

Online Appendices for the paper:
**How Live Twitter Commentaries by Professional Sports Clubs Can
Reveal Intergroup Dynamics**

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Online Appendix A: Descriptive Statistics per Club

Table A1

Volume hypothesis: Descriptive information for tweet volume variables of the teams involved in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	W	D	L	Pts	GD	Tweet volume	Tweets per Win	Tweets per Draw	Tweets per Loss
1	Ajax	25	18	2	5	56	45	587	25.33 (4.12)	26.00 (2.83)	15.80 (4.32)
2	AZ	25	18	2	5	56	37	594	24.67 (4.47)	22.50 (3.54)	21.00 (6.00)
3	Feyenoord	25	14	8	3	50	15	594	26.21 (4.14)	22.62 (2.72)	15.33 (4.62)
4	PSV	26	14	7	5	49	26	441	17.86 (2.25)	16.57 (1.27)	15.00 (3.00)
5	Willem II	26	13	5	8	44	3	1,288	50.62 (8.60)	54.00 (2.83)	45.00 (6.19)
6	FC Utrecht	25	12	5	8	41	16	863	33.75 (4.35)	34.80 (3.83)	35.50 (7.31)
7	Vitesse	26	12	5	9	41	10	798	30.67 (4.94)	34.00 (5.70)	28.89 (3.14)
8	Heracles Almelo	26	10	6	10	36	6	777	33.40 (7.00)	26.83 (5.53)	28.20 (8.32)
9	FC Groningen	26	10	5	11	35	1	697	29.00 (4.03)	25.20 (3.27)	25.55 (4.44)
10	SC Heerenveen	26	8	9	9	33	0	800	31.00 (1.85)	30.56 (4.53)	30.78 (4.06)
11	Sparta Rotterdam	26	9	6	11	33	-4	791	32.89 (4.04)	32.33 (5.68)	27.36 (4.65)
12	FC Emmen	26	9	5	12	32	-13	795	32.11 (4.08)	29.60 (6.80)	29.83 (3.38)
13	VVV-Venlo	26	8	4	14	28	-27	1,030	44.12 (9.69)	43.50 (6.03)	35.93 (6.04)
14	FC Twente	26	7	6	13	27	-12	690	25.71 (4.35)	23.83 (5.34)	28.23 (7.44)
15	PEC Zwolle	26	7	5	14	26	-18	778	35.29 (4.79)	29.80 (5.26)	27.29 (4.73)
16	Fortuna Sittard	26	6	8	12	26	-23	805	31.83 (4.67)	27.50 (2.88)	32.83 (6.32)
17	ADO Den Haag	26	4	7	15	19	-29	572	24.75 (8.34)	20.86 (4.41)	21.80 (3.90)
18	RKC Waalwijk	26	4	3	19	15	-33	889	37.50 (2.08)	35.00 (4.58)	33.37 (5.07)

Note: Pos = Position in the Eredivisie, P = Number of games played, W = Number of games that ended in a win, D = Number of games that ended in a draw, L = Number of games that ended in a loss, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). The Tweet Volume column indicates the total number of game tweets posted per club over the 2019/20 season. The “Tweets per” columns represent the mean number of tweets (and SD) per game outcome.

Table A2

Descriptive information for specific types of positive and negative events of the teams involved in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GF	GA	GD	Shots	Yellow Cards	Red Cards	Fouls	Offside
1	Ajax	25	56	68	23	45	21.84 (5.86)	1.28 (1.14)	0 (0)	9.80 (3.51)	1.84 (1.55)
2	AZ	25	56	54	17	37	15.32 (5.84)	1.28 (1.24)	0.08 (0.28)	10.72 (3.20)	1.72 (1.21)
3	Feyenoord	25	50	50	35	15	14.80 (5.02)	1.52 (1.16)	0 (0)	10.84 (2.75)	1.68 (1.31)
4	PSV	26	49	54	28	26	16.15 (6.66)	1.42 (1.84)	0.15 (0.46)	9.58 (2.96)	1.73 (1.51)
5	Willem II	26	44	37	34	3	11.38 (4.76)	1.50 (1.36)	0 (0)	10.38 (3.85)	1.58 (0.99)
6	FC Utrecht	25	41	50	34	16	14.56 (3.91)	1.24 (1.20)	0.12 (0.33)	10.48 (3.87)	1.88 (1.42)
7	Vitesse	26	41	45	35	10	16.00 (4.77)	1.85 (1.22)	0.08 (0.27)	11.92 (3.98)	1.73 (1.61)
8	Heracles Almelo	26	36	40	34	6	13.35 (4.74)	1.73 (1.08)	0.04 (0.20)	12.19 (3.36)	1.77 (1.31)
9	FC Groningen	26	35	27	26	1	12.54 (3.82)	1.73 (1.12)	0.15 (0.46)	10.54 (3.17)	1.27 (1.15)
10	SC Heerenveen	26	33	41	41	0	16.73 (7.03)	1.04 (0.87)	0 (0)	10.00 (2.80)	1.23 (1.24)
11	Sparta Rotterdam	26	33	41	45	-4	13.54 (4.25)	1.81 (1.17)	0.12 (0.33)	13.35 (4.50)	1.12 (1.14)
12	FC Emmen	26	32	32	45	-13	12.50 (5.20)	2.04 (1.18)	0.15 (0.37)	12.35 (3.95)	1.58 (1.45)
13	VVV-Venlo	26	28	24	51	-27	10.04 (3.80)	1.65 (1.02)	0.08 (0.27)	11.23 (3.15)	1.12 (1.18)
14	FC Twente	26	27	34	46	-12	9.92 (3.57)	1.69 (1.19)	0.15 (0.37)	12.42 (3.78)	1.69 (1.29)
15	PEC Zwolle	26	26	37	55	-18	12.65 (4.27)	1.69 (1.09)	0.08 (0.27)	11.81 (4.04)	1.96 (1.73)
16	Fortuna Sittard	26	26	29	52	-23	11.23 (5.17)	1.92 (1.13)	0.15 (0.37)	10.12 (2.76)	1.85 (1.52)
17	ADO Den Haag	26	19	25	54	-29	9.31 (4.32)	2.08 (1.44)	0.15 (0.37)	11.08 (3.91)	1.27 (1.12)
18	RKC Waalwijk	26	15	27	60	-33	12.27 (3.41)	2.19 (1.30)	0.19 (0.40)	12.08 (3.54)	1.12 (1.07)

Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GF = Number of goals scored, GA = Number of goals conceded, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). The columns ‘Shots’, ‘Yellow Cards’, ‘Red Cards’, ‘Fouls’ and ‘Offside’ represent the mean (and SD) per game. The number of shots represent positive events. The number of fouls and offsides represent negative events.

Table A3

Balance hypothesis: Descriptive information for the proportion of tweets with different types of events for teams involved in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GD	Positive		Negative	
					Ingroup Events	Outgroup Events	Ingroup Events	Outgroup Events
1	Ajax	25	56	45	0.40 (0.12)	0.09 (0.09)	0.04 (0.05)	0.04 (0.05)
2	AZ	25	56	37	0.46 (0.17)	0.17 (0.11)	0.02 (0.03)	0.03 (0.04)
3	Feyenoord	25	50	15	0.34 (0.11)	0.13 (0.09)	0.07 (0.05)	0.06 (0.05)
4	PSV	26	49	26	0.45 (0.18)	0.15 (0.09)	0.02 (0.04)	0.02 (0.03)
5	Willem II	26	44	3	0.23 (0.09)	0.21 (0.06)	0.06 (0.04)	0.06 (0.03)
6	FC Utrecht	25	41	16	0.31 (0.10)	0.15 (0.07)	0.05 (0.04)	0.07 (0.04)
7	Vitesse	26	41	10	0.31 (0.07)	0.18 (0.07)	0.07 (0.04)	0.06 (0.05)
8	Heracles Almelo	26	36	6	0.32 (0.15)	0.18 (0.08)	0.07 (0.05)	0.06 (0.05)
9	FC Groningen	26	35	1	0.39 (0.11)	0.17 (0.09)	0.08 (0.07)	0.06 (0.04)
10	SC Heerenveen	26	33	0	0.39 (0.09)	0.20 (0.10)	0.05 (0.03)	0.06 (0.04)
11	Sparta Rotterdam	26	33	-4	0.31 (0.13)	0.22 (0.09)	0.06 (0.05)	0.05 (0.05)
12	FC Emmen	26	32	-13	0.32 (0.12)	0.22 (0.11)	0.05 (0.04)	0.05 (0.03)
13	VVV-Venlo	26	28	-27	0.25 (0.08)	0.22 (0.10)	0.07 (0.04)	0.07 (0.04)
14	FC Twente	26	27	-12	0.27 (0.14)	0.21 (0.11)	0.06 (0.04)	0.07 (0.05)
15	PEC Zwolle	26	26	-18	0.29 (0.10)	0.20 (0.09)	0.08 (0.05)	0.06 (0.04)
16	Fortuna Sittard	26	26	-23	0.27 (0.11)	0.22 (0.10)	0.08 (0.05)	0.07 (0.05)
17	ADO Den Haag	26	19	-29	0.31 (0.11)	0.30 (0.11)	0.07 (0.06)	0.06 (0.06)
18	RKC Waalwijk	26	15	-33	0.27 (0.08)	0.25 (0.06)	0.08 (0.04)	0.07 (0.07)

Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). Proportion variables indicate the mean (+ SD) proportion of tweets that contain different types of events, and run from 0 to 1.

Table A4

Fairness hypothesis: Descriptive information for the proportion of different types of events tweeted about by teams in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GD	All Positive		All Negative	
					Ingroup Events	Outgroup Events	Ingroup Events	Outgroup Events
1	Ajax	25	56	45	0.46 (0.21)	0.18 (0.12)	0.09 (0.11)	0.09 (0.10)
2	AZ	25	56	37	0.76 (0.32)	0.38 (0.22)	0.03 (0.07)	0.09 (0.13)
3	Feyenoord	25	50	15	0.58 (0.22)	0.25 (0.15)	0.14 (0.10)	0.12 (0.12)
4	PSV	26	49	26	0.49 (0.19)	0.21 (0.13)	0.03 (0.05)	0.02 (0.04)
5	Willem II	26	44	3	1.05 (0.34)	0.76 (0.24)	0.25 (0.17)	0.22 (0.10)
6	FC Utrecht	25	41	16	0.73 (0.24)	0.46 (0.18)	0.13 (0.11)	0.23 (0.13)
7	Vitesse	26	41	10	0.61 (0.19)	0.44 (0.17)	0.17 (0.10)	0.15 (0.11)
8	Heracles Almelo	26	36	6	0.77 (0.48)	0.39 (0.17)	0.15 (0.11)	0.17 (0.16)
9	FC Groningen	26	35	1	0.89 (0.31)	0.50 (0.39)	0.20 (0.15)	0.13 (0.11)
10	SC Heerenveen	26	33	0	0.78 (0.19)	0.56 (0.24)	0.15 (0.11)	0.18 (0.13)
11	Sparta Rotterdam	26	33	-4	0.70 (0.30)	0.51 (0.18)	0.14 (0.12)	0.15 (0.14)
12	FC Emmen	26	32	-13	0.83 (0.28)	0.42 (0.18)	0.13 (0.10)	0.12 (0.09)
13	VVV-Venlo	26	28	-27	1.01 (0.35)	0.53 (0.21)	0.22 (0.15)	0.21 (0.15)
14	FC Twente	26	27	-12	0.77 (0.44)	0.42 (0.21)	0.13 (0.09)	0.14 (0.12)
15	PEC Zwolle	26	26	-18	0.70 (0.22)	0.35 (0.14)	0.19 (0.13)	0.17 (0.14)
16	Fortuna Sittard	26	26	-23	0.79 (0.26)	0.44 (0.14)	0.22 (0.12)	0.15 (0.10)
17	ADO Den Haag	26	19	-29	0.83 (0.39)	0.41 (0.13)	0.12 (0.11)	0.10 (0.10)
18	RKC Waalwijk	26	15	-33	0.77 (0.22)	0.60 (0.20)	0.24 (0.12)	0.21 (0.17)

Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). Proportion variables indicate the mean (+ SD) proportion of different type of events that were tweeted. In this calculation, proportions can be higher than 1, because it does not correct for the fact that some events are tweeted about more than once.

Table A5

Fairness hypothesis: Descriptive information for the proportion of unique events tweeted about by teams in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GD	Unique Positive		Unique Negative	
					Ingroup Events	Outgroup Events	Ingroup Events	Outgroup Events
1	Ajax	25	56	45	0.30 (0.13)	0.18 (0.11)	0.08 (0.11)	0.09 (0.10)
2	AZ	25	56	37	0.57 (0.19)	0.37 (0.21)	0.03 (0.07)	0.08 (0.13)
3	Feyenoord	25	50	15	0.43 (0.17)	0.23 (0.13)	0.14 (0.09)	0.12 (0.12)
4	PSV	26	49	26	0.36 (0.15)	0.21 (0.12)	0.03 (0.05)	0.02 (0.04)
5	Willem II	26	44	3	0.93 (0.24)	0.74 (0.24)	0.25 (0.16)	0.21 (0.10)
6	FC Utrecht	25	41	16	0.66 (0.22)	0.45 (0.18)	0.13 (0.11)	0.23 (0.12)
7	Vitesse	26	41	10	0.58 (0.18)	0.43 (0.17)	0.17 (0.09)	0.15 (0.11)
8	Heracles Almelo	26	36	6	0.54 (0.24)	0.35 (0.14)	0.15 (0.11)	0.16 (0.15)
9	FC Groningen	26	35	1	0.52 (0.15)	0.31 (0.22)	0.18 (0.12)	0.13 (0.11)
10	SC Heerenveen	26	33	0	0.65 (0.12)	0.48 (0.21)	0.14 (0.11)	0.17 (0.13)
11	Sparta Rotterdam	26	33	-4	0.57 (0.19)	0.50 (0.17)	0.14 (0.11)	0.14 (0.13)
12	FC Emmen	26	32	-13	0.72 (0.25)	0.33 (0.12)	0.12 (0.10)	0.12 (0.09)
13	VVV-Venlo	26	28	-27	0.92 (0.29)	0.51 (0.20)	0.22 (0.15)	0.20 (0.15)
14	FC Twente	26	27	-12	0.59 (0.25)	0.38 (0.17)	0.13 (0.09)	0.14 (0.11)
15	PEC Zwolle	26	26	-18	0.56 (0.14)	0.34 (0.14)	0.18 (0.13)	0.16 (0.13)
16	Fortuna Sittard	26	26	-23	0.68 (0.22)	0.43 (0.14)	0.21 (0.11)	0.15 (0.10)
17	ADO Den Haag	26	19	-29	0.71 (0.26)	0.40 (0.11)	0.12 (0.11)	0.10 (0.10)
18	RKC Waalwijk	26	15	-33	0.67 (0.18)	0.57 (0.20)	0.23 (0.12)	0.19 (0.14)

Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). Proportion variables indicate the mean (+ SD) proportion of different type of events that were tweeted. In this calculation, proportions are typically below 1, because it takes every event in account only once, also when it is tweeted about more than once.

Table A6

Engagement hypothesis: Descriptive information for the favorites of different types of events by teams in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GD	Twitter Followers	Favorites of Tweets about Positive		Favorites of Tweets about Negative	
						Ingroup Events	Outgroup Events	Ingroup Events	Outgroup Events
1	Ajax	25	56	45	1,243,762	1.95 (0.86)	0.66 (0.29)	0.44 (0.11)	0.60 (0.16)
2	AZ	25	56	37	70,083	6.25 (12.15)	0.86 (1.30)	1.07 (1.43)	1.10 (0.92)
3	Feyenoord	25	50	15	473,784	2.25 (3.21)	0.53 (0.55)	0.24 (0.16)	0.41 (0.25)
4	PSV	26	49	26	459,418	1.80 (1.32)	0.69 (0.32)	0.67 (0.30)	0.82 (0.32)
5	Willem II	26	44	3	38,435	2.50 (2.77)	0.30 (0.23)	0.30 (0.19)	0.38 (0.27)
6	FC Utrecht	25	41	16	70,762	1.18 (0.88)	0.33 (0.41)	0.14 (0.22)	0.17 (0.22)
7	Vitesse	26	41	10	68,016	0.87 (0.51)	0.41 (0.19)	0.37 (0.24)	0.33 (0.16)
8	Heracles Almelo	26	36	6	29,352	2.86 (2.84)	0.84 (0.73)	0.34 (0.27)	0.42 (0.33)
9	FC Groningen	26	35	1	80,835	1.55 (1.41)	0.97 (1.84)	0.27 (0.19)	0.34 (0.25)
10	SC Heerenveen	26	33	0	81,463	0.84 (0.60)	0.20 (0.15)	0.15 (0.13)	0.27 (0.28)
11	Sparta Rotterdam	26	33	-4	24,610	2.18 (1.79)	0.26 (0.21)	0.28 (0.34)	0.41 (0.35)
12	FC Emmen	26	32	-13	15,388	5.13 (8.15)	0.54 (0.52)	0.55 (0.69)	0.49 (0.57)
13	VVV-Venlo	26	28	-27	27,506	1.04 (1.02)	0.29 (0.39)	9.32 (33.38)	0.34 (0.42)
14	FC Twente	26	27	-12	124,864	1.99 (3.15)	0.48 (0.66)	0.29 (0.52)	0.27 (0.29)
15	PEC Zwolle	26	26	-18	67,717	1.84 (3.42)	0.29 (0.15)	0.23 (0.38)	0.20 (0.13)
16	Fortuna Sittard	26	26	-23	17,629	3.05 (3.58)	0.84 (0.40)	0.78 (0.49)	0.84 (0.58)
17	ADO Den Haag	26	19	-29	66,025	0.91 (1.05)	0.24 (0.11)	0.16 (0.15)	0.48 (1.26)
18	RKC Waalwijk	26	15	-33	19,516	1.88 (2.10)	0.36 (0.31)	0.38 (0.35)	0.36 (0.38)

Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). The Twitter followers column lists the number of followers at the start of the first game of the Eredivisie, season 2019-2020. The variables with Favorites represent means (+ SDs) standardized by 10,000 followers.

Table A7

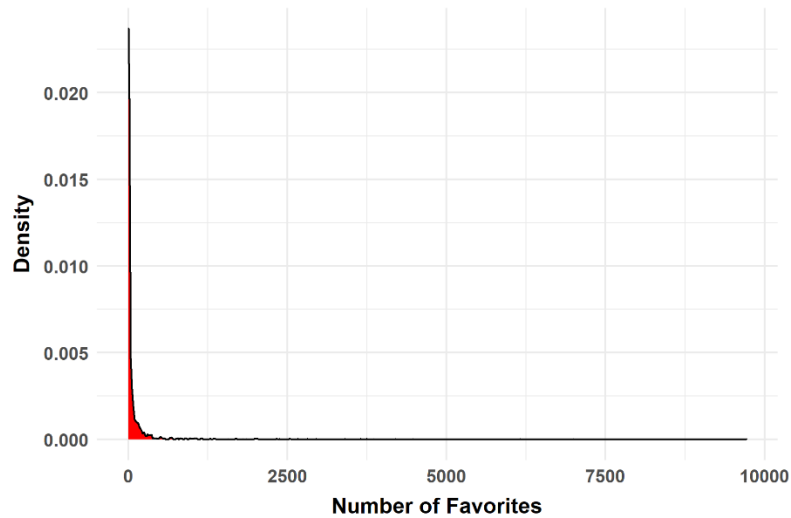
Engagement hypothesis: Descriptive information for the retweets of different types of events by teams in the Dutch Eredivisie (season 2019-2020)

Pos	Team	P	Pts	GD	Twitter Followers	Retweets of Positive		Retweets of Negative	
						Ingroup Events	Outgroup Events	Ingroup Events	Outgroup Events
1	Ajax	25	56	45	1,243,762	0.285 (0.143)	0.095 (0.036)	0.045 (0.020)	0.054 (0.020)
2	AZ	25	56	37	70,083	1.469 (3.503)	0.091 (0.172)	0.186 (0.137)	0.185 (0.192)
3	Feyenoord	25	50	15	473,784	0.362 (0.305)	0.082 (0.066)	0.047 (0.032)	0.049 (0.043)
4	PSV	26	49	26	459,418	0.259 (0.313)	0.069 (0.058)	0.091 (0.073)	0.045 (0.039)
5	Willem II	26	44	3	38,435	0.218 (0.293)	0.003 (0.010)	0.005 (0.018)	0.005 (0.016)
6	FC Utrecht	25	41	16	70,762	0.158 (0.131)	0.017 (0.028)	0.002 (0.011)	0.015 (0.033)
7	Vitesse	26	41	10	68,016	0.217 (0.186)	0.073 (0.089)	0.043 (0.077)	0.016 (0.037)
8	Heracles Almelo	26	36	6	29,352	0.385 (0.433)	0.051 (0.056)	0.056 (0.076)	0.029 (0.052)
9	FC Groningen	26	35	1	80,835	0.305 (0.299)	0.196 (0.312)	0.084 (0.085)	0.056 (0.075)
10	SC Heerenveen	26	33	0	81,463	0.123 (0.110)	0.042 (0.051)	0.019 (0.042)	0.032 (0.067)
11	Sparta Rotterdam	26	33	-4	24,610	0.195 (0.229)	0.022 (0.063)	0.039 (0.076)	0.069 (0.134)
12	FC Emmen	26	32	-13	15,388	0.646 (1.169)	0.088 (0.135)	0.118 (0.170)	0.093 (0.206)
13	VVV-Venlo	26	28	-27	27,506	0.303 (0.280)	0.124 (0.137)	1.755 (6.557)	0.055 (0.138)
14	FC Twente	26	27	-12	124,864	0.396 (0.844)	0.067 (0.108)	0.084 (0.271)	0.029 (0.051)
15	PEC Zwolle	26	26	-18	67,717	0.427 (0.924)	0.046 (0.079)	0.038 (0.090)	0.006 (0.025)
16	Fortuna Sittard	26	26	-23	17,629	0.423 (0.727)	0.126 (0.147)	0.027 (0.079)	0.071 (0.140)
17	ADO Den Haag	26	19	-29	66,025	0.156 (0.165)	0.034 (0.043)	0.053 (0.068)	0.099 (0.282)
18	RKC Waalwijk	26	15	-33	19,516	0.314 (0.446)	0.041 (0.083)	0.023 (0.071)	0.036 (0.114)

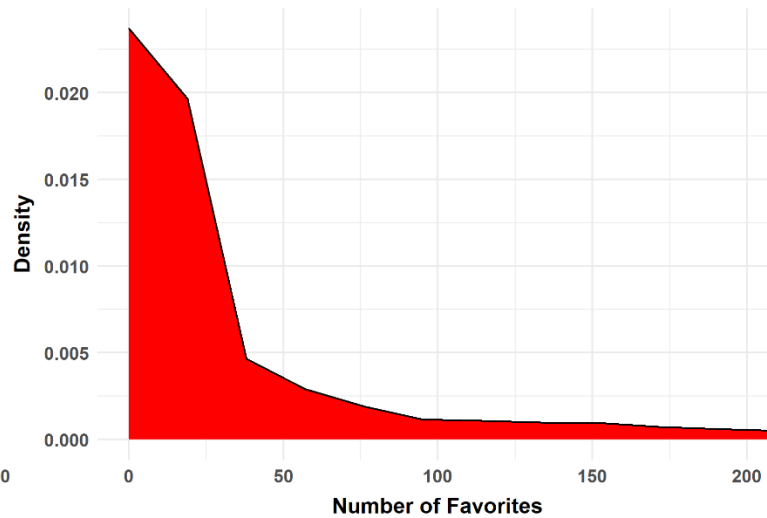
Note: Pos = Position in the Eredivisie, P = Number of games played, Pts = Points won, GD = Goal Difference (i.e., Number of goals scored – number of goals conceded). The Twitter followers column lists the number of followers at the start of the first game of the Eredivisie, season 2019-2020. The variables with Retweets represent means (+ SDs) standardized by 10,000 followers.

Online Appendix B: Density Plots of Engagement Variables

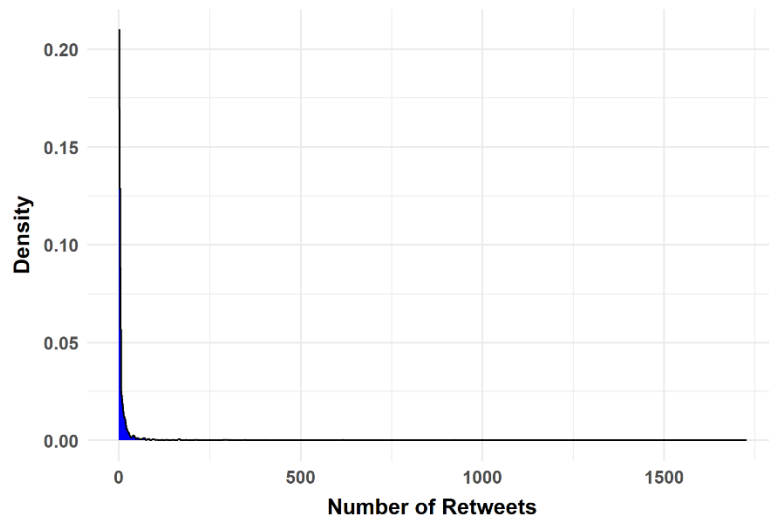
A Density Plot for Favorites
(Entire Scale)



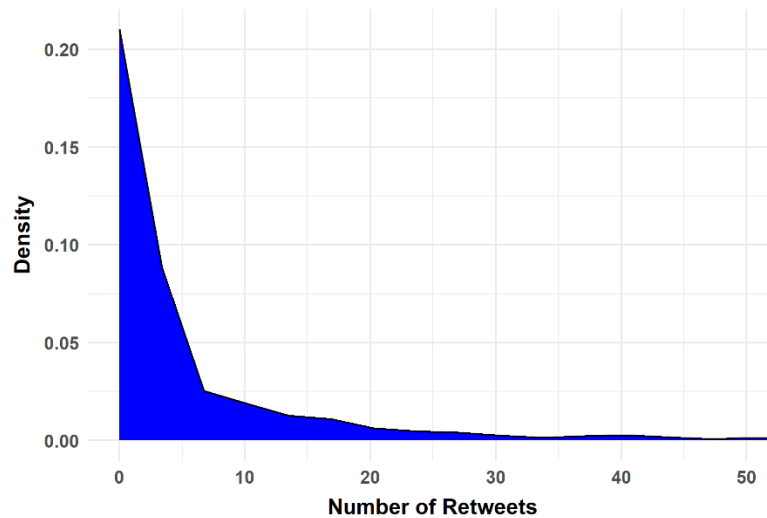
B Density Plot for Favorites
(Zoomed in on x-axis)



C Density Plot for Retweets
(Entire Scale)



D Density Plot for Retweets
(Zoomed in on x-axis)



Note: Density Plots of Favorites (panels A and B) and Retweets (panels C and D). Panels A and C show the entire scale, and panels B and D zoom in on the x-axis.

Online Appendix C: Residual Plots for Dependent Variables

Figure C1

Residual Plots for Dependent Variable: Tweet Volume (H1)

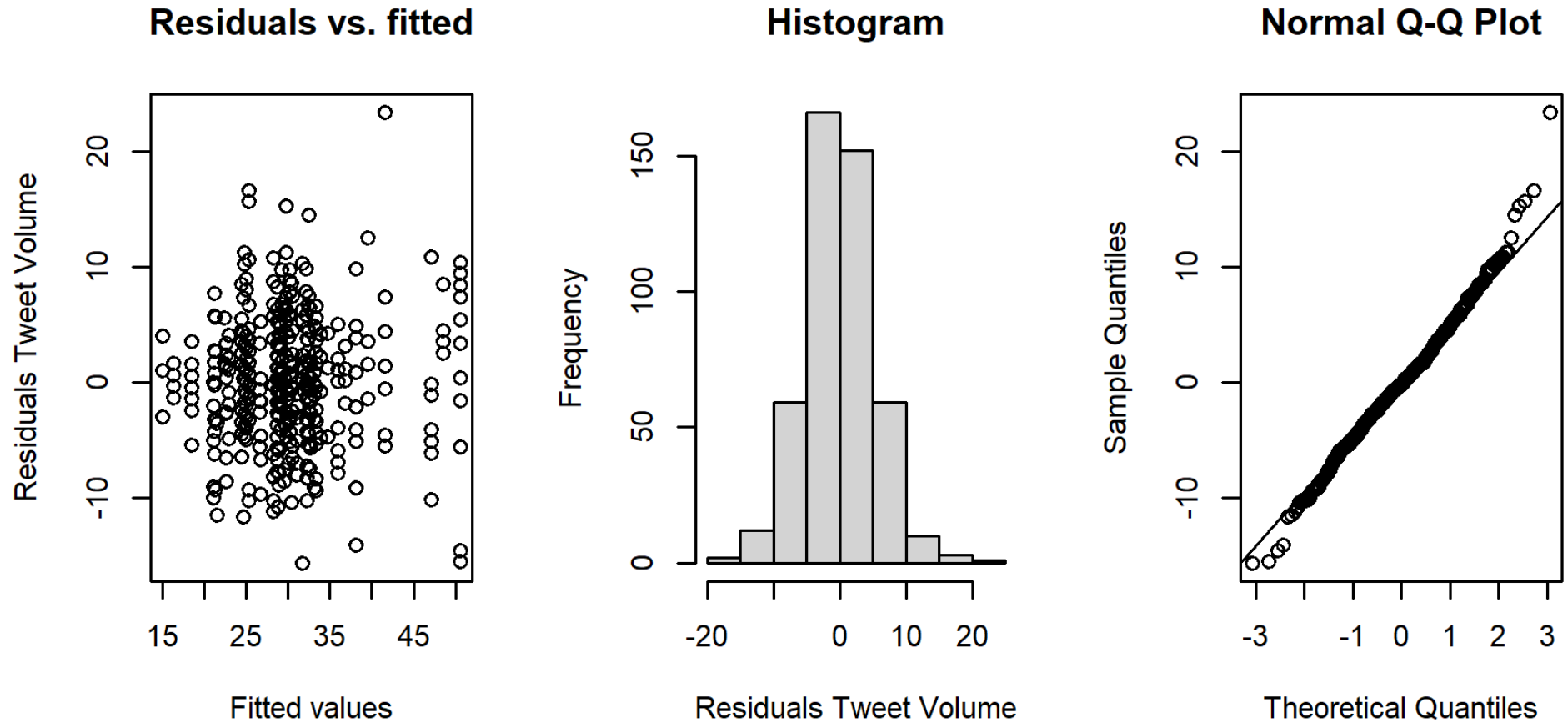


Figure C2

Residual Plots for Dependent Variable: Proportion of Tweets Reporting Different Event Types (Balance, H2)

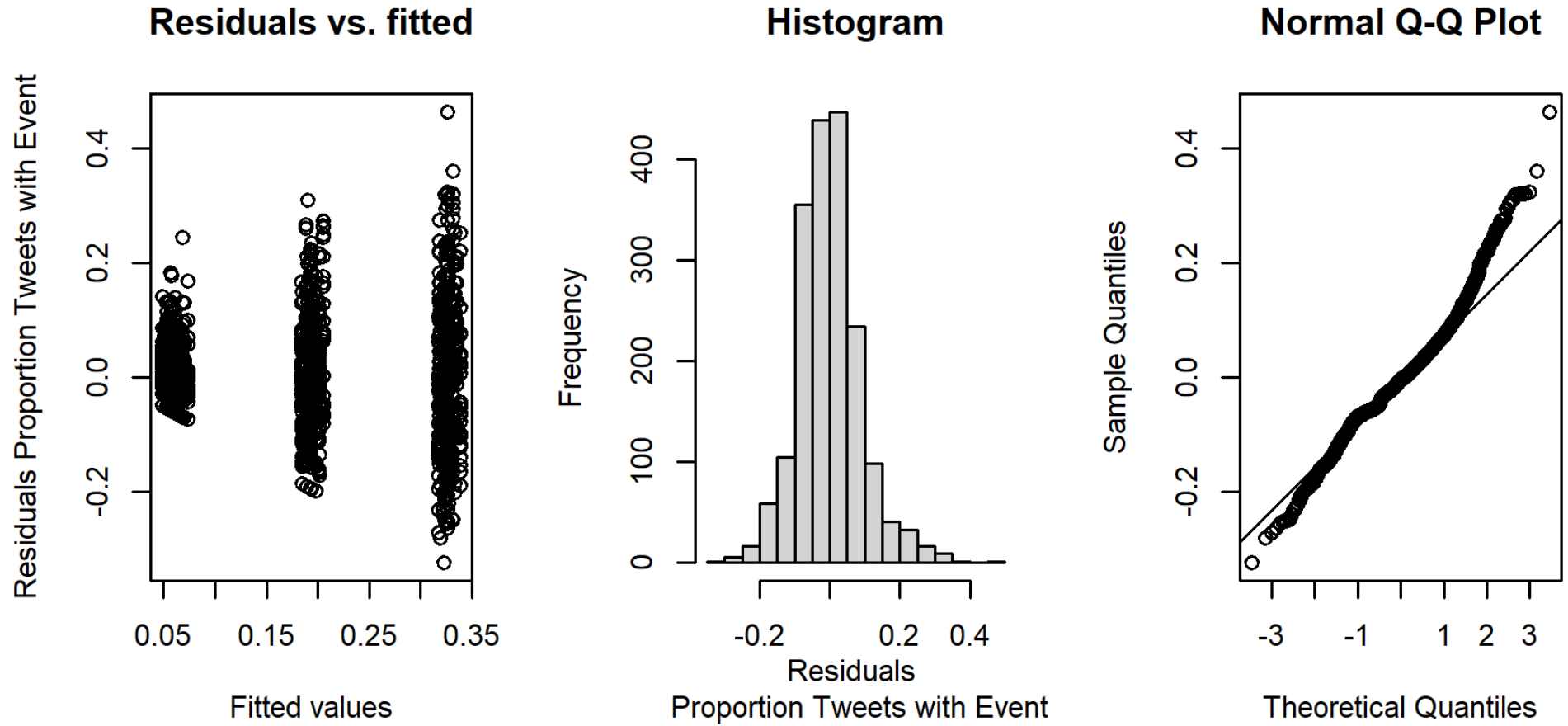


Figure C3

Residual Plots for Dependent Variable: Proportion of Events Tweeted about (Fairness, H3)

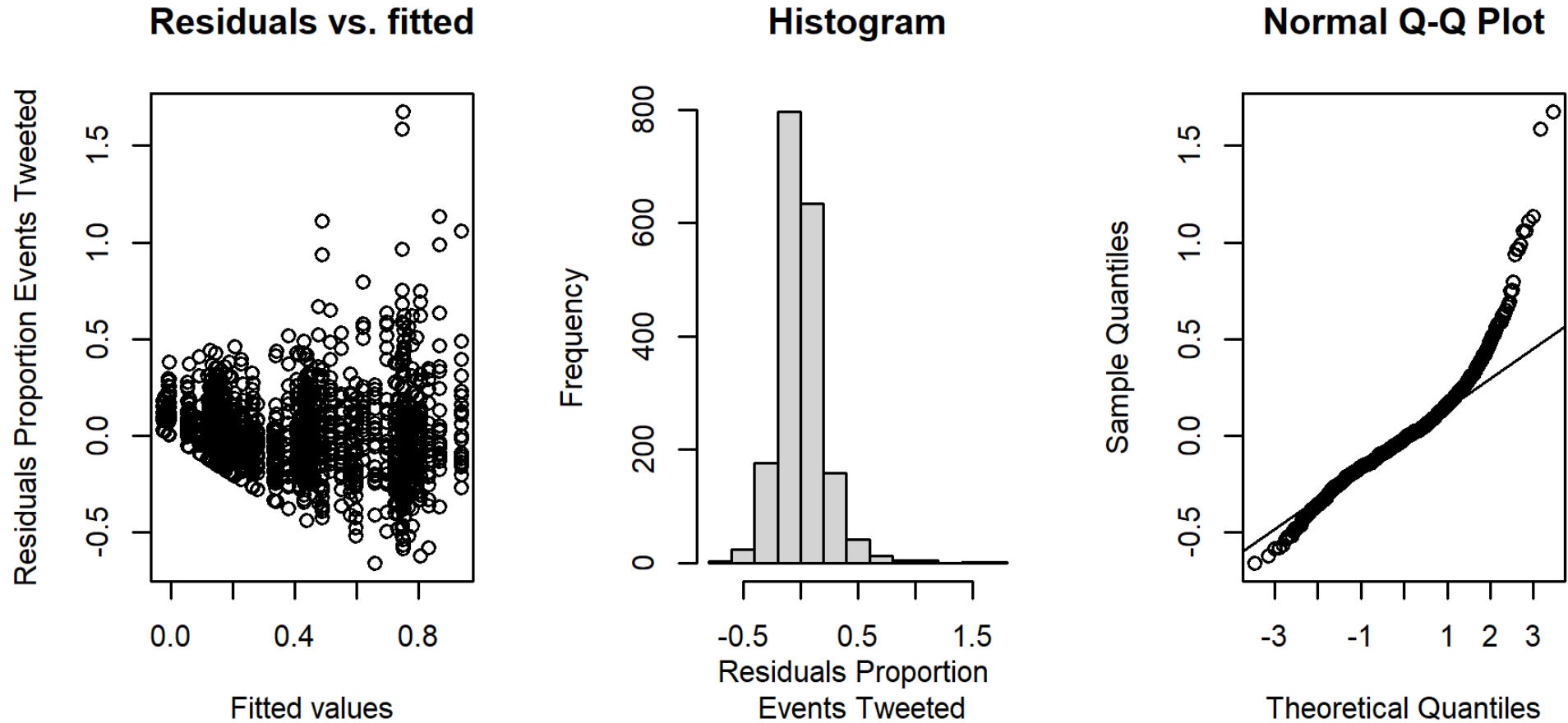


Figure C4

Residual Plots for Dependent Variable: Proportion of Unique Events Tweeted about (Fairness, H3)

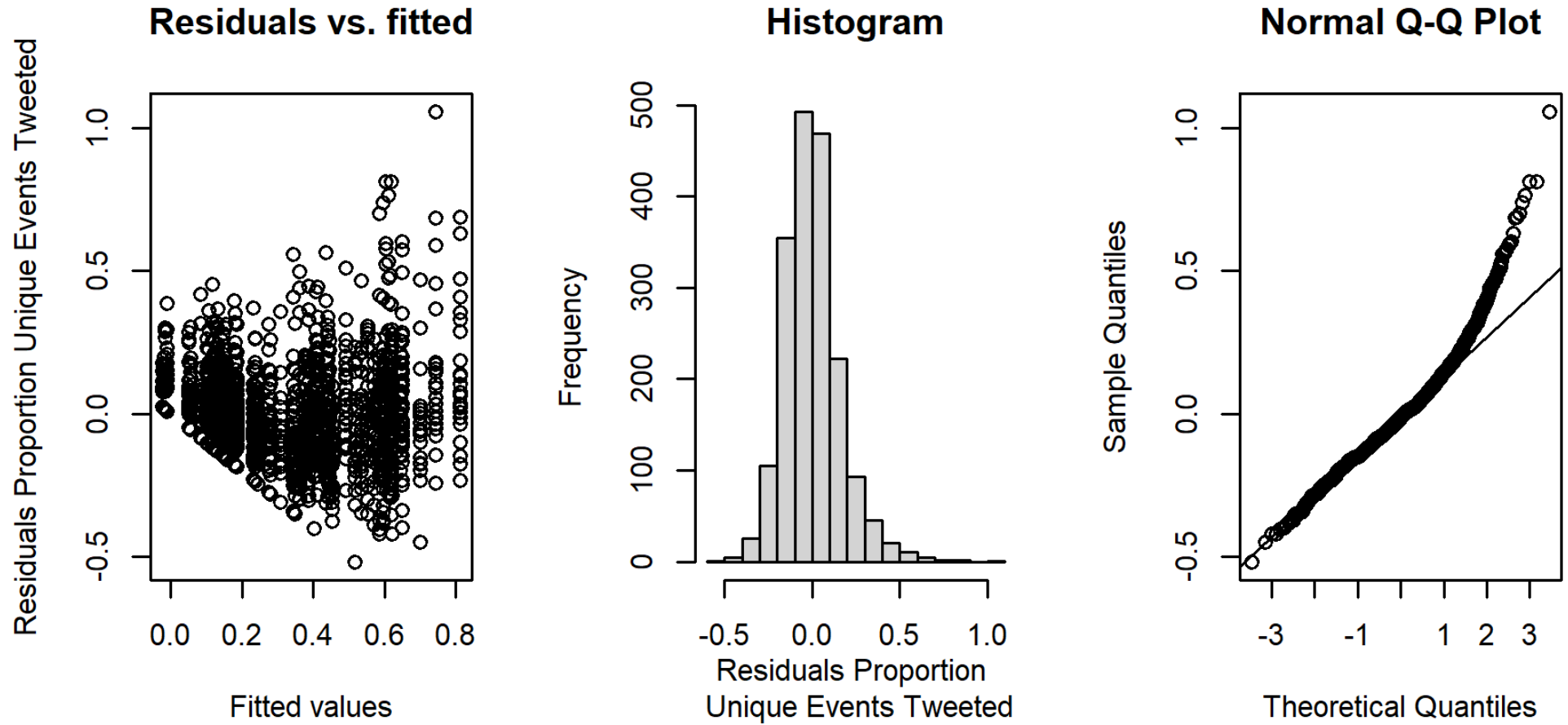
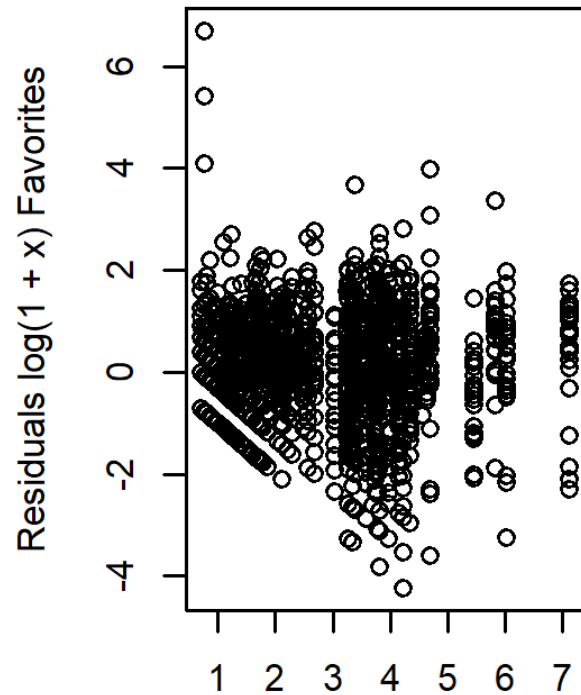
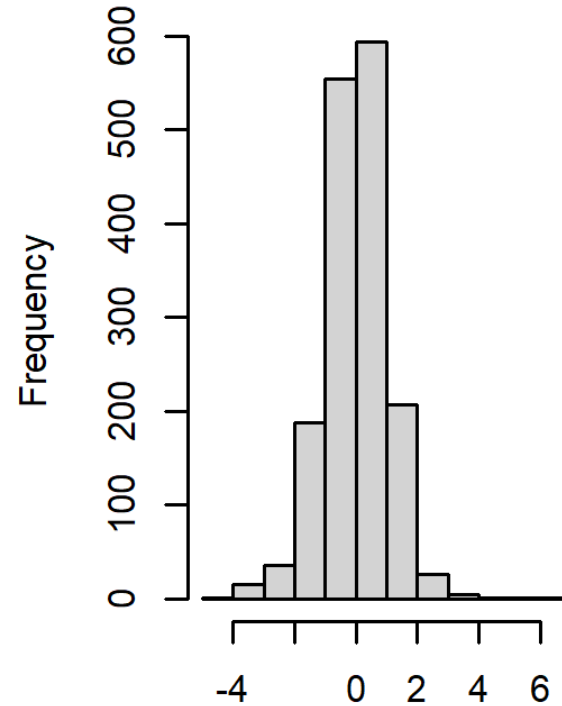
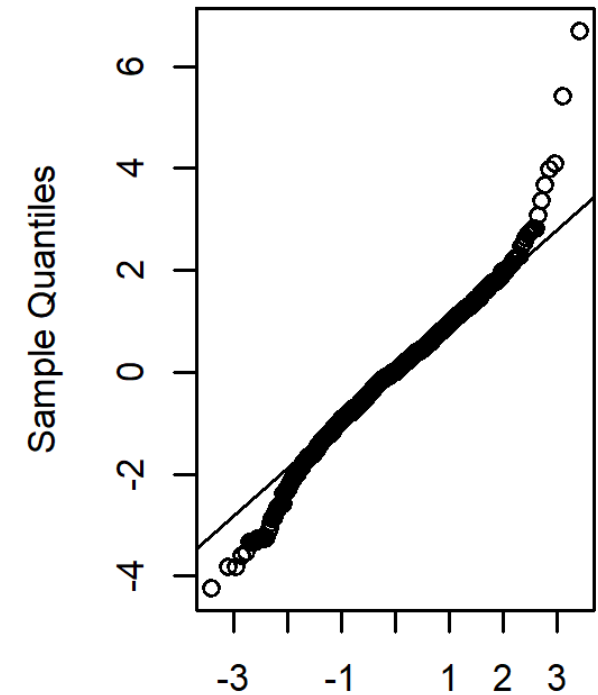


Figure C5

Residual Plots for Dependent Variable: $\log(1 + x)$ Favorites (Engagement, H4)

Residuals vs. fitted

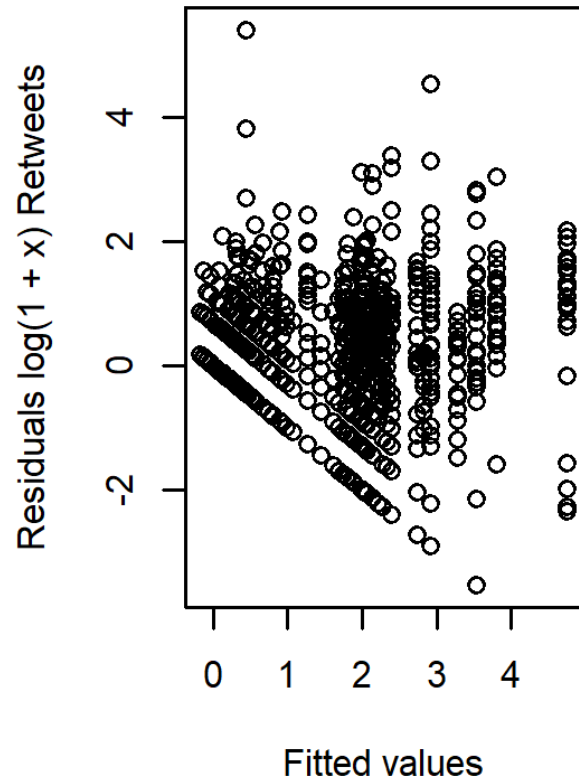
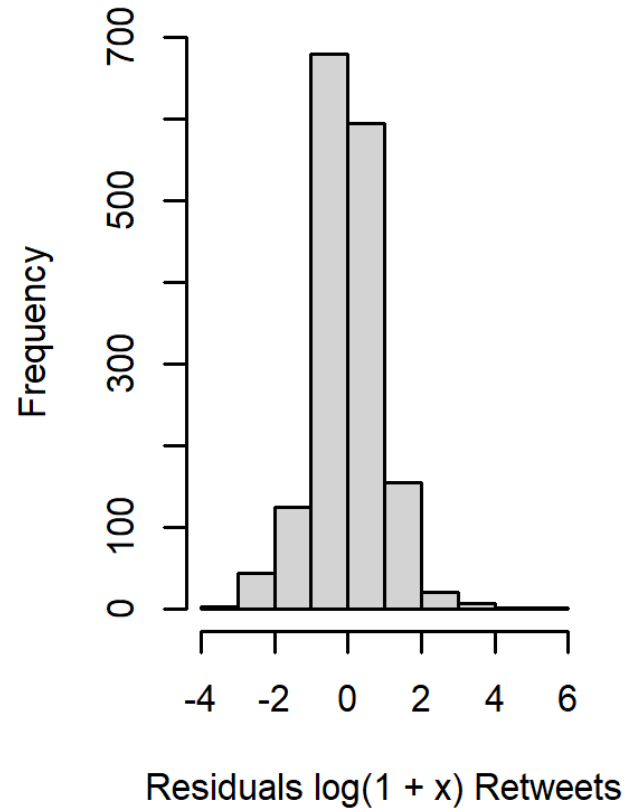
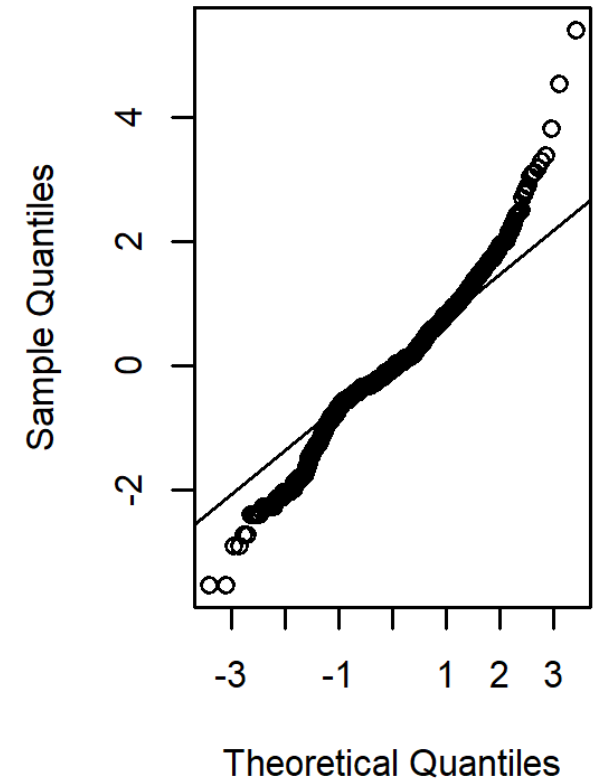
Fitted values

HistogramResiduals $\log(1 + x)$ Favorites**Normal Q-Q Plot**

Theoretical Quantiles

Figure C6

Residual Plots for Dependent Variable: $\log(1 + x)$ Retweets (Engagement, H4)

Residuals vs. fitted**Histogram****Normal Q-Q Plot**

Online Appendix D:

Fixed-effects estimates and variance–covariance estimates for models predicting dependent variables

Table D1

Fixed-effects estimates and variance–covariance estimates for models predicting Tweet Volume

<i>Predictors</i>	Tweet Volume			Tweet Volume		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	29.69	25.42 – 33.96	<0.001	31.48	27.05 – 35.92	<0.001
Result [Draw]				-2.10	-3.86 – -0.34	0.002
Result [Loss]				-3.44	-4.96 – -1.92	<0.001
Random Effects						
σ^2	30.31			28.10		
τ_{00}	48.25 _{Team}			50.46 _{Team}		
ICC	0.61			0.64		
N	18 _{Team}			18 _{Team}		
Observations	464			464		
Marginal R ² / Conditional R ²	0.000 / 0.614			0.029 / 0.653		

Note. The reference category for the Result predictor was a Win. The random effects part reports the within-group variance (σ^2), between-group variance (τ_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R².

Table D2

Fixed-effects estimates and variance–covariance estimates for models predicting Proportion Tweets with Event

<i>Predictors</i>	Proportion Tweets with Event			Proportion Tweets with Event			Proportion Tweets with Event		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.16	0.15 – 0.17	<0.001	0.02	0.01 – 0.04	<0.001	0.06	0.05 – 0.07	<0.001
Group type				0.07	0.06 – 0.08	<0.001	0.00	-0.01 – 0.02	0.550
Event valence				0.20	0.19 – 0.21	<0.001	0.14	0.12 – 0.15	<0.001
Group type * event valence							0.13	0.11 – 0.15	<0.001
Random Effects									
σ^2	0.02			0.01			0.01		
τ_{00}	0.00 _{Team}			0.00 _{Team}			0.00 _{Team}		
ICC				0.01			0.01		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
Marginal R ² / Conditional R ²	0.000 / NA			0.553 / 0.556			0.605 / 0.608		

Note. Proportions were coded from 0 to 1. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (τ_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R².

Table D3

Fixed-effects estimates and variance–covariance estimates for models predicting Proportion Events Tweeted

<i>Predictors</i>	Proportion Events Tweeted			Proportion Events Tweeted			Proportion Events Tweeted		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.37	0.32 – 0.42	<0.001	0.07	0.01 – 0.13	0.002	0.15	0.09 – 0.20	<0.001
Group type				0.16	0.13 – 0.19	<0.001	0.00	-0.03 – 0.04	0.732
Event valence				0.44	0.42 – 0.47	<0.001	0.29	0.25 – 0.32	<0.001
Group type * event valence							0.31	0.26 – 0.36	<0.001
Random Effects									
σ^2	0.10			0.05			0.04		
τ_{00}	0.01 _{Team}			0.01 _{Team}			0.01 _{Team}		
ICC	0.06			0.13			0.15		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
Marginal R ² / Conditional R ²	0.000 / 0.062			0.502 / 0.569			0.557 / 0.624		

Note. Proportions were coded from 0 to 1. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (τ_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R².

Table D4

Fixed-effects estimates and variance–covariance estimates for models predicting Proportion Unique Events Tweeted

<i>Predictors</i>	Proportion Unique Events Tweeted			Proportion Unique Events Tweeted			Proportion Unique Events Tweeted		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.32	0.27 – 0.38	<0.001	0.09	0.03 – 0.15	<0.001	0.14	0.08 – 0.20	<0.001
Group type				0.11	0.09 – 0.13	<0.001	0.00	-0.02 – 0.03	0.651
Event valence				0.36	0.34 – 0.38	<0.001	0.26	0.23 – 0.29	<0.001
Group type * event valence							0.20	0.16 – 0.24	<0.001
Random Effects									
σ^2	0.07			0.03			0.03		
τ_{00}	0.01 _{Team}			0.01 _{Team}			0.01 _{Team}		
ICC	0.10			0.21			0.22		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
Marginal R ² / Conditional R ²	0.000 / 0.102			0.484 / 0.591			0.519 / 0.627		

Note. Proportions were coded from 0 to 1. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (τ_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R².

Table D5

Fixed-effects estimates and variance–covariance estimates for models predicting $\log(1 + x)$ Favorites

<i>Predictors</i>	log(1 + x) Favorites			log(1 + x) Favorites			log(1 + x) Favorites		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	2.67	1.99 – 3.35	<0.001	1.25	0.60 – 1.90	<0.001	1.75	1.10 – 2.39	<0.001
Group type				0.90	0.76 – 1.05	<0.001	-0.09	-0.29 – 0.11	0.247
Event valence				1.70	1.55 – 1.84	<0.001	0.81	0.62 – 1.00	<0.001
Group type * event valence							1.76	1.49 – 2.03	<0.001
Random Effects									
σ^2	2.20			1.29			1.10		
T_{00}	1.25 _{Team}			1.09 _{Team}			1.08 _{Team}		
ICC	0.36			0.46			0.50		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1628			1628			1628		
Marginal R^2 / Conditional R^2	0.000 / 0.362			0.277 / 0.608			0.336 / 0.665		

Note. Analyses were conducted on the $\log(1 + x)$ -transformed dataset. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (T_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R^2 .

Table D6

Fixed-effects estimates and variance–covariance estimates for models predicting $\log(1 + x)$ Retweets

<i>Predictors</i>	log(1 + x) Retweet			log(1 + x) Retweet			log(1 + x) Retweet		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	1.24	0.72 – 1.76	<0.001	0.14	-0.36 – 0.64	0.461	0.53	0.04 – 1.03	0.006
Group type				0.87	0.74 – 0.99	<0.001	0.09	-0.09 – 0.27	0.199
Event valence				1.15	1.02 – 1.28	<0.001	0.46	0.29 – 0.62	<0.001
Group type * event valence							1.38	1.15 – 1.62	<0.001
Random Effects									
σ^2	1.48			0.96			0.84		
T_{00}	0.72 _{Team}			0.64 _{Team}			0.63 _{Team}		
ICC	0.33			0.40			0.43		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1628			1628			1628		
Marginal R^2 / Conditional R^2	0.000 / 0.326			0.244 / 0.546			0.300 / 0.600		

Note. Analyses were conducted on the $\log(1 + x)$ -transformed dataset. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (T_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal and conditional R^2 .

Online Appendix E: Alternative Analyses

Figures C2 – C4 suggest that the distributions of the dependent variables of (a) Proportion Tweets with Events, (b) Proportion Events Tweeted, and (c) Proportion Unique Events were skewed. To reduce the potential impact of outliers, we applied a $\log(1 + x)$ transformation to these dependent variables and recalculated the analyses of these dependent variables, which we report in this Online Appendix.

Figures E1 – E3 show the residual plots for the $\log(1 + x)$ -transformed variables, and demonstrate that the log transformation has reduced the skewness of the variables. Tables E1 – E3 contain the for results of the linear mixed effects analyses. We find that results of these re-analyses are similar to the analyses on the regular dataset, to which no log transformation was applied. That is, we found main effects of event valence on all three dependent variables, which means that clubs tweet more about positive than negative events. We find no main effects of event type on any of the dependent variables.

Importantly for our hypotheses, we find interaction effects of event valence and group type on all three log-transformed dependent variables. Post-hoc tests with Bonferroni adjustments indicated that positive ingroup events were mentioned more often than positive outgroup events (proportion tweets with events: $t(1841) = 22.27, p < .0001$; proportion events tweeted: $t(1841) = 23.17, p < .0001$; proportion unique events tweeted: $t(1841) = 18.51, p < .0001$). At the same time, we found no differences in mentions of negative ingroup and negative outgroup events (proportion tweets with events: $t(1841) = 0.68, p = .500$; proportion events tweeted: $t(1841) = 0.49, p = .626$; proportion unique events tweeted: $t(1841) = 0.59, p = .553$). These results are comparable to the analyses on the regular data reported in the paper.

Figure E1

Residual Plots for Dependent Variable: $\log(1 + x)$ Proportion Tweets with Event

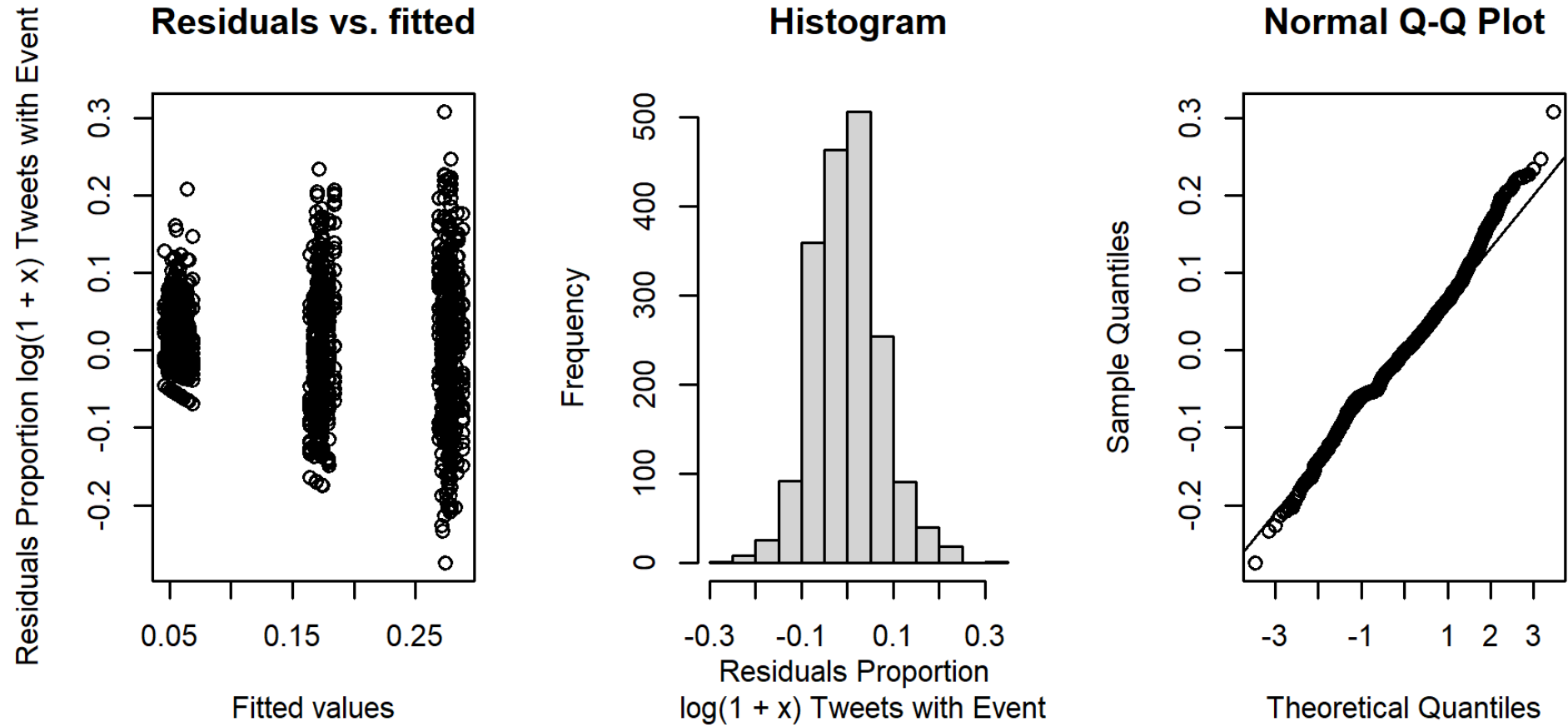


Figure E2

Residual Plots for Dependent Variable: $\log(1 + x)$ Proportion Events Tweeted

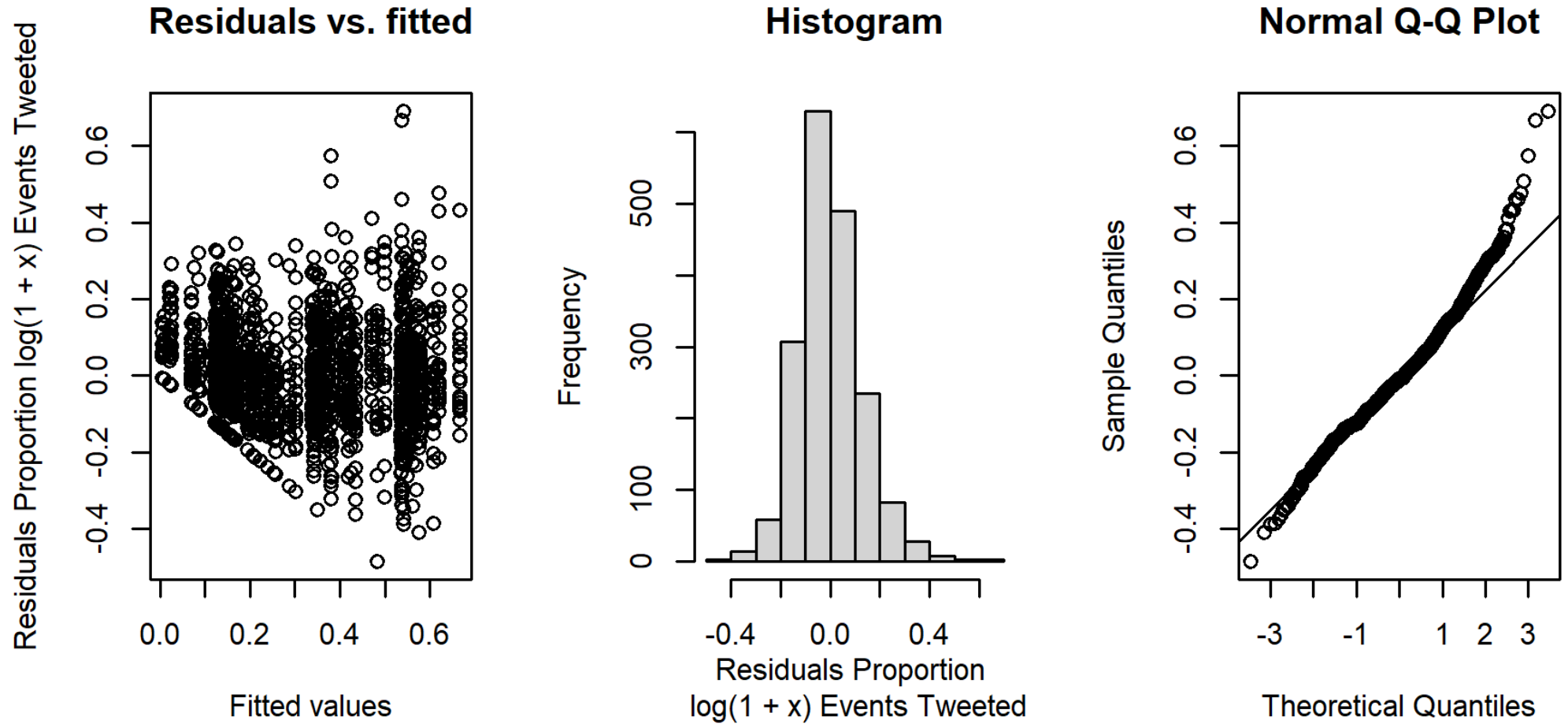


Figure E3

Residual Plots for Dependent Variable: $\log(1 + x)$ Proportion Unique Events Tweeted

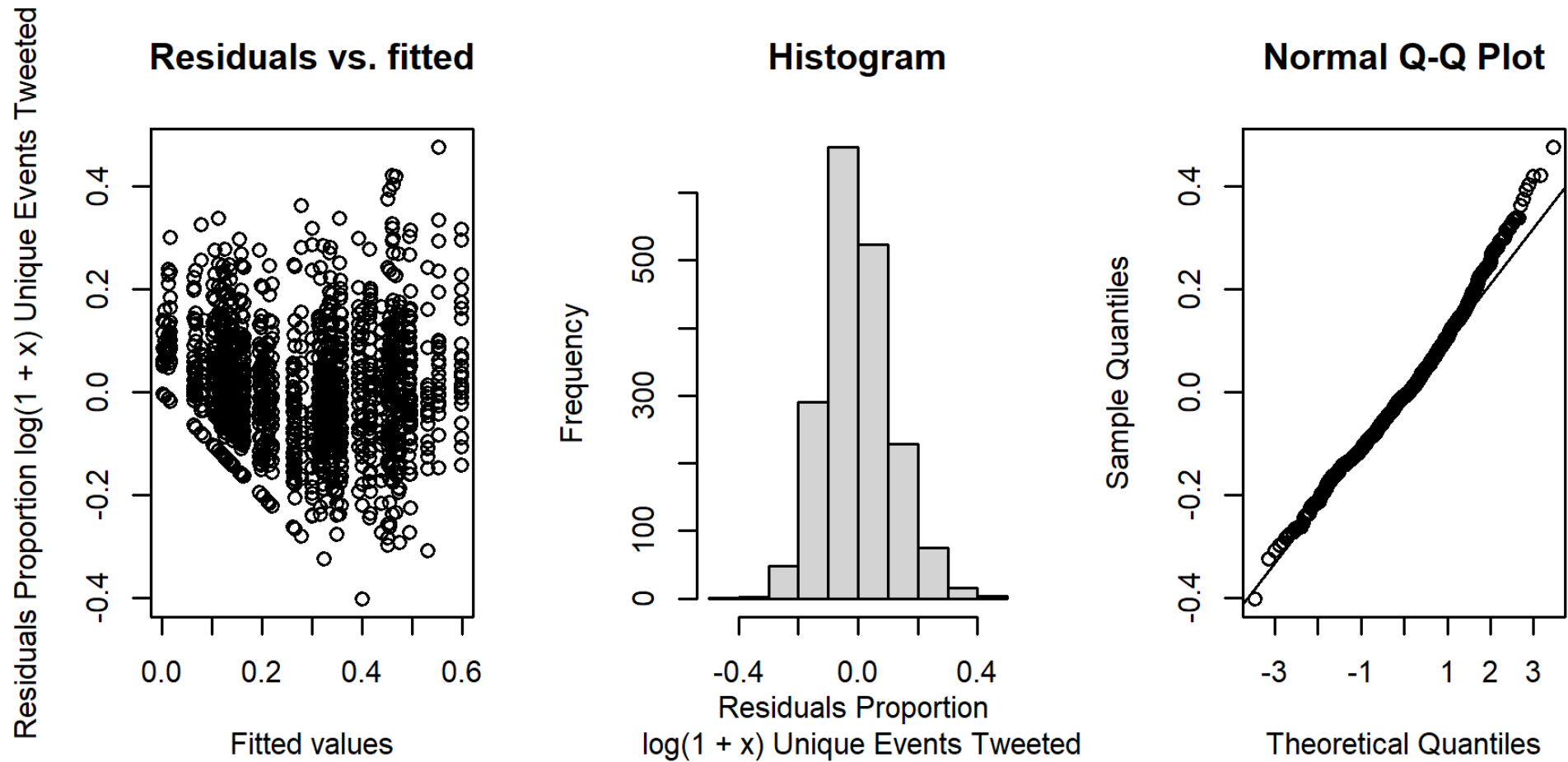


Table E1

Fixed-effects estimates and variance–covariance estimates for models predicting $\log(1 + x)$ Proportion Tweets with Event

<i>Predictors</i>	log(1 + x) Proportion Tweets with Event			log(1 + x) Proportion Tweets with Event			log(1 + x) Proportion Tweets with Event		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.14	0.13 – 0.15	<0.001	0.03	0.02 – 0.04	<0.001	0.05	0.05 – 0.06	<0.001
Group type				0.05	0.04 – 0.06	<0.001	0.00	-0.01 – 0.02	0.499
Event valence				0.17	0.16 – 0.18	<0.001	0.12	0.11 – 0.13	<0.001
Group type * event valence							0.10	0.08 – 0.12	<0.001
Random Effects									
σ^2	0.01			0.01			0.01		
T_{00}	0.00 _{Team}			0.00 _{Team}			0.00 _{Team}		
ICC				0.01			0.01		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
R ² mar / con	0.000 / NA			0.575 / 0.578			0.622 / 0.626		

Note. Analyses were conducted on the $\log(1 + x)$ -transformed dataset. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (T_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal (mar) and conditional (con) R².

Table E2

Fixed-effects estimates and variance–covariance estimates for models predicting $\log(1 + x)$ Proportion Events Tweeted

<i>Predictors</i>	log(1 + x) Proportion Events Tweeted			log(1 + x) Proportion Events Tweeted			log(1 + x) Proportion Events Tweeted		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.29	0.25 – 0.33	<0.001	0.08	0.04 – 0.12	<0.001	0.13	0.09 – 0.17	<0.001
Group type				0.10	0.08 – 0.12	<0.001	0.00	-0.02 – 0.03	0.626
Event valence				0.31	0.30 – 0.33	<0.001	0.22	0.20 – 0.24	<0.001
Group type * event valence							0.19	0.16 – 0.22	<0.001
Random Effects									
σ^2	0.05			0.02			0.02		
T_{00}	0.00 _{Team}			0.00 _{Team}			0.00 _{Team}		
ICC	0.07			0.16			0.18		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
R ² mar / con	0.000 / 0.067			0.546 / 0.618			0.593 / 0.665		

Note. Analyses were conducted on the $\log(1 + x)$ -transformed dataset. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (T_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal (mar) and conditional (con) R².

Table E3

Fixed-effects estimates and variance–covariance estimates for models predicting $\log(1 + x)$ Proportion Unique Events Tweeted

<i>Predictors</i>	log(1 + x) Proportion Events Tweeted			log(1 + x) Proportion Events Tweeted			log(1 + x) Proportion Events Tweeted		
	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>	<i>Estimates</i>	<i>99%CI</i>	<i>p</i>
(Intercept)	0.26	0.22 – 0.30	<0.001	0.09	0.05 – 0.13	<0.001	0.13	0.09 – 0.17	<0.001
Group type				0.07	0.06 – 0.09	<0.001	0.00	-0.01 – 0.02	0.553
Event valence				0.27	0.25 – 0.28	<0.001	0.20	0.18 – 0.22	<0.001
Group type * event valence							0.13	0.11 – 0.16	<0.001
Random Effects									
σ^2	0.03			0.01			0.01		
T_{00}	0.00 _{Team}			0.00 _{Team}			0.00 _{Team}		
ICC	0.10			0.22			0.24		
N	18 _{Team}			18 _{Team}			18 _{Team}		
Observations	1856			1856			1856		
R ² mar / con	0.000 / 0.102			0.514 / 0.621			0.544 / 0.652		

Note. Analyses were conducted on the $\log(1 + x)$ -transformed dataset. The reference category for Group Type was the outgroup, and the reference category for Event Valence was negative events. The random effects part reports the within-group variance (σ^2), between-group variance (T_{00}), the Intraclass Correlation Coefficient (ICC), and the number of units in a group (N). Model fit is reported for both marginal (mar) and conditional (con) R².