (73% variance explanation). This result suggests that the content has a strong impact on
4 ANGRY RATIO, but less on other reactions (5% of the total variance in SHARES, 6% of the
5 total variance in ANGRY). In a similar vein, the importance of POST MEDIUM is more
6 important for negative emotional reactions (13% of the total variance) than it is for the other
7 Facebook reaction statistics. As shown in table 5, the variables FEBRUARY, WEEKDAY, and
8 TIME OF DAY have only a negligible role in explaining variance within the Facebook
9 reactions (R^2 contribution <0.01). Summing up, the estimations showed statistically significant
10 differences in reactions of content to OSMC reactions, which supports hypothesis 1.

11 [Table 5]

12 The precise estimations from the linear regressions (table 4) and the non-linear count
13 model regressions (table 6) mainly confirm the first impressions from the dominance analysis.
14 Generally, the estimations from the OLS and the non-linear models are very similar, for which
15 reason we mainly refer to the non-linear estimations (table 6) in the subsequent part. In this
16 regard, FEBRUARY, WEEKDAY, and TIME of DAY show only few statistically significant
17 differences among the ordinal categories for REACTIONS and SHARES. As indicated by the
18 non-linear estimations (table 6), posts released on Saturday and Sunday receive more overall
19 reactions as posts released on other days, while Tuesday posts show the lowest total reaction.
20 Furthermore, "lunch posts" are less effective than others. Posts in the morning, evening and
21 night lead to statistically significant higher reactions and shares compared to "lunch posts".
22 More importantly, both the OLS and the Poisson estimations showed marginal effects of
23 FEBRUARY, WEEKDAY, and TIME of DAY on negative responses to posts.

24 [Table 6]

1 POST MEDIUM seems to have different impacts on the reaction variables. According
2 to table 6, pure text posts generated on average 1,849 reactions less than pictures. In addition,
3 videos were less effective than pictures, regarding REACTIONS. Focusing on ANGRY
4 RATIO, pictures lead to an average effect, whereby text and live videos increase the ratio, and
5 title pictures and videos lead to statistically significant less critical reactions. To put it in more
6 detail, compared to picture posts, title pictures lead to a decrease of 1.1% in ANGRY RATIO.
7 Compared to live videos, the difference is 5.1%. The high t-value of 7.15 suggests the strongest
8 difference. Videos lead to 0.6% less negative reactions compared to pictures, while text posts
9 increase to ratio of negative reactions by 1.8% and live videos even by 4%.

10 Results for POST CONTENT show important effects concerning our main model 8
11 (ANGRY RATIO, Table 6). Compared to the average effect for fan-related content, posts
12 related to a game defeat increase the return of negative perceptions (ANGRY RATIO) to a
13 maximum with a positive and statistically significant difference of 9.4%. That is 9.9% higher
14 than for raffle-related or victory-related posts, which are associated with the lowest return of
15 negative reactions. The difference between the highest right 95% confidence interval (95CFI)
16 of a game defeat (=0.11) and the lowest left 95CFI of other club-related posts (=-0.009)
17 indicates a maximum difference of the average effect of 11.9%. On average, sponsor-related
18 post lead to more negative reactions, which is statistically significantly different from the mean
19 determinant (fan-related posts). More precisely, sponsor-related posts lead to an increase of
20 negative reactions by 4.8% compared to the mean determinant and 5.3% in the category with
21 the lowest negative reaction rate (raffle). Thus, sponsor-related posts were the second most
22 negative post content among all content categories. Looking at the 95CFI of sponsor-related
23 posts, the range of an average coefficient lies between 7.5% and 3.1% above a raffle post as
24 the most positive content and between 3.7% and 5.4% below the most negative content (game
25 defeat). This negative effect of sponsor-related posts on Facebook reactions is also covered

1 with a statistically significant lower number of reactions and shares. Together with advertising
2 posts, sponsor-related posts perform lowest on REACTIONS (-2112 on average) compared to
3 fan related and even lowest on SHARES (-115 on average). According to the results discussed
4 above, hypothesis 2 is supported by the empirical analysis.

5 Further interaction models (Figure 1 - Figure 3) reveal statistically significant relations
6 among the relevant variables. Since sponsor-related posts were not recorded for every
7 subcategory (morning, live video, title picture, text), these categories were suppressed in the
8 figures. Figure 1 depicts the relation between the effect of sponsor-related posts and the
9 weekday. Based on the means, Saturday seems to be the best choice for posting sponsor-related
10 content, as the proportion of negative reactions (ANGRY RATIO) is the smallest. In turn,
11 Sunday should be avoided for posting sponsor-related content. While the mean is different from
12 other days, the 95CFIs only show a statistically significant difference from Monday and
13 Sunday. The large 95CFI for Thursday, Tuesday, and Wednesday result from the small amount
14 of observations for these days. Thus, the differences among the day times might be statistically
15 significant when increasing the number of observations. The preference for Saturday has also
16 been supported by additional interaction estimations with REACTIONS.

17 [Figure 1]

18 Figure 2 suggests rather posting sponsor-related information in the Evening to decrease
19 the ratio of negative responses. Midmorning showed the most critical mean. However, the
20 95CFIs are broad and make a differentiation between Midmorning, Lunch, and Afternoon
21 difficult. Separate interaction estimations for REACTIONS also showed similar patterns.

22 [Figure 2]

23 Regarding the medium of sponsor-related posts, only picture and video posts were
24 observed. Both are significantly different from each other (Figure 3). While a sponsor-related
25 picture leads to a proportion of 5.7% angry responses, a video only induces a negative rate of

1 1.6%. Therefore, one can conclude that sponsor-related posts should be released as videos on
2 Saturday evening to lower the negative reactions rates associated with the post.

3 [Figure 3]

4 **Discussion and Managerial Implications**

5 The current study aims at investigating how sponsor-related online social media
6 communication and other content posted by football clubs affect fan reactions. The results
7 show that social media posts related to a club's sponsors induce a higher probability of negative
8 reactions (except for game defeats). This may be related to the fact that fans are primarily
9 attracted to OSMC because of their commitment to the club and will to interact with other fans
10 (Stavros, Meng, Westberg, & Farrelly, 2014; Popp et al., 2018), and sponsor-related posts may
11 not add value to their online experience (Williams & Chinn, 2010). In addition, a missing fit
12 or perceived imbalance between the fans' image of a club and that of its sponsor might lead to
13 a perceived psychological imbalance and thus to negative emotional reactions (Mazodier &
14 Quester, 2014; Popp et al., 2016; Popp et al., 2018). Nevertheless, sponsorship is one of the
15 most powerful sources of revenues for clubs and sponsors consider OSMC as important
16 vehicles to communicate with (prospect) consumers (Delia & Armstrong, 2015; Meenaghan et
17 al., 2013). Thus, since clubs often do not have the option of not releasing sponsor-related
18 information, they should work closely with sponsors to develop online content exhibiting a
19 symbiotic relationship and thus ensuring a perceived psychological balance of the relationship
20 among fans. A clear fit between the two parties facilitates image transfer of the club to the
21 sponsor, leading to an improved attitude towards the sponsored products (Alonso-Dos-Santos
22 et al., 2018). Also, when exposed to sponsorship information, fans assess club and sponsor
23 schemas from memory and compare them to judge the appropriateness of the partnership
24 (Cornwell et al., 2005; Gwinner & Eaton, 1999). This means that the image of both sponsor
25 and sponsee can affect each other (Bauer et al., 2008; Kunkel & Biscaia, 2020). Thus, due to

1 the growing importance of online environments for sport properties (Filo et al., 2015; Kharouf
2 et al., in press), the current study's results further consolidate the idea that managers should
3 proactively communicate the fit between club and sponsor (Mazodier & Quester, 2014) through
4 OSMC to trigger a sense of perceived psychological balance. To this respect, storytelling can
5 contribute to resolve imbalanced states among fans (Cornwell et al., 2005). Also, as noted by
6 Uhrich, Koenigstorfer and Groeppel-Klein (2014), acting as a commercial sponsor and doing
7 good is not contradictory, meaning that CSR-linked sponsorship strategies promoted via
8 OSMC may add social meaning to the partnership and improve the evaluation of both parties.

9 The findings further suggest that fan reactions and perceived balance depend on the
10 temporal conditions of a post as well as on the medium used to convey the sponsor-related
11 content. Thus, we add to existent sponsorship literature that fans' perceived balance does not
12 only result from the actors involved in a sponsorship deal, but it is also subject to external
13 circumstances. Our results have shown that fans have the least amount of negative reactions to
14 sponsor-related posts on Saturdays (i.e. usually game day) and that clubs should place these
15 posts in the evening. This may be explained by the fact that fans are more emotionally involved
16 with their club around game days and the goodwill toward the club may be transferred to the
17 sponsors' brands or products (Biscaia et al., 2013; Madrigal, 2001). Moreover, posting after a
18 team win might be especially helpful in order to transfer fans' positive emotional reactions
19 from the team to the sponsor. Sponsors should capitalise on this goodwill spillover effect
20 through posts related to the game and by promoting co-creation activities to engage fans with
21 the club's online community, the sponsor, and associated products (Alonso-dos-Santos et al.,
22 2018; Santos et al., 2019). The exhibition of experiential marketing activities with fans on these
23 online platforms may also prove to be important given that it often boosts the persuasive power
24 of the sponsors (Fetchko, Roy, & Clow, 2018) and may add value to the overall fan experience
25 in the club's OSMC. Furthermore, it may help alleviate fan concerns about over-

1 commercialisation of sports (Kennedy & Kennedy, 2012; Uhrich et al., 2014). Rather than
2 ‘badging’ (i.e. linking the logo and image with the sport property), sponsors need to evolve to
3 ‘building’ (i.e. promoting brand engagement and relationships with fans) (Meenaghan et al.,
4 2013). Coca Cola’s ‘Aléntrometro’ campaign during the 2011 Copa America (Latin Spots,
5 2011) or Super Bock’s campaign to make fans’ dreams come true (Mirror, 2016) are good
6 examples of content that could be shared with fans on OSMC to trigger more positive reactions.

7 In addition, the results show that fans perceive sponsor-related videos more positively
8 than pictures or text. This is contrary to prior research on tourism (Kwok & Yu, 2013), which
9 may be related to the fact that fans are knowledgeable about their clubs, as opposed to tourists
10 surfing online to obtain reviews and suggestions about the next destination (Önder et al., 2019).
11 On the other hand, these findings suggest that formats enabling more complete forms of
12 communication (e.g. videos) have more impact than leaner formats (e.g. written text) (Kaplan
13 & Haenlein, 2010). Given that insincere marketing appeals often lead to consumer scepticism
14 (Gable & Impett, 2012), it is important for fans to understand not only how the club and sponsor
15 fit together based on the respective attributes, but also that the relationship is authentic (i.e.,
16 the extent to which the relationship is genuine; Charlton & Cornwell, 2019). Thus, the adoption
17 of the club’s colours (Henderson, Mazodier, & Sundar, 2018), association with the club’s
18 values and traditions, the social value of the partnership beyond the economic advantages
19 (Uhrich et al., 2014), and entertainment elements linking both parties could represent important
20 aspects to consider in sponsor-related videos. Given that perceptions of commercialization in
21 sponsorship agreements tend to generate negative reactions among fans and perceived fit is
22 often associated with positive responses (Cornwell & Kwon, 2019), sponsors and clubs need
23 to explicitly articulate the meaning of the relationship through OSMC to help fans create a link
24 between the existing schemas held with respect to both parties (Mazodier & Quester, 2014)
25 and show the authenticity of the sponsorship deal in the content of the posts.

1 In more general terms, the results of the current study also indicate that posts related to
2 pre-game information and player-related news generate more reactions than all other posts.
3 This is consistent with the idea that product-related attributes of a club lead to more fan
4 engagement in online platforms (e.g. Anagnostopoulos et al., 2018; Parganas et al., 2015) and
5 highlights the importance of developing an online strategy around the action on the fields and
6 those who directly contribute to that. It allows to extend previous empirical studies (e.g.
7 Anagnostopoulos et al., 2018; Santos et al., 2019) by providing a more nuanced understanding
8 of the type of product-related attributes that clubs should manage to boost reactions among
9 fans. As players are pivotal for a club's success and games represent the moment most fans
10 wait for, posts with updates about the upcoming games (e.g. ticketing, fan rituals, game-day
11 promotions, club and opponent statistics), showing players' commitment in training sessions,
12 or using key club personnel to promote the game and intended behaviours may likely favour
13 clubs and promote online fan engagement. Also, it may generate benefits outside the online
14 environment, given that previous studies have suggested fan engagement through OSMC
15 positively influences behavioural intentions towards the club in offline settings (Lim & Lee,
16 2015; Santos et al., 2019). Moreover, as the perceived prestige of the team and its players has
17 been shown to influence one's identification with the club (Gwinner & Swanson, 2003), the
18 findings from the current study may lead to a better understanding of how the content managed
19 via OSMC contributes to the development of identity benefits (Lock & Heere, 2017; Meng,
20 Stravos, & Westberg, 2015).

21

22

Conclusion

23

24

The current study examined how the content posted on a club's OSMCs affects fan reactions and whether there were more negative reactions to sponsor-related posts as opposed

1 to other contents. We found that posts containing sponsor-related content perform worst on
2 overall reactions and shares and second worst on the ratio of negative reactions.

3 We recommend releasing sponsor-related posts as video posts on Saturday evenings
4 (i.e. typically game day) to decrease the fraction of negative responses and simultaneously
5 maximise overall reactions. Moreover, while club fixed effects are the main drivers for the
6 variance within overall reactions and shares, the share of negative emotional responses is
7 strongly driven by the content, which explains 30% of the variance in angry reactions.
8 Therefore, clubs should select the content of their OSMC posts wisely in order to decrease
9 negative emotional reactions. Both clubs and sponsors should be aware of the potential
10 negative shift in reactions to sponsorship posts when using a club's OSMC to transmit sponsor-
11 related content. In order to select which sponsor content to post, clubs should consider their
12 target group and factor in that fans often perceive their favourite clubs as part of their identity
13 (Lock & Heere, 2017). Thus, clubs and sponsors should try to depict a good fit and an authentic
14 relationship to create perceived sense of balance among fans and thereby minimizing negative
15 spillover effects.

16 Despite the contributions of the current study, there are limitations that should be
17 acknowledged and considered in future research endeavours. First, despite all 18 clubs
18 examined in this study posted sponsorship-related posts, these posts only make up a small
19 fraction of all posts (61 out of 4,903), which might over- or underestimate the proposed effects
20 and effect strength.³ Another limitation is the fact that individuals often experience sports from
21 their own unique perspectives of the world, which means their perceptions of the sponsorship
22 fit may depend on that (Delia & Armstrong, 2015). In the current study, analysing the
23 comments to the posts did not seem expedient, given that a large amount of these comments

³ Although we considered the possibility to increase the data set in the aftermath, this was technically not possible due to a potential selection bias, a restriction of automatic data collection from Facebook after 2018 and impossible manual data collection due to a memory overload of the browser.

1 are links to friends or emojis. Only very few comments contain enough verbal text to give
2 deeper insights. For this reason, we used the quantitative data offered by Facebook, which
3 seems to be an adequate approximation of the actual comments, assuming that almost everyone
4 leaving an ‘angry’ comment should click the angry button, while not everybody clicking the
5 ‘angry’ button leaves a comment. Notwithstanding, future studies should still consider the
6 possibility to qualitatively investigate the content of the posts related to sponsors and the
7 reasons for such small amount of sponsorship postings to better understand how to manage
8 fan-club relationship via OSMC.

9 Moreover, while our results allow managers to understand how fans react to different
10 types of posts and provide them with results to develop managerial strategies, future studies
11 should extend the period of data collection to an entire season to better assess the in-season
12 effects. Second, our study focused only on German football clubs. Since the expression of anger
13 is modified across cultures to maintain social order (Matsumoto, Yoo, & Chung, 2010),
14 findings might differ in other cultures. Third, the existent literature is still scarce when it comes
15 to understanding the Facebook reaction options, which has only been available since 2015.
16 Thus, the interpretation of angry reactions by fans that we used in this study to proxy negative
17 emotional responses might be misinterpreted. Finally, future research may consider a more
18 precise segmentation of post-related contents. For instance, Dickenson and Souchon (2019)
19 have recently found that collective responsibility of sponsors can lead to a positive perception
20 of both sponsors and sponsees. Further research could develop field experiments to investigate
21 reactions to controlled content in order to derive more robust and causal interpretations.

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1 **Table 1.** Distribution of dependent variables.

	REACTIONS	SHARES	ANGRY	ANGRY RATIO
Percentiles				
1%	50	0	0	.00
5%	90	0	0	.00
10%	125	0	0	.00
25%	253	2	0	.00
50%	695	20	0	.00
75%	2,551	71	4	.00
90%	8,146	236	16	.03
95%	13,132	458	46	.09
99%	31,810	1,505	276	.30
<i>Min</i>	20	0	0	.00
<i>Max</i>	137,558	9,387	4,093	.56
<i>Mean</i>	2956.55	108.26	15.10	.02
<i>Variance</i>	47,200,0.00	136,386	12,084	.003
<i>Skewness</i>	7.10	11.62	2.97	5.10
<i>Kurtosis</i>	88.67	205.29	603.47	32.41
<i>Pearson test of overdispersion</i>	12800000**	1628405**	832676 **	345.3

2 *Note:* * $p < .05$, ** $p < .01$, robust estimations.

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1 **Table 2.** Descriptive Statistics of bivariate independent variables (N=4,603).

Variables	Observations	Mean
FEBRUARY		.48
WEEKDAY		
Monday	449	.10
Tuesday	529	.11
Wednesday	680	.15
Thursday	641	.14
Friday	749	.16
Saturday	1006	.22
Sunday	549	.12
TIME OF DAY		
Morning	484	.11
Midmorning	609	.13
Lunch	541	.12
Afternoon	1616	.35
Evening	1273	.28
Night	80	.02
POST CONTENT		
Advertising	160	.03
Event related	198	.04
Fan related	508	.11
Game defeat	302	.07
Game draw	238	.05
Game pre info	1110	.24
Game win	559	.12
Injuries	33	.01
Management related	192	.04
Other team related	121	.03
Player related	1019	.22
Sponsor related	61	.01
Raffle	102	.02
POST MEDIUM		
Live Video	114	.02
Picture	3269	.71
Text	95	.02
Title picture	133	.03
Video	992	.22

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1 **Table 3.** Correlation matrix.

	REACTIONS	SHARES	ANGRY	ANGRY RATIO	FEBRUARY	WEEKDAY
REACTIONS	-					
SHARES	.76	-				
ANGRY	.09	.06	-			
ANGRY RATIO	-.08	-.05	.40	-		
FEBRUARY	.01	.01	.04	.03	-	
WEEKDAY	.01	.00	.03	.12	.05	-
TIME OF DAY	.09	.07	.06	.11	.03	.06

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1 **Table 4.** Regression Results (N=4,603).

	(1) OLS FE REACTIONS	(2) OLS FE SHARES	(3) OLS FE ANGRY	(4) OLS FE ANGRY RATIO
FEBRUARY	16.705 (1.02)	2.405 (.25)	7.485 (2.52)*	-.001 (-.82)
WEEKDAY(Ref=Sunday)				
Monday	57.286 (.20)	23.433 (1.38)	2.283 (.38)	-.003 (-1.20)
Tuesday	-354.146 (-1.23)	26.888 (1.44)	9.182 (1.22)	-.002 (-.89)
Wednesday	739.294 (1.88)	69.873 (3.18)**	3.393 (.62)	-.002 (-.70)
Thursday	32.239 (.13)	24.165 (1.50)	8.732 (1.43)	.001 (.27)
Friday	-213.103 (-.86)	6.807 (.53)	6.058 (.97)	-.001 (-.26)
Saturday	482.873 (1.90)	31.571 (2.10)*	.973 (.13)	.000 (.05)
TIME OF DAY (Ref=Lunch)				
Morning	478.353 (2.04)*	21.776 (1.58)	-12.813 (-3.05)**	-.002 (-.80)
Midmorning	4.407 (.19)	-9.461 (-.80)	-11.309 (-2.82)**	-.003 (-1.81)
Afternoon	153.682 (.78)	4.819 (.43)	.625 (.13)	.000 (.01)
Evening	1042.184 (4.05)**	32.779 (2.10)*	-5.081 (-1.08)	.001 (.31)
Night	3812.961 (2.47)*	126.964 (2.01)*	-1.289 (-.95)	.003 (.56)
POST CONENT (Ref=Fan related)				
Advertising	-2809.122 (-6.43)**	-88.592 (-4.40)**	-14.010 (-2.62)**	.021 (6.52)**
Event related	-2267.536 (-5.52)**	-95.725 (-5.14)**	-1.969 (-2.40)*	-.003 (-1.80)
Game defeat	-1335.779 (-3.91)**	-63.488 (-3.50)**	111.514 (4.61)**	.111 (16.24)**
Game draw	-1225.165 (-3.04)**	-64.359 (-3.19)**	24.575 (3.17)**	.023 (5.11)**
Game pre info	-1094.260 (-3.35)**	-33.699 (-1.95)	-7.582 (-1.77)	-.004 (-2.55)*
Game win	3534.113 (6.27)**	178.819 (4.94)**	-13.394 (-3.02)**	-.006 (-3.85)**
Injuries	-454.986 (-.64)	-5.847 (-2.20)*	13.008 (1.45)	.016 (3.45)**
Management related	-62.040 (-1.91)	-48.318 (-2.59)**	-4.802 (-1.04)	.001 (.43)
Other team related	-1667.183 (-3.57)**	-44.118 (-.84)	-6.965 (-1.57)	-.000 (-.05)
Player related	-23.951 (-.07)	-62.899 (-3.47)**	-7.344 (-1.64)	-.004 (-2.79)**
Sponsor related	-3192.035 (-5.66)**	-114.780 (-5.17)**	-12.712 (-2.18)*	.038 (4.08)**
Raffle	-3091.675 (-6.25)**	-93.516 (-3.24)**	-17.074 (-3.27)**	-.003 (-1.86)
POST MEDIUM (Ref=Picture)				
Live Video	-1235.308 (-4.32)**	-38.400 (-2.08)*	4.870 (1.14)	.015 (4.23)**
Text	-1396.743 (-5.05)**	-44.878 (-3.70)**	-29.903 (-1.72)	.098 (7.74)**
Title picture	-81.828 (-.22)	-34.896 (-2.41)*	-5.394 (-1.97)*	-.003 (-2.13)*
Video	-1455.672 (-6.84)**	1.949 (.12)	-13.793 (-5.46)**	-.005 (-4.26)**
Constant	2488.085 (5.64)**	14.285 (4.28)**	4.525 (.51)	.010 (2.59)**
Adjusted R ²	.378	.163	.086	.478

2 *Note:* *t* statistics in parentheses * $p < .05$, ** $p < .01$, robust estimations.

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1 **Table 5.** General dominance statistics.

	%R2 OLS FE REACTIONS	%R2 OLS FE SHARES	%R2 OLS FE ANGRY	%R2 OLS FE ANGRY RATIO
FEBRUARY	.00 (.00)	.00 (.00)	.00 (.01)	.00 (.00)
WEEKDAY	.00 (.01)	.00 (.02)	.00 (.00)	.01 (.02)
TIME OF DAY	.02 (.05)	.01 (.04)	.00 (.02)	.01 (.01)
POST CONENT	.07 (.19)	.05 (.31)	.06 (.67)	.32 (.67)
POST MEDIUM	.01 (.01)	.00 (.01)	.00 (.04)	.13 (.27)
CLUB FE	.28 (.73)	.10 (.61)	.02 (.25)	.02 (.03)
SUM (R ² adjusted)	.378	.163	.086	.478

2 *Note:* Relative contribution in parentheses.

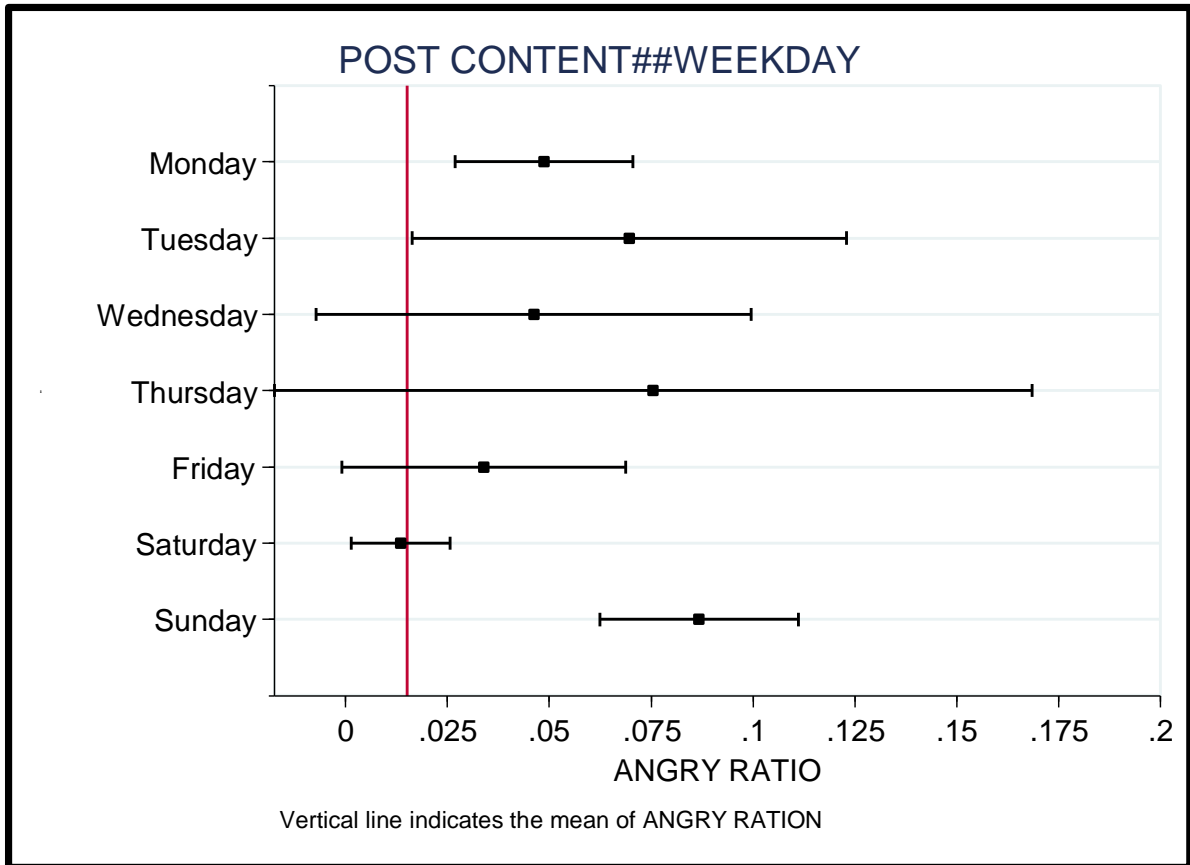
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1 **Table 6.** Negative Binominal Regression (NBR) and Poisson Regression Results (N=4,603).

	(5) NBR FE REACTIONS	(6) NBR FE SHARES	(7) NBR FE ANGRY	(8) Poisson FE ANGRY RATIO
FEBRUARY	493.384 (5.31)**	24.768 (3.66)**	2.658 (1.38)	.001 (.65)
WEEKDAY(Ref=Sunday)				
Monday	-408.368 (-2.16)*	-12.177 (-1.05)	-4.834 (-1.21)	-.005 (-2.13)*
Tuesday	-687.992 (-3.94)**	-19.228 (-1.80)	-3.434 (-.98)	-.005 (-2.44)*
Wednesday	-375.503 (-2.01)*	4.052 (.32)	-7.376 (-2.36)*	-.003 (-1.36)
Thursday	-463.698 (-2.33)*	.900 (.06)	8.455 (1.38)	-.001 (-.54)
Friday	-493.358 (-2.69)**	-16.180 (-1.52)	3.731 (.74)	-.002 (-1.08)
Saturday	211.657 (1.30)	18.321 (1.72)	-2.339 (-.79)	-.001 (-.56)
TIME OF DAY (Ref=Lunch)				
Morning	782.672 (4.15)**	32.109 (2.21)*	-21.030 (-3.19)**	-.003 (-.79)
Midmorning	87.405 (.56)	-22.174 (-1.92)	-19.973 (-3.07)**	-.005 (-1.45)
Afternoon	41.852 (.28)	-4.804 (-.40)	-7.499 (-1.10)	-.000 (-.13)
Evening	696.812 (4.43)**	19.798 (1.58)	-11.133 (-1.68)	.001 (.19)
Night	2272.784 (4.80)**	71.886 (2.33)*	-4.085 (-.39)	.001 (.19)
POST CONENT (Ref=Fan related)				
Advertising	-2111.927 (-11.51)**	-107.765 (-7.90)**	24.406 (3.55)**	.026 (5.85)**
Event related	-1915.939 (-9.88)**	-104.902 (-7.61)**	-8.181 (-3.38)**	-.004 (-2.12)*
Game defeat	-1849.181 (-1.36)**	-1.854 (-7.13)**	214.170 (5.34)**	.094 (11.47)**
Game draw	-1176.609 (-5.71)**	-77.893 (-5.09)**	47.351 (3.61)**	.024 (5.73)**
Game pre info	-1107.994 (-6.52)**	-54.228 (-4.03)**	-4.245 (-1.90)	-.002 (-1.52)
Game win	2736.696 (9.18)**	133.866 (5.32)**	-3.299 (-1.41)	-.005 (-2.93)**
Injuries	-608.602 (-1.90)	-7.028 (-4.05)**	76.968 (1.91)	.015 (3.19)**
Management related	-321.081 (-1.04)	-39.249 (-1.78)	-4.299 (-1.60)	.002 (.76)
Other team related	-1686.360 (-7.76)**	-96.702 (-5.85)**	-8.270 (-3.40)**	-.001 (-.16)
Player related	254.464 (1.27)	-69.207 (-5.05)**	-4.335 (-1.95)	-.004 (-2.50)*
Sponsor related	-2112.461 (-9.61)**	-115.692 (-8.13)**	29.553 (2.83)**	.048 (3.82)**
Raffle	-1902.409 (-5.73)**	-69.455 (-2.33)*	-9.207 (-3.61)**	-.005 (-3.15)**
POST MEDIUM (Ref=Picture)				
Live Video	-548.429 (-2.70)**	6.112 (.36)	76.321 (3.75)**	.040 (2.77)**
Text	-1849.869 (-12.76)**	-84.149 (-12.23)**	-1.906 (-.68)	.018 (5.88)**
Title picture	114.204 (.53)	-31.992 (-3.42)**	-9.114 (-2.72)**	-.011 (-7.15)**
Video	-839.482 (-7.78)**	47.337 (4.25)**	-1.883 (-5.82)**	-.006 (-5.87)**
Pseudo R2	.09	.08	.11	.30

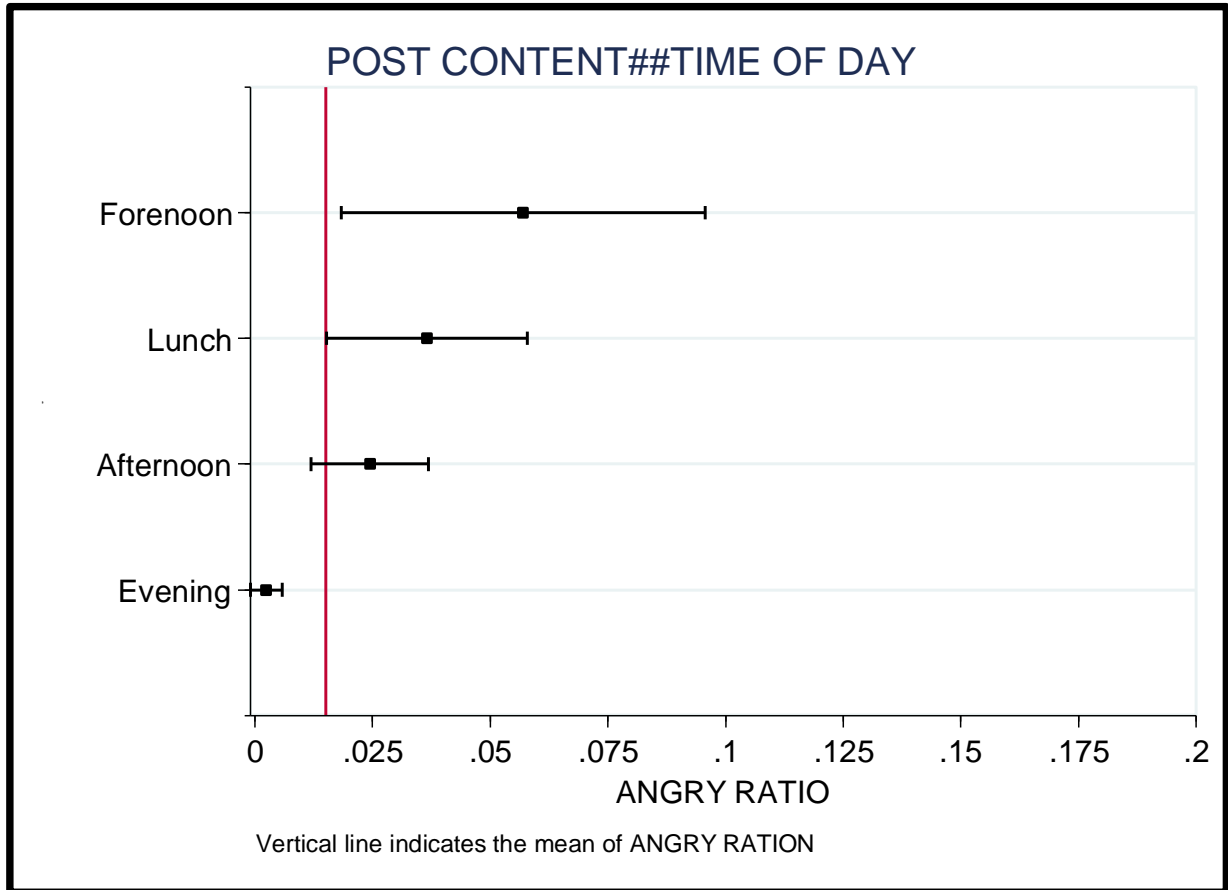
2 Note: *t* statistics in parentheses * $p < .05$, ** $p < .01$, robust estimations, average marginal effects are reported.

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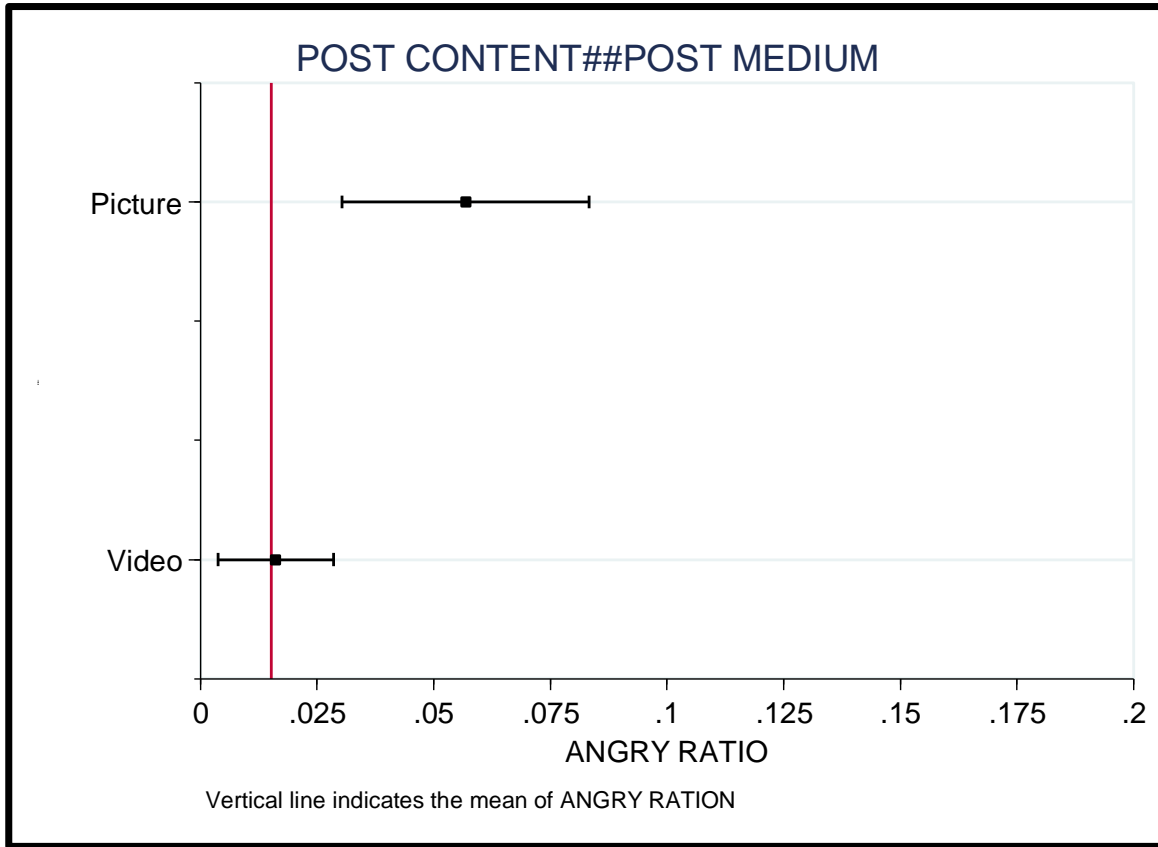


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Figure 1. Interaction of sponsor post and weekday (Model 8 Poisson).



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2 **Figure 2.** Interaction of sponsor post and Time of day (Model 8 Poisson).
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Figure 3. Interaction of sponsor post and POST MEDIUM (Model 8 Poisson).