

# Inputs and Outputs: The Link Between Social Media Posts and Asset Recall in Sports Sponsorship

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# Executive Summary

The relationship between paid and earned social media posts in which a brand appears and fans' recall of the brand in the posts is statistically and practically significant. Accounting for sponsor category, contract length, and title partner status, **increasing social posts by 10% is associated with a 1.52% increase in recall** of the sponsor's social media posts. For example, a business manager who increases sponsorship social media posts from 5 to 25 per season could expect recall of their social media to rise by approximately 28%.

## Background

Worldwide, sports sponsorships generate over 105 billion dollars in revenue and are projected to reach nearly 190 billion dollars by 2030 (Statista 2025). Team sponsorship revenue is over 2.5 billion dollars in the NFL and over 1.5 billion dollars for the NBA and MLB clubs (Statista 2025). Increasing sponsorship revenue drives demand for robust measurement tools that evaluate effectiveness. Teams aim to sustain and expand sponsorship revenue while brands seek to quantify the return on investment, fueling measurement demand.

In response, an increasing number of firms quantify and track the inputs and outputs of sponsorship. For media inputs, firms like Trajektory incorporate AI-powered media intelligence to track TV-visible signage, brand exposure, and social media content to identify logos, mentions, and brand content on social media platforms (Meta, X, TikTok). Media values are then assigned to the amount of time on screen given the clarity of the sponsor logos or for the number of social posts in which the sponsor's brand appears. For sponsorship outputs, Wakefield tracks fan recall of the media assets from a representative sample of each team's database.

Together, the measured inputs and outputs reflect the distinct components of the sponsorship communication model (Figure 1).

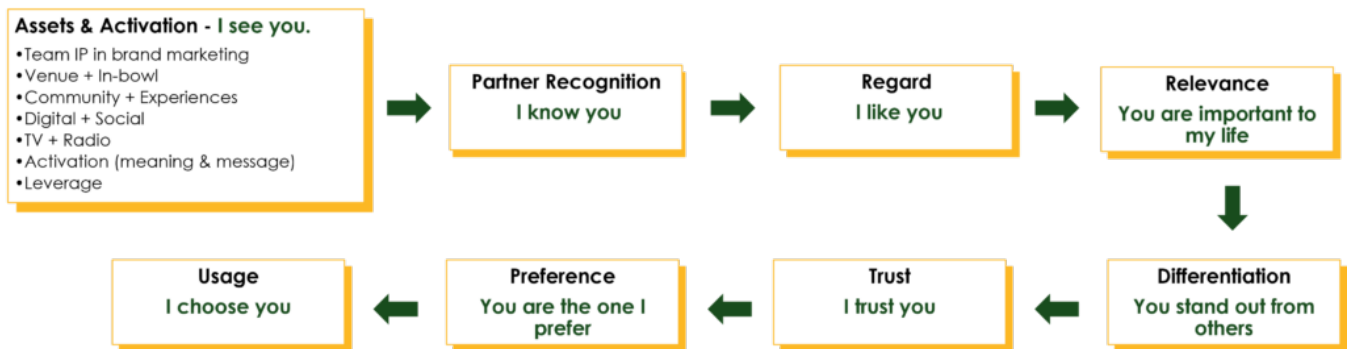


Figure 1: How fans see sponsorships.

As shown in Figure 1, sponsors contract with properties for the right to use assets in sponsorship activation to drive sponsor recognition. These assets, along with factors such as category exclusivity, contract length, and other contextual variables, enhance a sponsor's visibility and recall. Once fans recognize a sponsor, measurable lift can be observed across key brand attributes including regard, relevance, differentiation, trust, preference, and ultimately usage.<sup>1</sup>

<sup>1</sup>See original research using these factors: Mizik, N., & Jacobson, R. (2008). The financial value impact of perceptual brand attributes. Journal of Marketing Research, 45(1), 15–32. <https://doi.org/10.1509/jmkr.45.1.015>. Datta, H., Ailawadi, K. L., & van Heerde, H. J. (2017). How well does consumer-based brand equity align with sales-based

One key challenge in measuring sponsorship effectiveness is connecting the effect of inputs on the outputs. Measuring media exposure is important to provide evidence of reach. Exposure is one thing. Recall is quite another as fans' selective perception may ignore, distort or not remember the brand in cluttered sponsorship and media spaces.

The question is: How can sponsors link exposure metrics to consumer outcomes, such as recall, brand lifts, and value-driving behaviors, to optimize investments amid activation clutter?

We focus on social media in this analysis. The social post count data collected and aggregated by Trajectory serves as the primary independent variable of interest.

To measure the remaining elements of the sponsorship communication model, Wakefield follows a scientific approach to survey fans, including representative sampling of all fans, unbiased questionnaire design, and appropriate inferential analysis. The present analysis draws on sponsor information and social recall data from Wakefield's database, which includes over 2,600 sponsorship studies and millions of fan responses. In this study, social recall serves as the dependent variable.

Through a partnership between Wakefield and Trajektory, this paper combines input data collected by Trajektory with outcome data collected by Wakefield to **analyze the relationship between social post activity and sponsor recognition**. The goal of this analysis is to contribute to the growing knowledge base in sponsorship measurement.

## Data Structure

Table 1 presents a sample illustration of the data structure used in the analysis. The full dataset consists of **402** sponsorship observations collected between 2022 and 2024. Each observation represents a unique combination of year, team, and sponsor. In total, the data include **26** team properties and **217** distinct brands.

Social post count (provided by Trajektory) refers to the number of posts capturing the team and sponsor during a given year, while social recall (provided by Wakefield) represents the percentage of respondents who recalled the sponsor's use of a team's social media asset within that year.

Table 1: Example of data structure

year	team	partner	category	contract_length	title_partner	social_post_count	social_recall
2025	Montreal Expos	Tim Hortons	Food Services	4	Yes	150	32.1%
2024	Arizona Coyotes	McDonald's	Food Services	9	No	210	45.3%
2025	Seattle Supersonics	Kroger	Grocery	1	No	95	11.3%
2024	Houston Oilers	Ford	Auto	8	Yes	130	18.1%
2024	Tampa Bay Mutiny	State Farm	Insurance	3	No	160	22.4%

Note: Social recall is the outcome variable of interest provided by Wakefield. Social post count is the primary indepdent variable of interest provided by Trajektory.

Source: Wakefield & Trajektory

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brand equity and marketing-mix response?\*. Journal of Marketing, 81(3), 1–20. <https://doi.org/10.1509/jm.15.0340>  
 Stahl, F., Heitmann, M., Lehmann, D. R., & Neslin, S. A. (2012). The impact of brand equity on customer acquisition, retention, and profit margin.Journal of Marketing, 76(4), 36–52. <https://doi.org/10.1509/jm.10.0522>

## Exploratory Data Analysis

Univariate and bivariate plots are produced to provide an initial understanding of the dataset.

### Response Variable: Social Recall

The primary response variable of interest is social recall. The distribution of social recall values is right-skewed (Figure 2a). When plotted on a log10 scale the data exhibit a more normal distribution (Figure 2b). Accordingly, this variable will be log10 transformed prior to modeling.

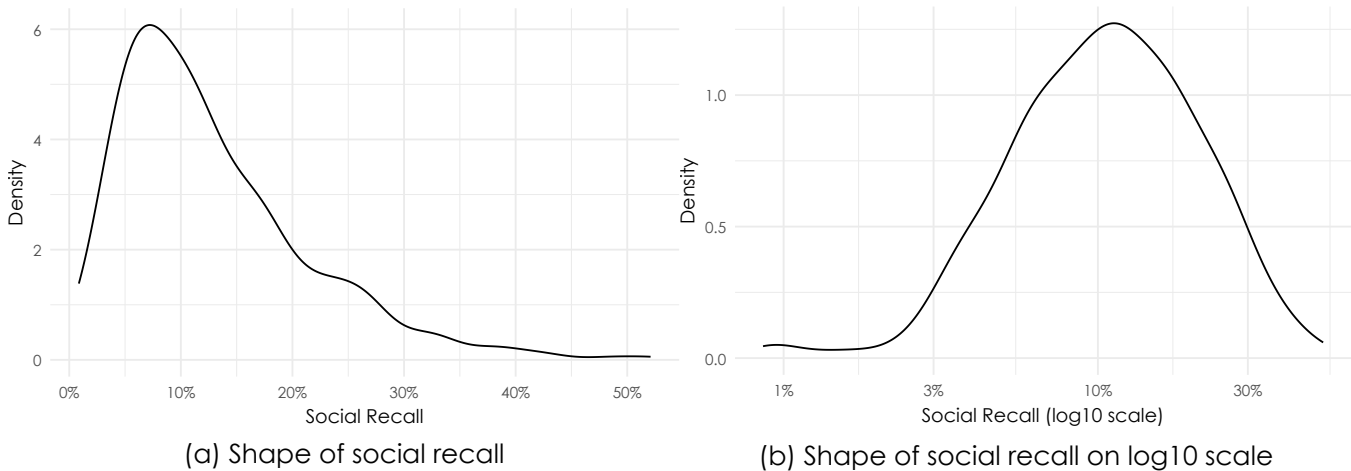


Figure 2: Social Recall descriptives plots

### Predictor: Social Post Count

The number of social posts is also right-skewed (Figure 3a). Plotting on a log10 scale transforms the data closer to a normal distribution (Figure 3b). A positive linear relationship exists between social post count and social recall (Figure 3c). The relationship becomes more apparent when the variables are plotted on log10 scales (Figure 3d).

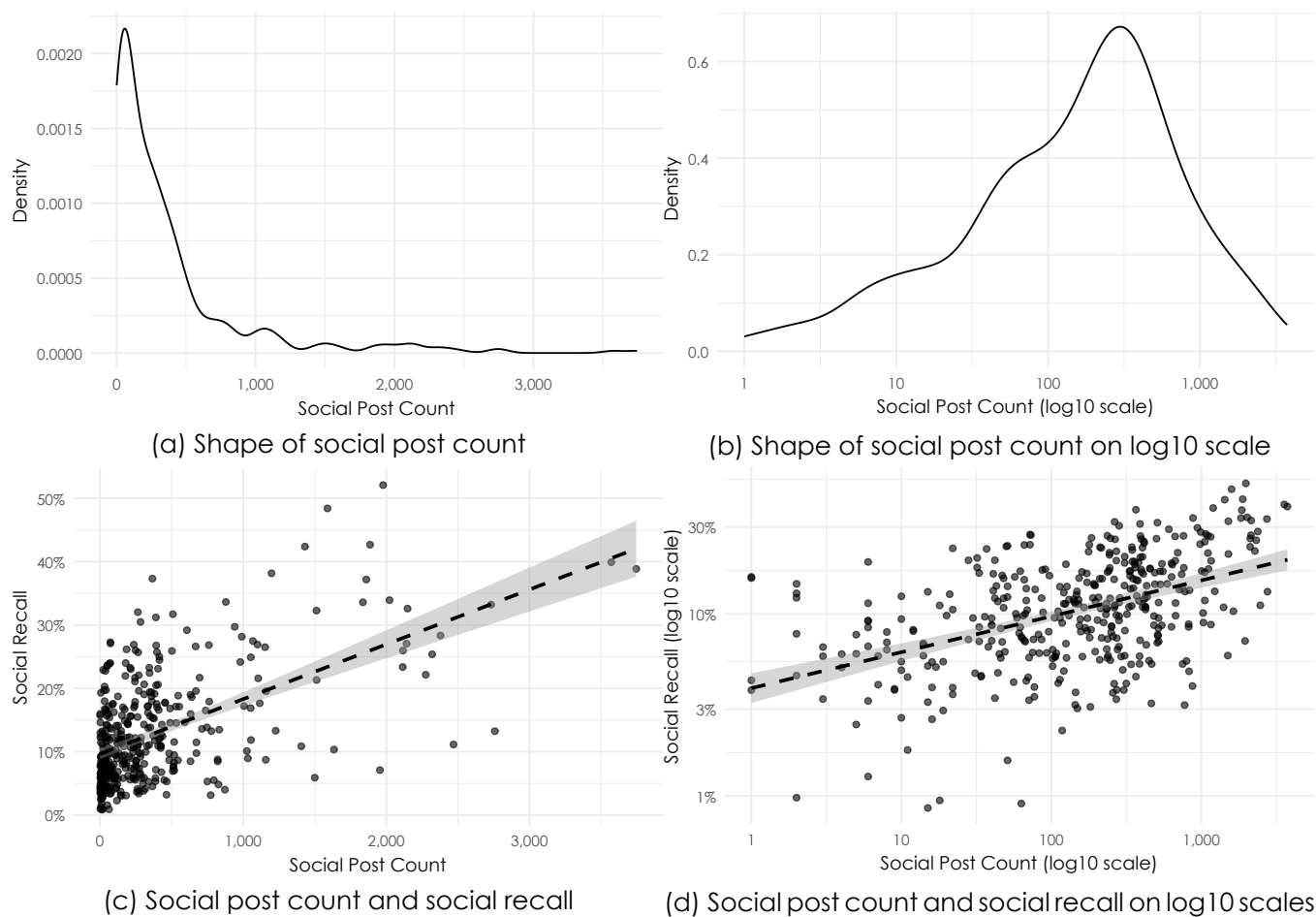


Figure 3: Social post count descriptives plots

## Predictor: Contract Length

Contract length represents the duration of the sponsorship in years. This variable is right-skewed because every sponsorship begins in year 1 and many measured partnerships are in the first three years of the sponsorship (Figure 4a). Contract length also includes a few outliers with extremely long durations (80+ years). When plotted on a log10 scale, the distribution becomes more normal (Figure 4b). The relationship between contract length and social recall appears to be positive and slightly linear (Figure 4c). When both variables are plotted on log10 scales, the relationship becomes more clearly linear (Figure 4d).

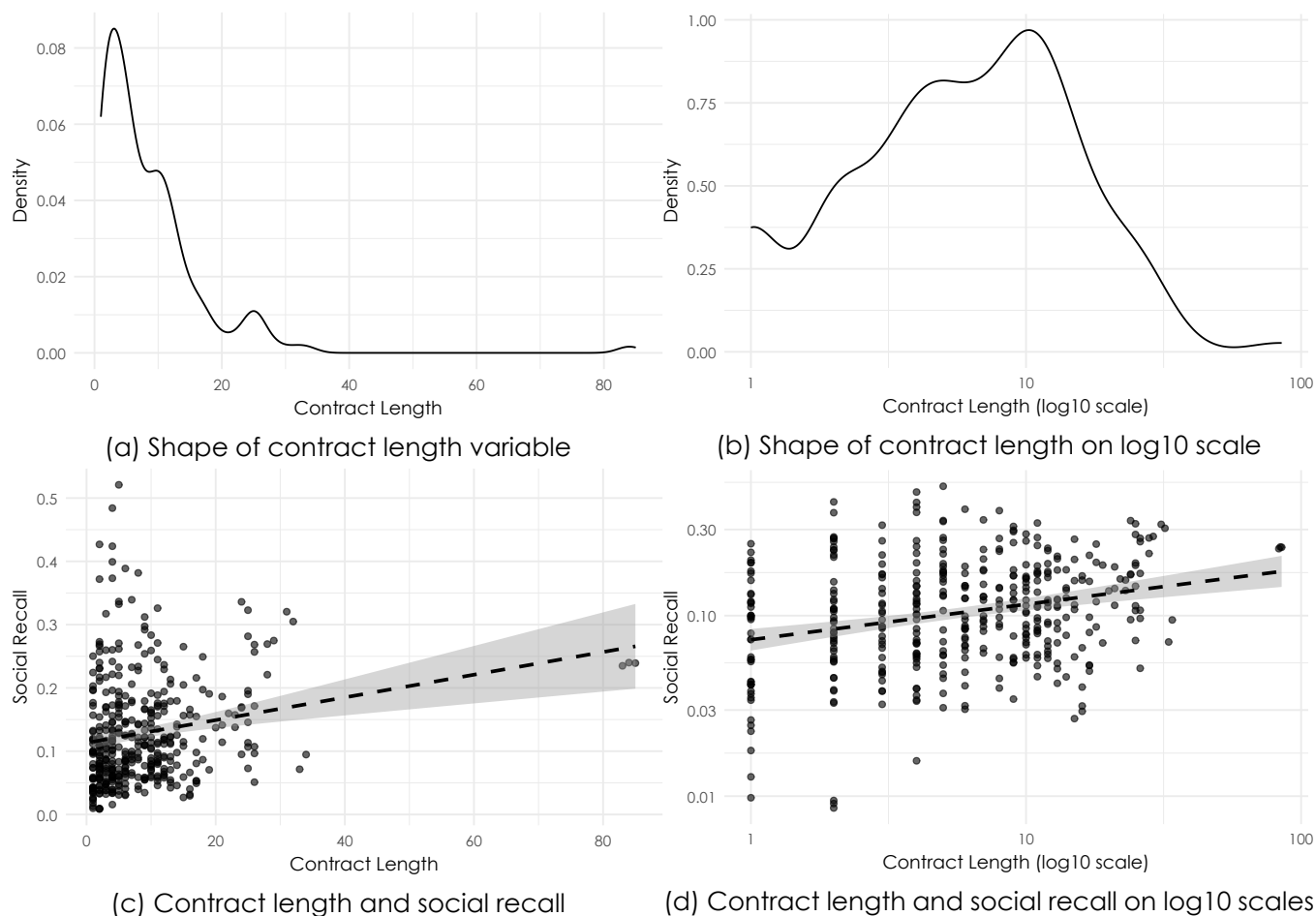


Figure 4: Contract Length descriptives plots

### Predictor (Categorical): Category and Title Partner

The dataset includes two relevant predictors: category and title partner. Category describes the type of product or service offered by the sponsor brand. Title partner indicates sponsorships that include entitlement elements (viz., stadium, training facility, jersey patch or helmet logo). Social recall varies by category with average social recall of 9.3% but ranging as high as 18.8% for sponsors in the retail category (Figure 5a). Social recall of title partners (23.5%) is over twice as high as those sponsorships without entitlement deals (11.0%; Figure 5b).

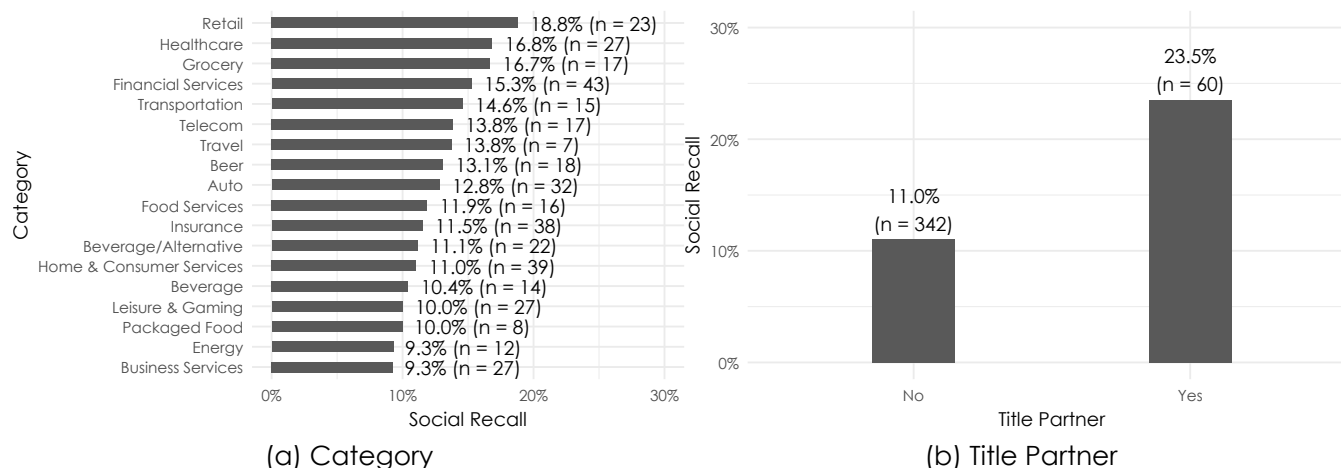


Figure 5: Categorical descriptives plots

## Model Construction

To assess the impact of social post count on social recall while accounting for potential confounding variables, a log-log linear regression model was used. As shown in Figure 2, social recall was right-skewed and therefore log10 transformed prior to modeling. Similarly, the covariates social post count and contract length were also right-skewed and log10 transformed.

For the categorical predictors, reference levels were set as follows: “No” for title partner and “Insurance” for category. Insurance was selected as the baseline because it had the largest number of observations and represents a traditional sponsorship category.

Other social media metrics including engagements per post have been analyzed and show little relationship with recall. Rather, it is merely the volume of posts that influence outcomes.

All variables showed significant relationships with log10(social recall) and were retained in the model. The final model, with log10(social recall) as the outcome variable, included the covariates log10(social post count), log10(contract length), title partner, and category. The next section presents the model results, assumptions, and key takeaways.

## Results

The final log-log linear regression model including log10(social post count), log10(contract length), title partner, and category demonstrates strong overall significance ( $p < 0.001$ ) and explains 40.4% ( $R^2$ ) of the variance in log10(social recall). Most variables, with the exception of certain category levels, are statistically significant in a positive direction. This means that an increase in the variable, either quantitatively or relative to the reference level, corresponds to a positive increase in log10(social recall). The adjusted  $R^2$ , often used to assess overfitting, showed a minimal decrease to 37.3%.

Table 2: Model Output

term	estimate	std_error	statistic	p_value	conf_low	conf_high
(Intercept)	-1.584	0.061	-26.083	0.000	-1.704	-1.465
Contract Length*	0.146	0.031	4.671	0.000	0.084	0.207
Social Posts*	0.152	0.020	7.764	0.000	0.113	0.190
Title Partner: Yes	0.244	0.040	6.119	0.000	0.166	0.322
Category: Auto	0.142	0.058	2.437	0.015	0.027	0.257
Category: Beer	0.148	0.069	2.135	0.033	0.012	0.284
Category: Beverage	0.133	0.076	1.745	0.082	-0.017	0.283
Category: Beverage Alternative	0.246	0.066	3.744	0.000	0.117	0.375
Category: Business Services	-0.028	0.061	-0.458	0.647	-0.148	0.092
Category: Energy	0.130	0.080	1.625	0.105	-0.027	0.287
Category: Financial Services	0.112	0.054	2.084	0.038	0.006	0.217
Category: Food Services	0.235	0.072	3.250	0.001	0.093	0.376
Category: Grocery	0.252	0.070	3.585	0.000	0.114	0.390
Category: Healthcare	0.191	0.060	3.176	0.002	0.073	0.310
Category: Home Consumer Services	0.023	0.055	0.427	0.670	-0.085	0.132
Category: Leisure Gaming	0.102	0.062	1.629	0.104	-0.021	0.224
Category: Packaged Food	0.160	0.094	1.697	0.091	-0.025	0.346
Category: Retail	0.202	0.064	3.157	0.002	0.076	0.329
Category: Telecom	0.183	0.071	2.587	0.010	0.044	0.322
Category: Transportation	0.197	0.073	2.686	0.008	0.053	0.341
Category: Travel	0.307	0.100	3.068	0.002	0.110	0.503

- Dependent Variable: log10(Social Recall)
- Variables with \* have been log10 transformed
- **R<sup>2</sup> = 0.404** | Highlight represents statistical significance at 0.05

Source: Wakefield

## Assumptions

Model assumptions were evaluated before interpreting the results. Figure 6 examines linearity and normality. Plot (a) indicates that the linearity assumption is reasonable, while plot (b) suggests that the residuals are approximately normally distributed.

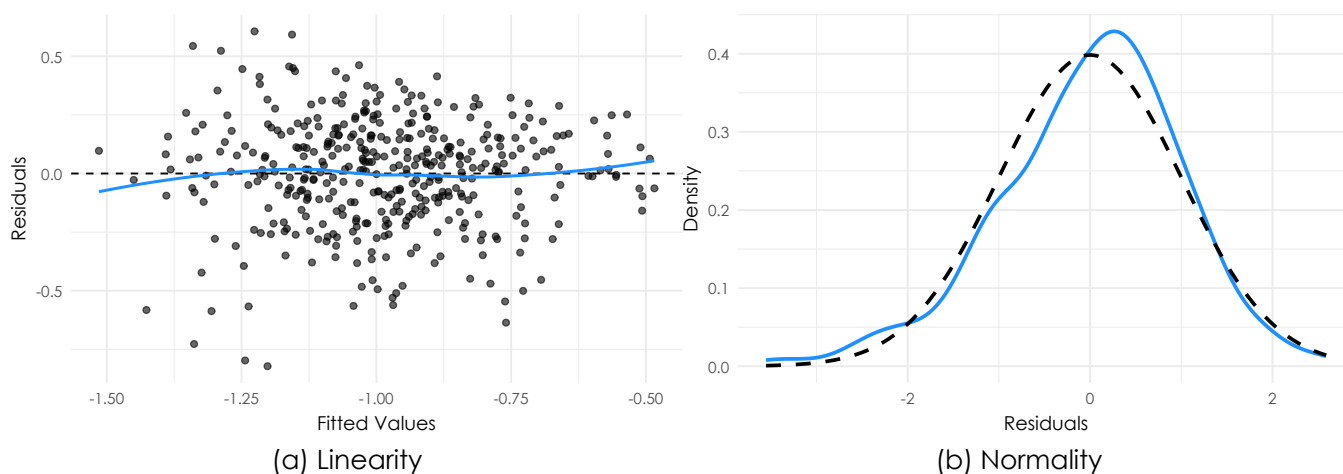


Figure 6: Assumptions: Linearity and Normality

Figure 7 evaluates equal variance and influential observations. Plot (a) does not show a strong



funnel shape, indicating acceptable homoscedasticity. Plot (b) reveals no influential observations that would disproportionately affect the model.

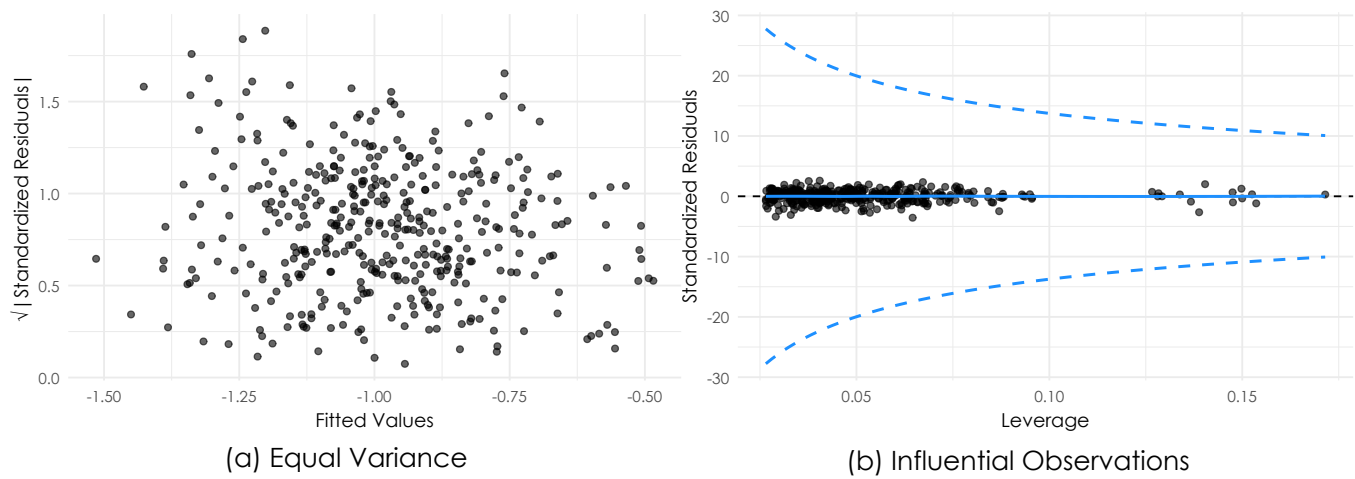
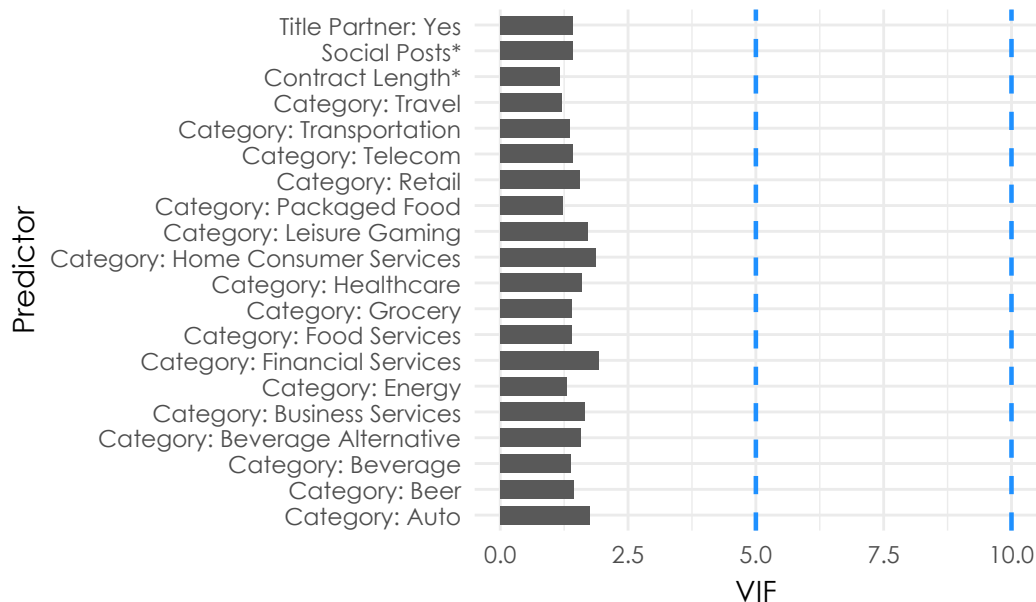


Figure 7: Assumptions: Equal Variance and Outliers

Finally, Figure 8 presents a Variance Inflation Factor (VIF) analysis to assess multicollinearity. No variables exceeded concern thresholds, indicating that multicollinearity is not an issue.



Note: \* have been log10 transformed

(a) VIF Plot

Figure 8: Assumptions: Multicollinearity

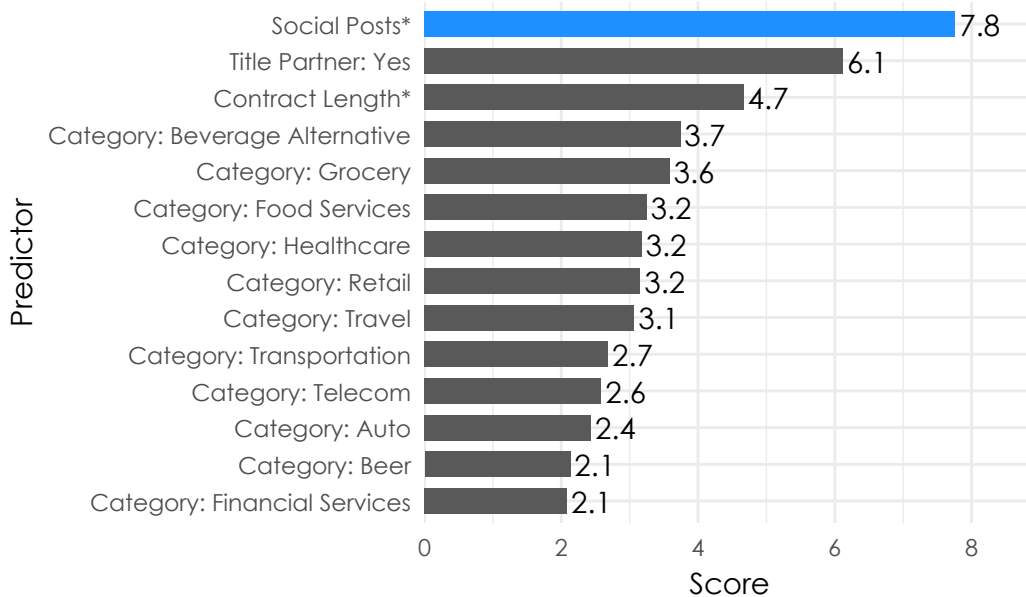
## Takeaways

Table 2 highlights that  $\log_{10}(\text{social post count})$ ,  $\log_{10}(\text{contract length})$ , title partner, and several categories (auto, beer, beverage alternative, financial services, food services, grocery, healthcare, retail, telecom, transportation, and travel) are statistically significant predictors of  $\log_{10}(\text{social recall})$ .

Sample Interpretations:

- A 1% increase in social posts  $\rightarrow$  0.152% increase in social recall adjusting for category, contract length, and title partner.
- A 10% increase in social posts  $\rightarrow$  1.52% increase in social recall adjusting for category, contract length, and title partner.
- Increasing social posts from 5 posts per season to 25 posts per season would result in approximately 28% higher recall of social media assets.<sup>2</sup>

Beyond individual estimates, variable importance analysis provides perspective on the relative impact of predictors. Figure 9 ranks predictors by the absolute value of their test statistics. Social post count, title partner status, and contract length have the largest influence on social recall. Social post count, the primary variable of interest, ranks first among 14 significant predictors, contributing approximately 15% of total variable importance.



Note: \* have been  $\log_{10}$  transformed

Figure 9: Variable Importance

<sup>2</sup>Based on the log-log model coefficient for social posts ( $\beta = 0.152$ ). A 5 $\times$  increase in posts is  $\log_{10}(25/5) = 0.699$ . Predicted change in recall is  $10^{(0.152 \times 0.699)} - 1 \approx 0.28$ , or a **28% increase**.

## Conclusion

Inputs do explain outputs. A strong positive relationship exists between the number of social posts of a sponsor in a given season and recognition of that sponsor. When controlling for title partner status, contract length, and sponsor category, the volume of social post activity emerges as the primary driver of sponsor recall through property social assets.

Based on this analysis, business managers could anticipate that increasing paid and earned social posts by 10% would lead to an estimated 1.52% increase in social recall, holding all else equal. This insight enables better benchmarking and optimization of sponsorship activation strategies. Increasing partner recognition ultimately enhances brand equity among fans and drives improvements across key brand metrics of purchase intent and brand usage.

Our future research reports will explore the relationship between the amount of broadcast or streaming time on screen and logo clarity and fan recall of the sponsor.