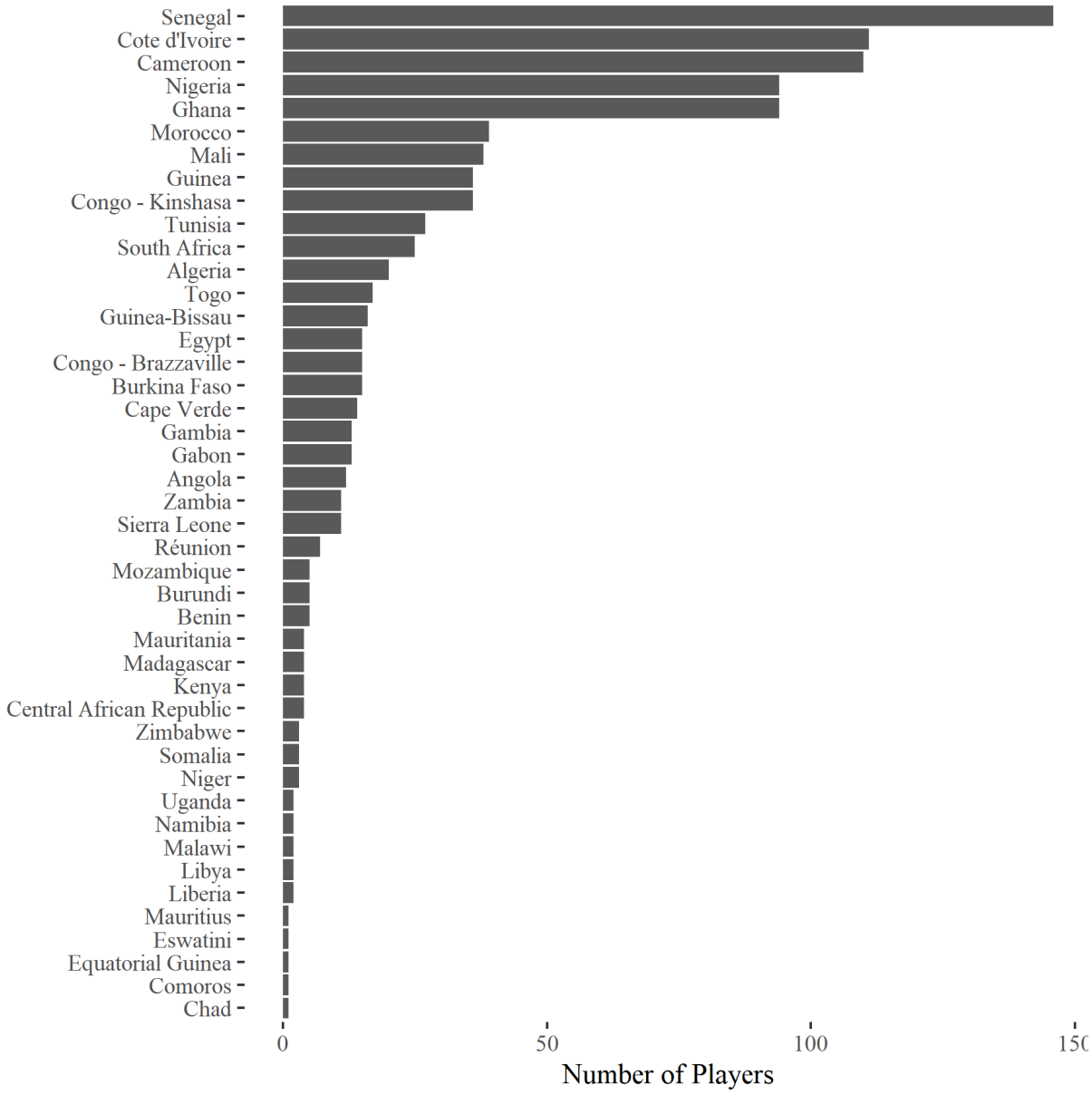
Online Appendix of

"Do Politically Irrelevant Events Cause Conflicts? The Cross-continental Effects of European Professional Football on Protests in Africa"

Kyosuke Kikuta, Mamoru Uesugi

A1. Number of African Players by Birth Country

Figure A1-1. Number of African Players by Birth Country



A2. Presence of Co-national Players and Fandom

We analyze whether the presence of co-national players can predict fandom. To this end, we use two datasets. The first is Wongsuphasawat's data about the Twitter followers of the official

accounts of the English Premier League (EPL) teams.[1] The data contain the proportion of Twitter followers of each of the 20 EPL teams in 40 African countries as of 21 April 2015 (proportion to the total number of followers of the EPL teams in a country). The sample consists of 800 team-countries. The second is based on Google Trends and contains all teams in the top five leagues that have ever participated in the Champions League in the 2005-2018 seasons (Google 2022). We collect the relative volume of search hits for each of the 49 teams in 40 African countries between 2005 and 2018 (proportional to the total search hits of the 49 teams). If a team is popular in a country, there should be a relatively larger volume of search hits for the team. The sample contains 1,960 team-countries.[2]

To those datasets, we add a dummy that takes 1 if at least one player from a country is affiliated with a team in the 2014-15 season (excluding the period after 21 April 2015) for the Twitter data and in the 2005-2018 seasons for the Google Trends data. We then split the dummy based on whether players' season appearances are above or below the median values. Finally, we regress the proportions of Twitter followers and Google search hits on the dummy variables. We include the team and country fixed effects to account for the possibility that African players self-select into popular teams. The standard errors are clustered by country.

[1] Wongsuphasawat 2015.

[2] We do not claim that the measurements would be perfect. Importantly, they are confounded by Internet access.

Table A2-1. Presence of Co-national Players and Fandom

	Proportion of Twitter followers (%)		Proportion of Google search hits (%)	
Co-national player	1.14*		0.37*	
	(0.42)		(0.15)	
Co-national player (>median appearance)		1.48*		0.49*
		(0.63)		(0.20)
Co-national player (≤median appearance)		0.80		0.17
		(0.95)		(0.13)
N	800		1,960	

NOTE: The coefficient estimates and corresponding standard errors in parentheses. The models include team and country fixed effects. The standard errors are clustered by country. $* \ p < 0.05$; $\dagger \ p < 0.10$.

As seen in Table A2-1, the presence of co-national players increases the sizes of supporters; it increases the proportion of Twitter followers by 1 percentage point and the proportion of Google search hits by 0.4 percentage points. Furthermore, when we split the predictor to those of more or less than the median season appearances, the effects are particularly large for players with frequent appearances in games. Thus, even though these analyses show nothing more than correlations, they imply that both team affiliations and game appearances are significant predictors of fandom.

A3. Event Data Analysis: Event Categories

Table A3-1 lists the definitions and examples of a demonstration, riot, and battle in ACLED. The ACLED uses newspaper articles to identify the locations, dates, participants, and other characteristics of conflict events. The SCAD uses similar definitions and newspapers but it also contains information about the targets (central or local governments), issues, and size of a demonstration that are mentioned by newspapers. If the SCAD reports that a demonstration involves ethnic issues, we classify it as an ethnic demonstration. Because the ACLED does not

contain such information, I follow Depetris-Chauvin et al. and identify an ethnic demonstration if demonstrators are classified as ethnic groups.[3]

Table A3-1. Event Definitions and Examples (ACLED)

Demonstration	A public demonstration in which the participants do not engage in violence, though violence may be used against them. e.g., *29 November. Local residents of Garbahaarey town staged a peaceful demonstration. It was said to be related to the political differences between Jubbaland state and FGS.*
Riot	A violent event where demonstrators or mobs engage in disruptive acts, including but not limited to rock throwing, property destruction. e.g., *21 August. In Laascanod, a violent demonstration took place. Demonstrators attacked the security forces with stone and the security dispersed the protesters.*
Battle	A violent interaction between two politically organized armed groups at a particular time and location. e.g., *On 25 December 2019, suspected JNIM militants attacked a Dan Na Ambassagou checkpoint near Yoro, two militiamen killed.*

[3] Depetris-Chauvin, Durante, and Campante 2020.

A4. Event Data Analysis: Summary Statistics

Table A4-1. Summary Statistics

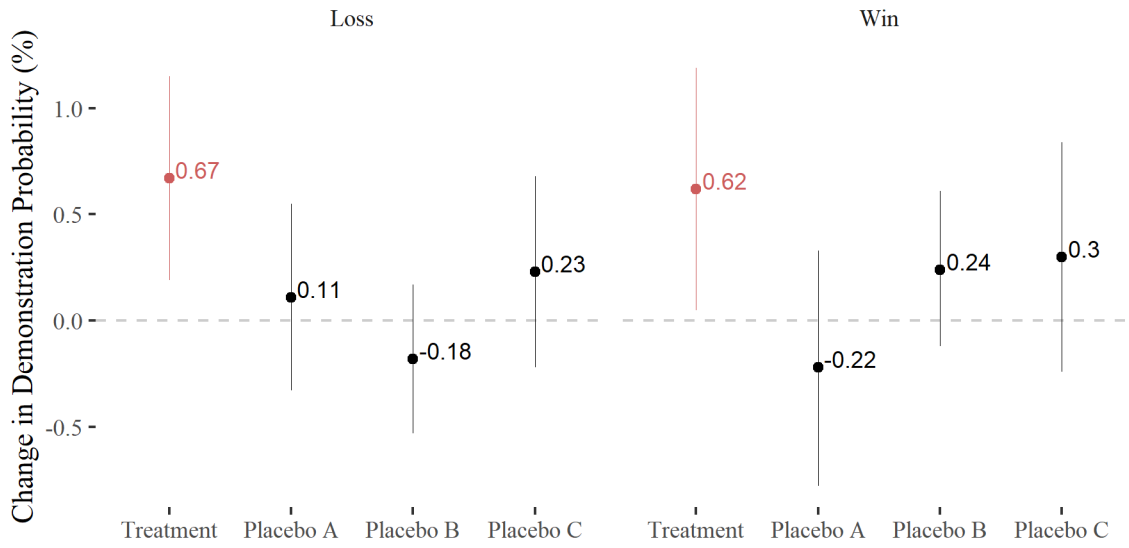
	Variable	Mean	S.D.	Min.	Max.	N
Close Losses & Draws	Close loss (dummy)	0.42	0.49	0.00	1.00	43,984
	Assignment probability (%)	55.8	11.5	9.24	93.7	43,984
	ΔDemonstration (%)	0.60	20.7	-100	100	43,984
	ΔRiot (%)	0.67	17.90	-100	100	43,984
	ΔBattle (%)	0.44	20.21	-100	100	43,984
	ΔDemonstration (%, SCAD)	-0.18	9.53	-100	100	39,384
	Differences in teams' ranks (percentile)	5.08	41.7	-100	100	42,686
	Season appearances	18.4	11.1	0.00	38.0	43,984
Close Wins & Draws	Close win (dummy)	0.41	0.49	0.00	1.00	43,084
	Assignment probability (%)	54.7	11.6	7.85	93.7	43,084
	ΔDemonstration (%)	0.55	20.4	-100	100	43,084
	ΔRiot (%)	0.64	17.8	-100	100	43,084
	ΔBattle (%)	0.41	20.1	-100	100	43,084
	ΔDemonstration (%, SCAD)	-0.23	9.55	-100	100	38,746
	Differences in teams' ranks (percentile)	-1.02	41.7	-100	100	41,712
	Season appearances	18.6	11.1	0.00	38.0	43,084

NOTE: The table shows the summary statistics of the samples used in the event data analysis (before matching). Because the SCAD does not contain data for 2019, there are missing values. The teams' ranks are also missing for the Champions League.

A5. Event Data Analysis: In-time Placebo Tests

We check the absence of pre-treatment trends in the outcome variable by conducting placebo tests with the lagged first differences of the outcome. Specifically, we use the differences between $t \in \{-1, \dots, -3\}$ and $t \in \{-4, \dots, -6\}$ (Placebo A), the differences between $t \in \{-4, \dots, -6\}$ and $t \in \{-7, \dots, -9\}$ (Placebo B), the differences between $t \in \{-7, \dots, -9\}$ and $t \in \{-10, \dots, -12\}$ (Placebo C) as outcome variables (t is days from a football game). If our research design is valid, the treatment variable should not affect the past differences in the probabilities of demonstrations. Figure A5-1 shows that none of the placebos has a statistically significant effect, and the point estimates are much smaller.

Figure A5-1. Placebo Tests with Past Differences of the Outcome



NOTE: The vertical bars are the 95% confidence intervals.

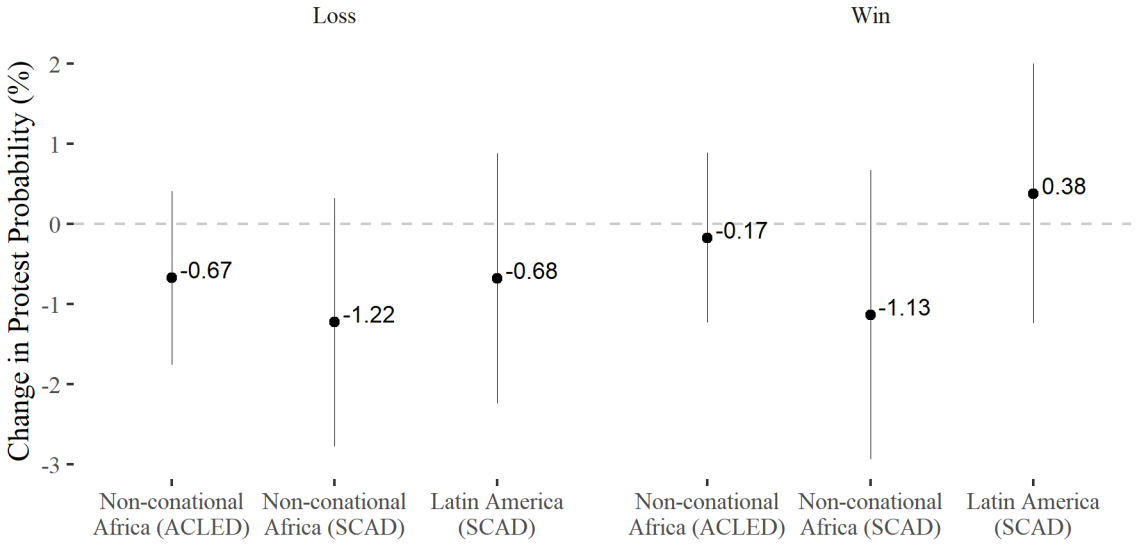
A6. Event Data Analysis: In-place Placebo Tests

We also conduct placebo tests by using protests in other African countries and those in Latin America.[4] If co-nationality does matter, the football games of an African player should not or only weakly affect protests in other African countries. Similarly, the games of African players should be irrelevant to protests in other continents such as those in Latin America. We test these possibilities by using the ACLED and SCAD. While the ACLED is limited to Africa except for a few recent years, the SCAD is available both for Africa and Latin America. The placebo outcome variables are the changes in the daily probabilities of protests in Africa except for players' original

[4] It is difficult to use the results of non-African players' teams as a placebo treatment. Every game has non-African players on both sides, and thus the placebo treatment is ill-defined.

countries, and those in Latin America. Figure A6-1 shows that the treatment variable does not affect protests in other African countries or those in Latin America.[5]

Figure A6-1. Placebo Tests with Protests in Other Countries



NOTE: The vertical bars are the 95% confidence intervals.

A7. Event Data Analysis: Effects on Non-ethnic and Ethnic Demonstrations

Following Depetris-Chauvin et al.,[6] we disaggregate the ACLED variables to those of ethnic and non-ethnic issues.[7] As seen in Table A7-1, we find large effects of close losses on non-ethnic demonstrations, while we do not find equivalent effects on ethnic demonstrations.

[5] The daily probability is based on all African countries except for a player's birth country or all countries in Latin America. As such, the outcome variables have larger average values, and thus the effect sizes should not be compared to those in the main analysis.

[6] Depetris-Chauvin, Durante, and Campante 2020.

[7] For event coding, refer to Depetris-Chauvin, Durante, and Campante (2020).

Table A7-1. Effects on Nonethnic and Ethnic Demonstrations (ACLED)

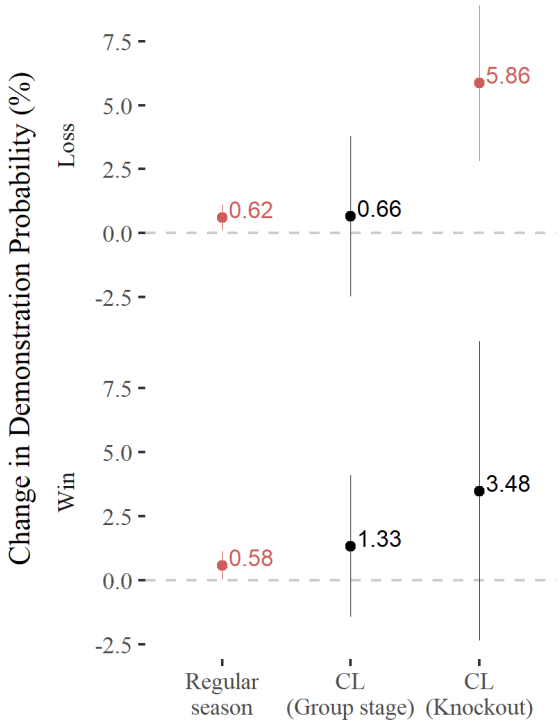
	ΔDemonstrations (nonethnic)		ΔDemonstrations (ethnic)	
Close loss	0.64^{*}		0.06	
	(0.27)		(0.05)	
Close win		0.63^{*}		-0.02
		(0.28)		(0.05)
N	$35{,}481$	$34{,}033$	$35{,}481$	$34{,}033$

NOTE: The coefficient estimates and corresponding standard errors in parentheses. The standard errors are two-way clustered by player's birth country and game. $* \; p < 0.05$; † $p < 0.10$.

A8. Event Data Analysis: Substantive Relevance

In the manuscript, we show that the point estimates are larger for the Champions League games, though they are not statistically significant due to small sample sizes. We therefore explore the effect heterogeneity in more depth. First, we further subset the data into the group and knockout stages of the Champions League. Because the knockout stage is the final round of the Champions League and thus draws more attention, the effect should be even larger for the games in the knockout stage. Figure A8-1 indeed shows that the effect is by far larger for games in the knockout stage. Given the small sample sizes, however, we cannot deny the possibility that the estimates are subject to small-sample biases (the extremely large estimates are indeed warning signs).

Figure A8-1. Effect Heterogeneity by the Champions League Stages

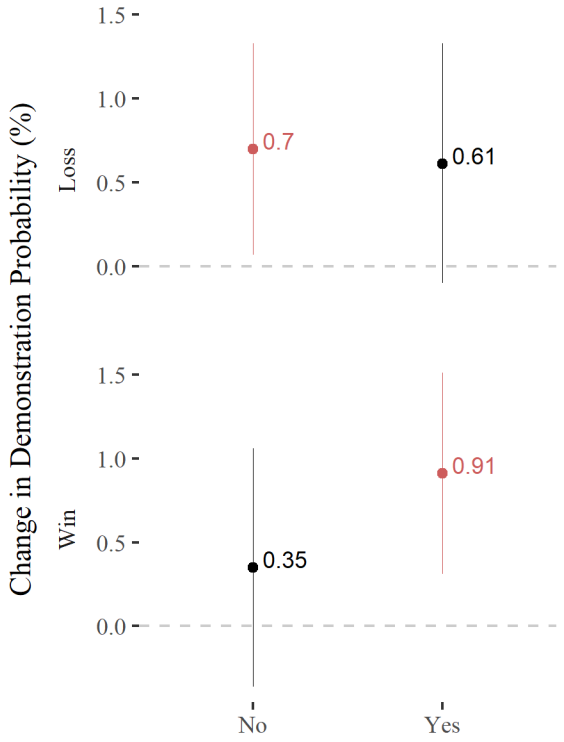


NOTE: The vertical bars are the 95% confidence intervals. CL: Champions League.

To address the problem, we expand the scope to all games involving teams that have participated in the Champions League. Specifically, we select 49 teams that have ever participated in the Champions League for the 2005-2018 seasons, and split the sample into cases where African players belong to those 49 teams. Because the Champions League games always involve those teams, the subsample is strictly larger than that in Figure A8-1. Moreover, the teams in the Champions League should be relatively competitive and thus popular. The results in Figure A8-2 are, however, mixed. The point estimates are similar for losing games, while the effects of winning games are larger for the teams that have participated in the Champions League. A potential explanation for the mixed results is that the analysis ignores the differences in the teams' popularities across countries. For instance, while Barcelona and Real Madrid are popular

throughout the continent, Premier League is more popular in English-speaking countries, and Ligue 1 is somewhat popular in Francophone countries.

Figure A8-2. Effect Heterogeneity by the Participation in the Champions League



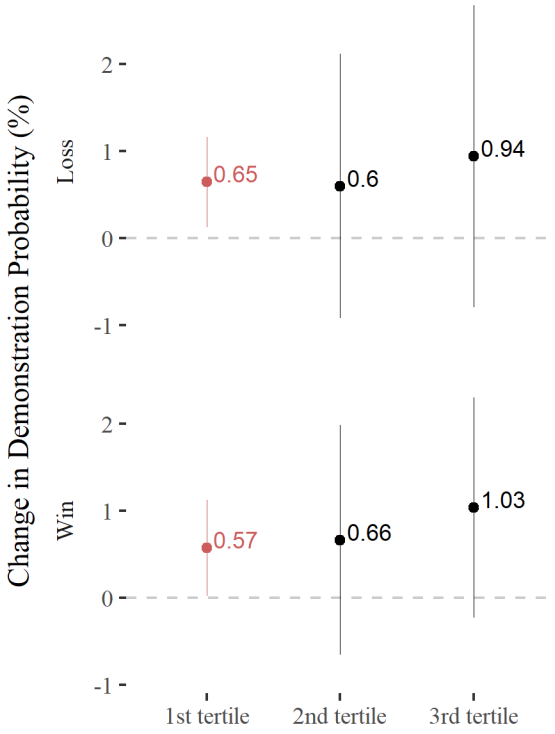
NOTE: The vertical bars are the 95% confidence intervals.

We therefore also subset the sample based on the sizes of fandom in each country. We collect the relative volume of Google search hits for every pair of a country and team that has ever participated in the Champions League for the 2005-2018 seasons (see Appendix A2).[8] We then

[8] Google 2022.

estimate the effects by the tercile of the search hits.[9] Figure A8-3 weakly confirms our hypothesis; the effects of losses and wins are large for popular teams, though the effects are not statistically significant due to the small number of games played by those teams.

Figure A8-3. Effect Heterogeneity by the Popularities of Teams



NOTE: The vertical bars are the 95% confidence intervals. The terciles are calculated without including the observations of zero search hit (otherwise, all terciles become zero because there are many observations of zero search hit). The first tercile contains the observations of zero search hit.

[9] The teams that have never participated in the Champions League for the 2005-2018 seasons are assumed to have zero search hit. Because there are many teams that have zero search hit, we drop those observations when we calculate the terciles (otherwise, all terciles would be zero).

Overall, the analyses imply that the effects tend to be larger for important games, though the results are less clear due to the limited number of important games. When we use narrower sets of important games, the results are subject to small-sample biases or not statistically significant. By contrast, when we use broader sets of games, the results become mixed because the subsamples include less relevant games. Despite those limitations, however, the point estimates tend to be larger for important games.

Finally, note that the above analyses are informal. The rigorous identification of effect heterogeneity requires the exogeneity of both treatment and conditioning variables, but none of the conditioning variables are plausibly exogenous. For instance, relatively stable countries might have larger numbers of players in famous teams, and the effects of football games might be smaller in those countries. This can create a spurious effect heterogeneity; the effects are *smaller* in games of famous teams. Given these possibilities, we caution readers against overinterpreting the results and leave it for future studies to rigorously test the effect heterogeneity.

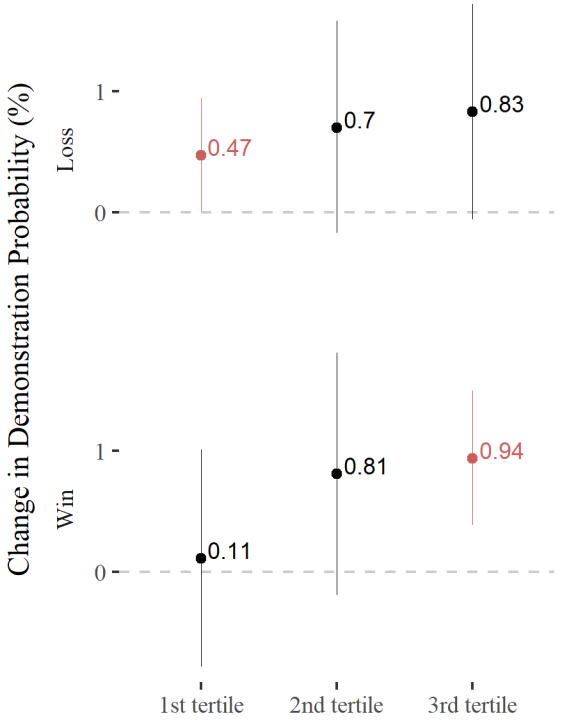
A9. Event Data Analysis: Reference Dependence

The literature of reference dependence suggests a difference between surprised and anticipated outcomes.[10] That is, unexpected winning and losing should have pronounced effects, because the departures from reference points ("surprise") should have larger effects on human behaviors.[11] We therefore report the results by different terciles of the observed treatment assignment probabilities. Figure A9-1, however, indicates opposite tendencies. The effects tend to be larger when the results are well anticipated.

[10] Kőszegi and Rabin 2006.

[11] Card and Dahl 2011.

Figure A9-1. Effect Heterogeneity by Pre-game Expectations

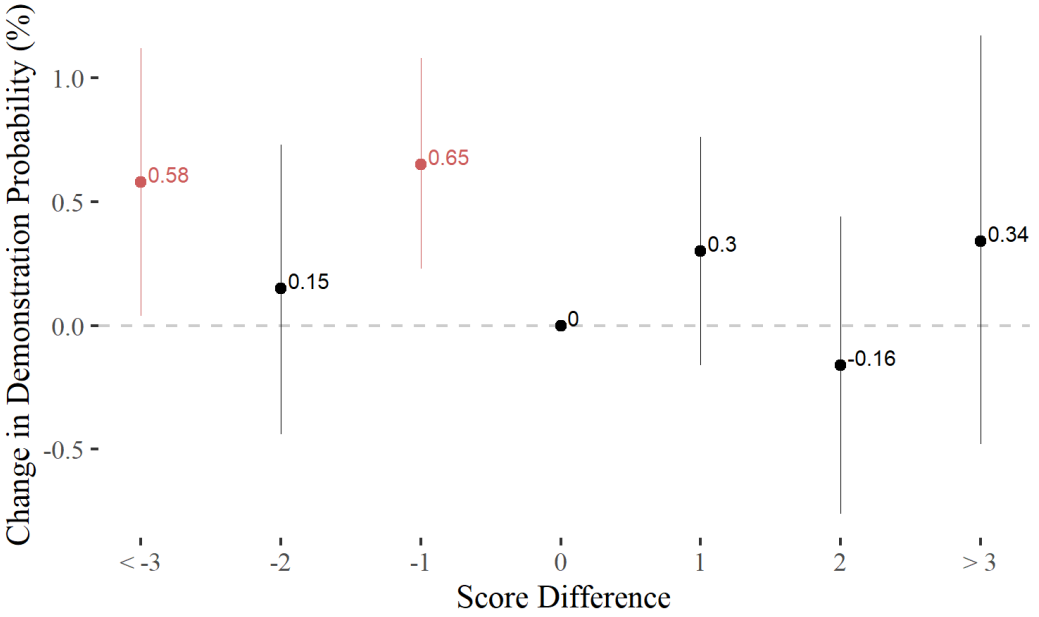


NOTE: The vertical bars are the 95% confidence intervals.

Similarly, from the perspective of reference dependence, losses and wins by large margins are expected to have large effects.[12] As far as the pre-game expectation is constant, the games of large margins represent a larger deviation from prior beliefs. We test this possibility by using both close and non-close games, applying the matching, and estimating the effects of each margin of losses (negative margin) and wins (positive margins). As seen in Figure A9-2, however, we do not find clear tendencies. The effects are statistically significant only for losing games (lefthand side of the figure) and the effects are larger for close and decisive games. Combined with the results of Figure A9-1, we are rather skeptical of the reference dependence.

[12] Card and Dahl 2011.

Figure A9-2. Effect Heterogeneity by Margins of Losses and Wins

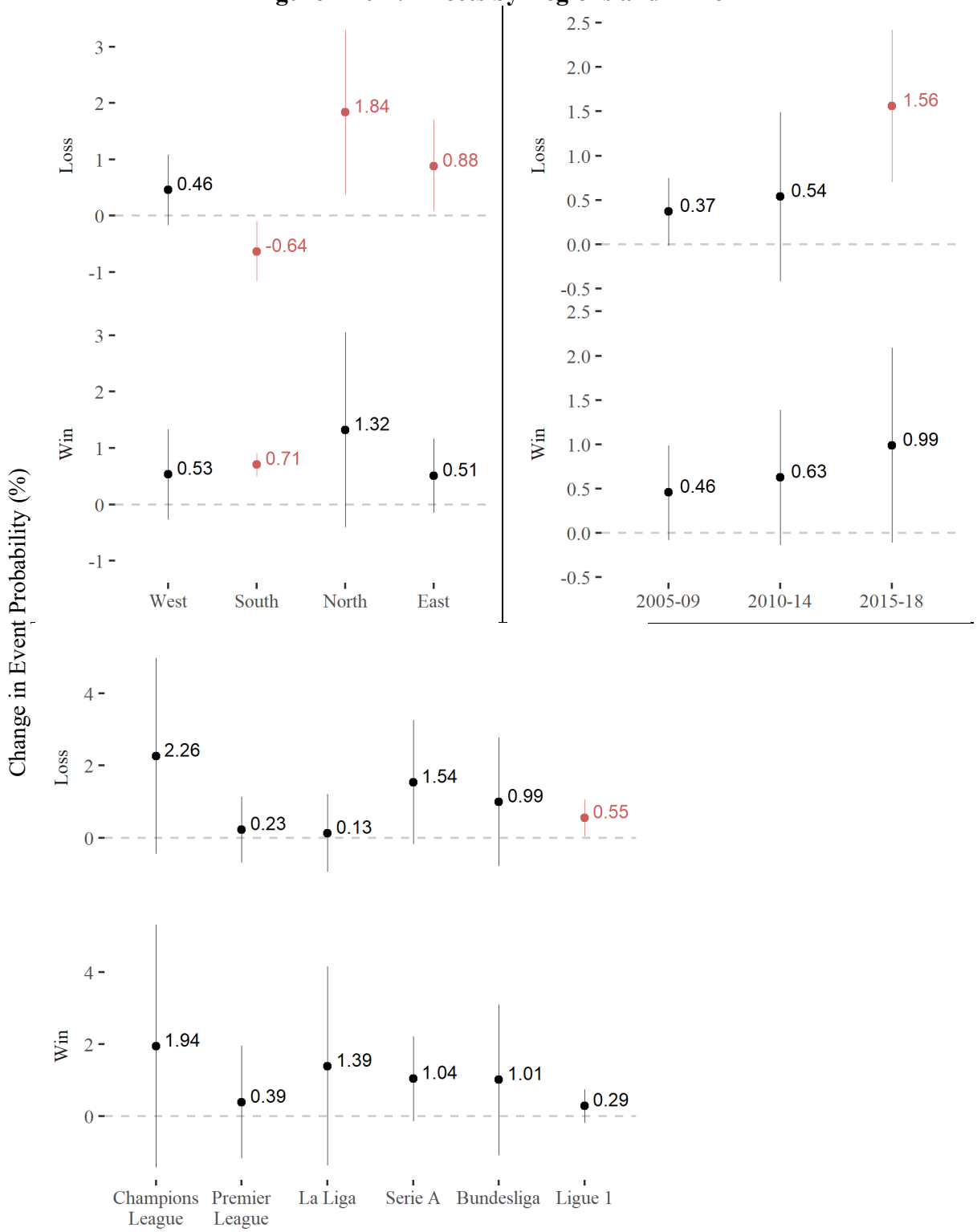


NOTE: The vertical bars are the 95% confidence intervals. The sample includes non-close games as well.

A10. Event Data Analysis: Effects by Regions, Time, and Leagues

As seen in the top left pane of Figure A10-1, the effects of close losses are positive except for Southern Africa, in which alternative sports such as cricket and rugby are also popular, while the effects of close victories are positive in all regions. Moving to the top right pane of Figure A10-1, the effects become larger in recent years, which is not surprising given the spread of the viewing centers and the growing coverage of internet access. Finally, the bottom pane of Figure A10-1 indicates that the effects of losses and wins are positive in all leagues, though the effects are relatively large for the Champions League, Serie A, and Bundesliga and somewhat small for the Premier League. The small effect of close losses in the Premier League can be explained by the fact that players from Southern Africa are more likely to play in the Premier League for historical, linguistic, and economic reasons, and that the effects are small in Southern Africa.

Figure A10-1. Effects by Regions and Time



NOTE: The figure shows the effects of close losses and wins on changes in the probabilities of demonstrations by geographical regions (top left), time (top right), and leagues (bottom). The vertical bars are the 95% confidence intervals.

A11. Event Data Analysis: Robustness Checks

The results are quite robust to the analysis based on players' citizenships (Table A11-1), exclusion of football games without an African player's presence (Table A11-2),[13] omission of cases where there are both close losses and wins on the same day for a country (Table A11-3),[14] aggregation to a country-game level (Table A11-4), alternative measurement of the outcome variable (Table A11-5), LDV specification (Table A11-6), matching not only on the inverse of pre-game betting odds but also on the number of shots on target (Table A11-7),[15] inclusion of non-close games (Table A11-8), inclusion of non-matched observations (Table A11-9), control for player performance and the inverse of betting odds (doubly robust regression; Table A11-10), inclusion of fixed effects (Figure A11-1), different caliper sizes (Figure A11-2), different time windows (Figure A11-3), and omission of countries (Figure A11-4).

---

[13] The outcome is the daily probability of protests in a country of a player's citizenship. If a player has multiple citizenships of African countries, each pair of a player and citizenship is treated as a separate observation. The standard errors are clustered by countries to account for the duplication.

[14] If there are multiple games on the same day for a given country, and if there are both close losses and wins among those games, the corresponding observations are dropped from the analysis.

[15] We calculate the differences in the numbers of shots on target for a player's team and its opponent. We then match the games based on the inverse of pre-game betting odds and the difference in target shots by using coarsened exact matching (King and Nielsen 2019). After the matching, the mean differences in the assignment probabilities, target shots, and team ranks are 0.02 percentage points, 0.001 shots, and 0.31 percentile points for the close losses and draws, and 0.09 percentage points, 0.02 shots, and 0.08 percentile points for the close wins and draws.

Table A11-1. Results Based on Players' Citizenships

	ΔDemonstrations	
Close loss	0.50^{*}	
	(0.15)	
Close win		0.58^{*}
		(0.24)
N	63,992	61,678

NOTE: The coefficient estimates and corresponding standard errors in parentheses. The standard errors are two-way clustered by player's birth country and game. $* \, p < 0.05$; $\dagger \, p < 0.10$.

Table A11-2. Results by African Players' Appearances

	ΔDemonstrations			
	Games of African players' appearances		Games w/o African players' appearances	
Close loss	0.88^{*}		0.27	
	(0.35)		(0.28)	
Close win		1.20^{*}		-0.48
		(0.43)		(0.33)
N	23,138	22,232	12,343	11,801

NOTE: Same as Table A11-1.

Table A11-3. Results with the Omission of Simultaneous Losses and Wins

	ΔDemonstrations	
Close loss	0.99^{*}	
	(0.45)	
Close win		0.66^{*}
		(0.31)
N	19,322	18,269

NOTE: Same as Table A11-1.

Table A11-4. Results with Aggregation to a Country-game Level

	ΔDemonstrations	
Close loss	0.70^{*}	
	(0.28)	
Close win		0.53^{*}
		(0.24)
N	30,536	29,407

NOTE: Same as Table A11-1.

Table A11-5. Results with Different Transformations of the Outcome Variable

	Dummy		Count		log(Count+1)	
Close loss	1.32*		0.03		0.01*	
	(0.49)		(0.03)		(0.01)	
Close win		0.30		0.00		0.00
		(0.67)		(0.03)		(0.01)
N	35,481	34,033	35,481	34,033	35,481	34,033

NOTE: Same as Table A11-1. Dummy: Variable that takes 1 if a demonstration occurs within 3 days after a football game. Count: Number of demonstrations within 3 days after a football game. Because the count variable is skewed (the maximum is 58 while more than 80% of the observations take 0), the estimates are imprecise without using logarithmic transformations. The results are similar when we use the differences (Δ) in the count variable or its logarithm.

Table A11-6. Results with the Lagged Dependent Variable Model

	Demonstrations	
Close loss	0.71*	
	(0.22)	
Close win		0.37
		(0.30)
N	35,481	34,033

NOTE: Same as Table A11-1. The model controls for the lagged dependent variables of past three days.

Table A11-7. Results with Matching on Betting Odds and Shots on Target

	ΔDemonstrations	
Close loss	0.57*	
	(0.23)	
Close win		0.37
		(0.24)
N	32,481	31,121

NOTE: Same as Table A11-1. After matching, the sample sizes become smaller. The data of shots on target is missing for the Champions League games.

Table A11-8. Results with All Games

	ΔDemonstrations	
Close loss	0.50^{*}	
	(0.19)	
Close win		0.17
		(0.19)
N	$47{,}810$	$46{,}891$

NOTE: Same as Table A11-1. The samples include both close and non-close games (after matching).

Table A11-9. Results without Matching

	ΔDemonstrations	
Close loss	0.62^{*}	
	(0.18)	
Close win		0.51^{*}
		(0.25)
N	$43{,}984$	$43{,}084$

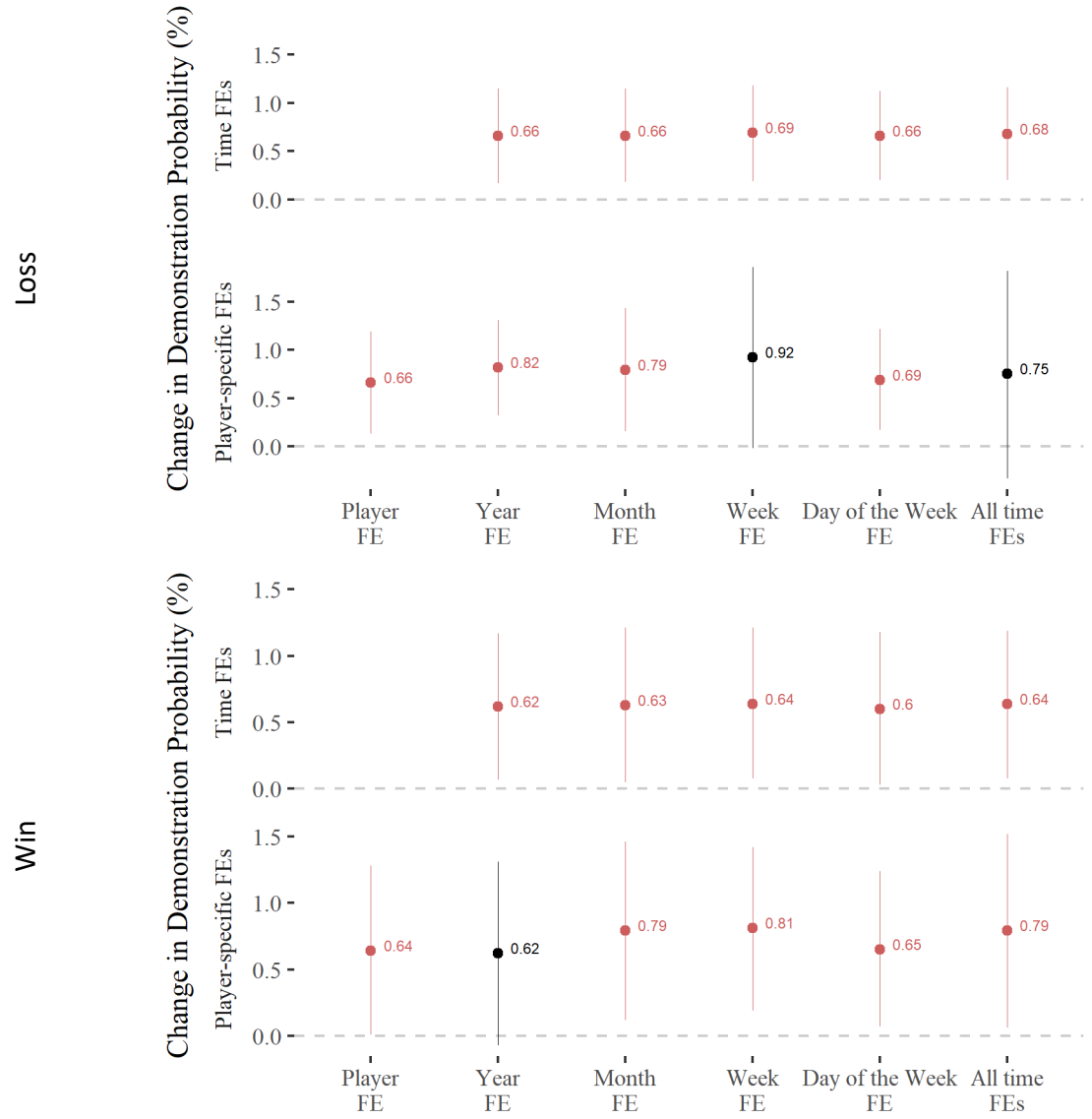
NOTE: Same as Table A11-1.

Table A11-10. Results with Control Variables

	ΔDemonstrations	
Close loss	0.61^{*}	
	(0.19)	
Close win		$0.41^{\dagger}$
		(0.24)
N	$43{,}984$	$43{,}084$

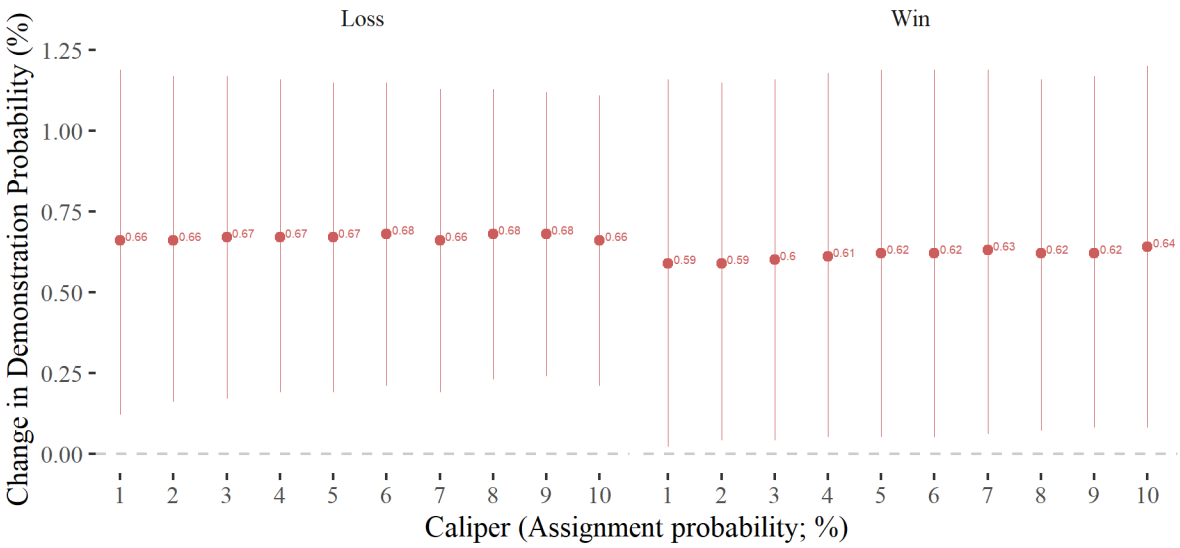
NOTE: Same as Table A11-1. The model includes the controls for an African player's goals, assists, yellow cards, red cards (dummies), and the inverse of betting odds (%).

Figure A11-1. Results with Fixed Effects



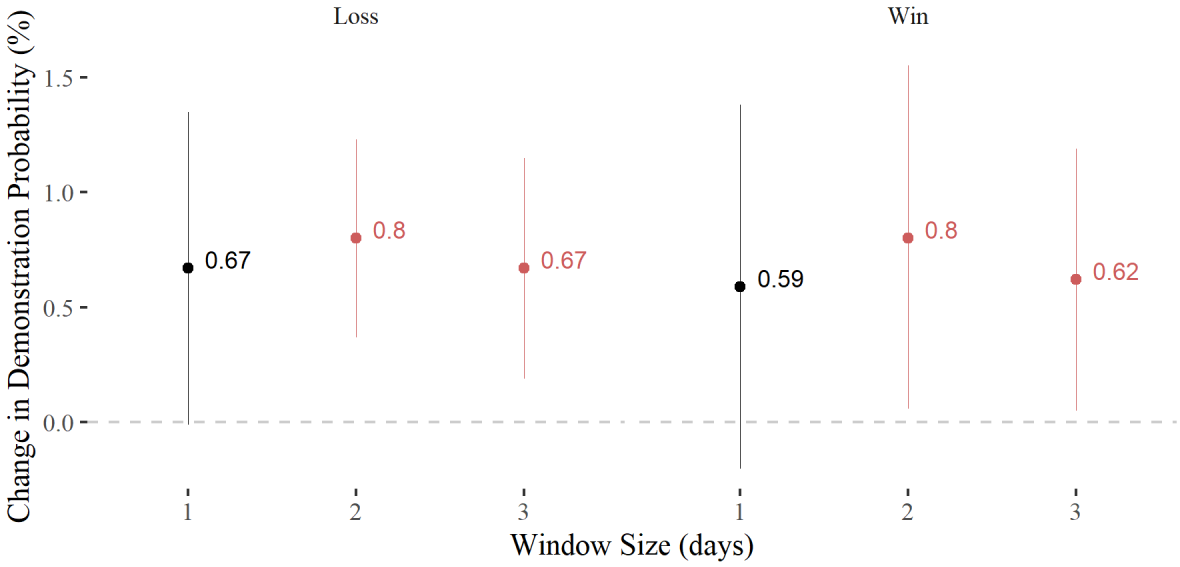
NOTE: The vertical bars are the 95% confidence intervals.

Figure A11-2. Results with Different Caliper Sizes



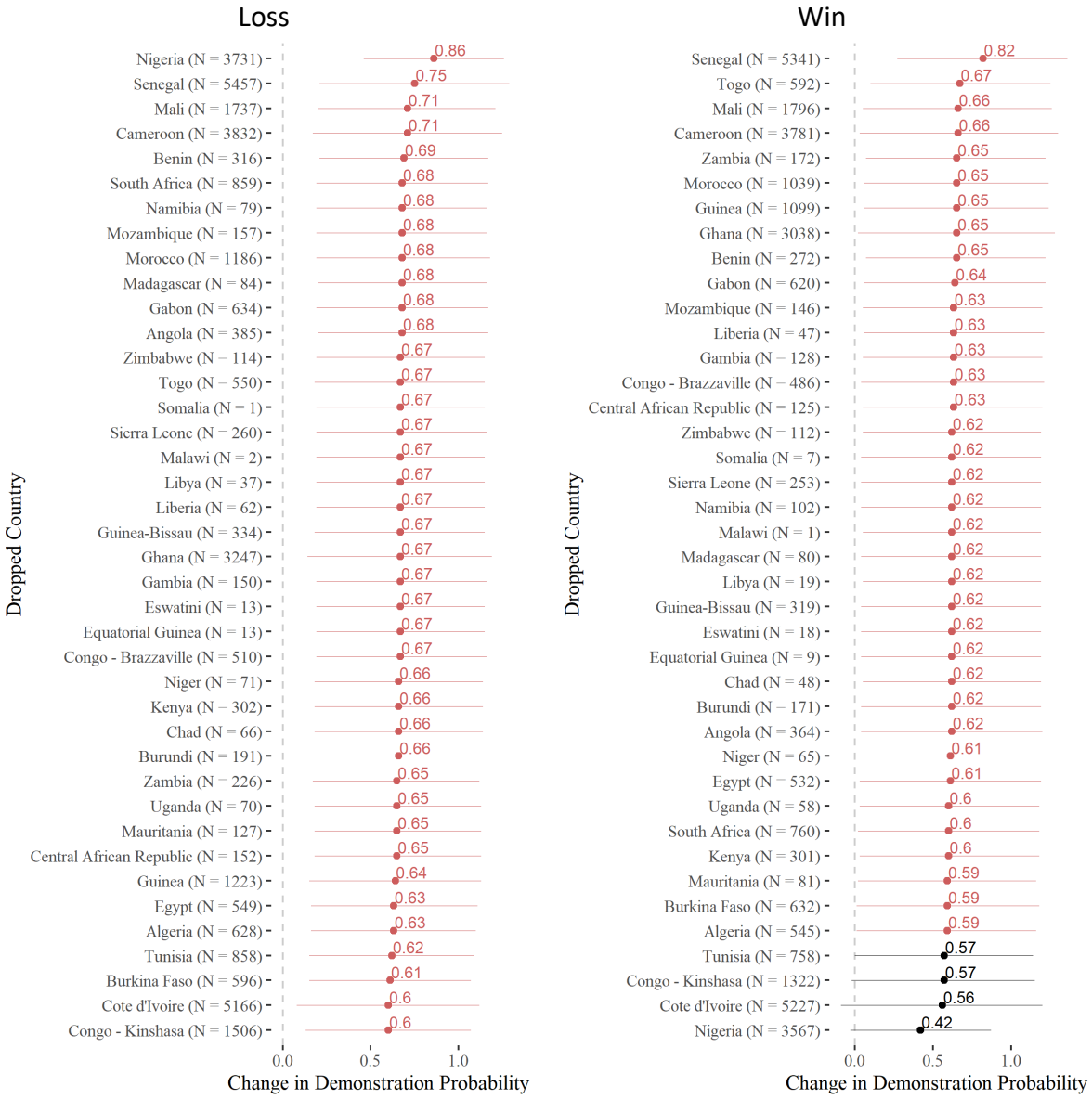
NOTE: The vertical bars are the 95% confidence intervals.

Figure A11-3. Results with Different Times Windows



NOTE: The vertical bars are the 95% confidence intervals.

Figure A11-4. Results of the Leave-one-country-out Tests



NOTE: The figure shows the effects when each country is dropped from a sample. The horizontal bars are the 95% confidence intervals.

A12. Survey Analysis: Summary Statistics

Table A12-1. Summary Statistics (Close Losses and Draws)

Variable	Mean	S.D.	Min.	Max.	N
Close loss (dummy)	0.48	0.50	0.00	1.00	10,398
Interviewed after a football game (dummy)	0.47	0.50	0.00	1.00	10,398
Assignment probability (%)	57.1	11.0	37.0	85.4	10,398
Trust (leader)	5.33	3.97	0.00	10.0	10,097
Trust (MPs)	4.82	3.66	0.00	10.0	9,962
Trust (local council)	4.53	3.63	0.00	10.0	9,924
Trust (ruling parties)	4.47	3.79	0.00	10.0	9,992
Trust (opp. parties)	3.89	3.50	0.00	10.0	9,879
Trust (police)	4.98	3.73	0.00	10.0	10,175
Trust (army)	6.43	3.62	0.00	10.0	9,326
Trust (court)	5.51	3.59	0.00	10.0	9,991
Performance (leader)	5.25	3.52	0.00	10.0	9,892
Performance (MPs)	4.58	3.15	0.00	10.0	9,305
Performance (local council)	4.51	3.16	0.00	10.0	9,337
Overall mood	9.08	1.64	0.00	10.0	10,397
Friendly	9.49	1.61	0.00	10.0	10,396
Interested	9.09	2.13	0.00	10.0	10,395
Cooperative	9.27	1.94	0.00	10.0	10,397
Patient	8.97	2.34	0.00	10.0	10,397
At ease	8.74	2.65	0.00	10.0	10,396
Honest	8.93	2.32	0.00	10.0	10,395
National identity	6.93	3.08	0.00	10.0	8,177
Age	37.1	14.3	18.0	100	10,348
Female (dummy)	0.50	0.50	0.00	1.00	10,398
Muslim (dummy)	0.28	0.45	0.00	1.00	10,327
Christian (dummy)	0.60	0.49	0.00	1.00	10,327
Primary education (dummy)	0.81	0.39	0.00	1.00	10,362
Employed (dummy)	0.32	0.47	0.00	1.00	10,354
No food	1.12	1.27	0.00	4.00	10,388
No water	1.12	1.38	0.00	4.00	10,390
No medical care	1.26	1.35	0.00	4.00	10,359
No cooking fuel	0.80	1.14	0.00	4.00	10,365
No cash	1.99	1.43	0.00	4.00	10,371
Future economy	5.50	3.35	0.00	10.0	9,424
Current economy	3.46	3.21	0.00	10.0	10,263
Past economy	4.38	2.83	0.00	10.0	10,247
Discuss politics	4.48	3.57	0.00	10.0	10,321
Raise issues	4.24	3.29	0.00	10.0	10,325
Contact (officials)	0.63	1.99	0.00	10.0	9,992
Contac (MPs)	0.46	1.70	0.00	10.0	9,996
Contact (parties)	0.58	1.91	0.00	10.0	9,216

NOTE: Age is truncated at 100.

Table A12-2. Summary Statistics (Close Wins and Draws)

Variable	Mean	S.D.	Min.	Max.	N
Close win (dummy)	0.43	0.50	0.00	1.00	9,410
Interviewed after a football game (dummy)	0.42	0.4928	0.0000	1.00	9,410
Assignment probability (%)	54.6	10.2	31.6	79.1	9,410
Trust (leader)	5.41	3.89	0.00	10.0	9,139
Trust (MPs)	4.79	3.59	0.00	10.0	8,971
Trust (local council)	4.40	3.51	0.00	10.0	8,923
Trust (ruling parties)	4.65	3.76	0.00	10.0	9,016
Trust (opp. parties)	3.78	3.39	0.00	10.0	8,869
Trust (police)	5.05	3.60	0.00	10.0	9,244
Trust (army)	6.79	3.47	0.00	10.0	8,377
Trust (court)	5.68	3.51	0.00	10.0	9,070
Performance (leader)	5.32	3.43	0.00	10.0	8,967
Performance (MPs)	4.66	3.05	0.00	10.0	8,433
Performance (local council)	4.43	3.07	0.00	10.0	8,091
Overall mood	8.96	1.72	0.00	10.0	9,408
Friendly	9.43	1.70	0.00	10.0	9,407
Interested	8.98	2.24	0.00	10.0	9,406
Cooperative	9.13	2.09	0.00	10.0	9,408
Patient	8.77	2.50	0.00	10.0	9,408
At ease	8.58	2.74	0.00	10.0	9,407
Honest	8.88	2.33	0.00	10.0	9,407
National identity	7.01	3.03	0.00	10.0	7,345
Age	37.6	14.6	18.0	100	9,359
Female (dummy)	0.50	0.50	0.00	1.00	9,410
Muslim (dummy)	0.37	0.48	0.00	1.00	9,320
Christian (dummy)	0.54	0.50	0.00	1.00	9,320
Primary education (dummy)	0.83	0.38	0.00	1.00	9,379
Employed (dummy)	0.35	0.48	0.00	1.00	9,384
No food	0.90	1.17	0.00	4.00	9,404
No water	1.04	1.32	0.00	4.00	9,405
No medical care	1.07	1.28	0.00	4.00	9,389
No cooking fuel	0.73	1.08	0.00	4.00	9,381
No cash	1.67	1.46	0.00	4.00	9,390
Future economy	5.72	3.18	0.00	10.0	8,523
Current economy	3.70	3.26	0.00	10.0	9,266
Past economy	4.40	2.72	0.00	10.0	9,247
Discuss politics	4.54	3.48	0.00	10.0	9,342
Raise issues	3.83	3.25	0.00	10.0	9,354
Contact (officials)	0.63	1.96	0.00	10.0	9,345
Contac (MPs)	0.35	1.45	0.00	10.0	9,345
Contact (parties)	0.49	1.71	0.00	10.0	8,594

NOTE: Age is truncated at 100.

A13. Survey Analysis: Survey Questions

Table A13-1. Survey Questions

	Question	Items
Trust	How much do you trust each of the following, or haven't you heard enough about them to say: [politicians or officials]?	0: Not at all, 1: Just a little, 2: Somewhat, 3: A lot, NA: Don't know/Haven't heard enough, Refused to answer, Missing.
Evaluation	Do you approve or disapprove of the way the following people have performed their jobs over the past twelve months, or haven't you heard enough about them to say: [politicians]?	1: Strongly disapprove, 2: Disapprove, 3: Approve, 4: Strongly approve, NA: Don't know/Haven't heard enough, Refused to answer, Missing.
Mood	What was the respondent's attitude toward you during the interview: [attitude]?	1: No, 2: In between, 3: Yes, NA: Missing.
Identity	Let us suppose that you had to choose between being a [nationality] and being a [ethnic group]. Which of the following best expresses your feelings?	1: I feel only [ethnic group], 2: I feel more [ethnic group] than [nationality], 3: I feel equally [nationality] and [ethnic group], 4: I feel more [nationality] than [ethnic group], 5: I feel only [nationality], NA: Not applicable, Don't know, Refused to answer, Missing.
Welfare	In general, how would you describe: The present economic condition of this country?	1: Very bad / Much worse, 2: Fairly bad / Worse, 3: Neither good nor bad / Same, 4: Fairly good /Better, 5: Very good / Much better, NA: Don't know, Refused to answer, Missing.
	Looking back, how do you rate economic conditions in this country compared to twelve months ago?	
	Looking ahead, do you expect economic conditions in this country to be better or worse in twelve months?	
Social interaction	When you get together with your friends or family, would you say you discuss political matters?	0: Never, 1: Occasionally, 2: Frequently, NA: Don't know, Refused to answer, Missing.
	[P]lease tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Got together with others to raise an issue?	0: No, would never do this, 1: No, but would do if had the chance, 2: Yes, once or twice, 3: Yes, several times, 4: Yes, often, NA: Don't know, Refused to answer, Missing.
	During the past year, how often have you contacted any of the following persons about some important problem or to give them your views: [politicians or officials]?	0: Never, 1: Only once, 2: A few times, 3: Often, NA: Don't know, Refused to answer, Missing.

NOTE: The item about the trust on the army is not available for the fourth round of Afrobarometer. The item names differ across the rounds of Afrobarometer. All of the items are rescaled to 0-10.

A14. Survey Analysis: Detailed Tables of the Main Results

Table A14-1. Effects of Close Losses

			Trust				
Leader	MPs	Local councils	Ruling parties	Opp. parties	Police	Army	Court
-1.20^{*}	-0.81^{*}	-0.48^{*}	-0.72^{*}	-0.11	-0.28	0.08	-0.36^{*}
(0.31)	(0.28)	(0.16)	(0.31)	(0.17)	(0.29)	(0.30)	(0.15)
10,097	9,962	9,924	9,992	9,879	10,175	9,326	9,991

	Performance	
Leader	MPs	Local councils
-1.06^{*}	-0.59^{*}	-0.41^{*}
(0.20)	(0.16)	(0.17)
9,892	9,305	9,337

			Mood & Identity				
Overall mood	Friendly	Interested	Cooperative	Patient	At ease	Honest	National identity
-0.10	0.05	-0.13	$-0.19^{\dagger}$	-0.17	-0.16	0.03	0.30
(0.11)	(0.09)	(0.13)	(0.09)	(0.15)	(0.23)	(0.16)	(0.18)
10,397	10,396	10,395	10,397	10,397	10,396	10,395	8,177

NOTE: The coefficient estimates and corresponding standard errors in parentheses. The standard errors are two-way clustered by country and game. $* \; p < 0.05$; $\dagger \; p < 0.10$ (adjusted for false discovery rates).

Table A14-2. Effects of Close Wins

			Trust				
Leader	MPs	Local councils	Ruling parties	Opp. parties	Police	Army	Court
-0.28	-0.13	0.01	0.22	0.06	0.31	0.01	-0.04
(0.21)	(0.26)	(0.26)	(0.30)	(0.12)	(0.23)	(0.22)	(0.27)
9,139	8,971	8,923	9,016	8,869	9,244	8,377	9,070

	Performance	
Leader	MPs	Local councils
-0.05	0.44	0.10
(0.18)	(0.18)	(0.25)
8,967	8,433	8,091

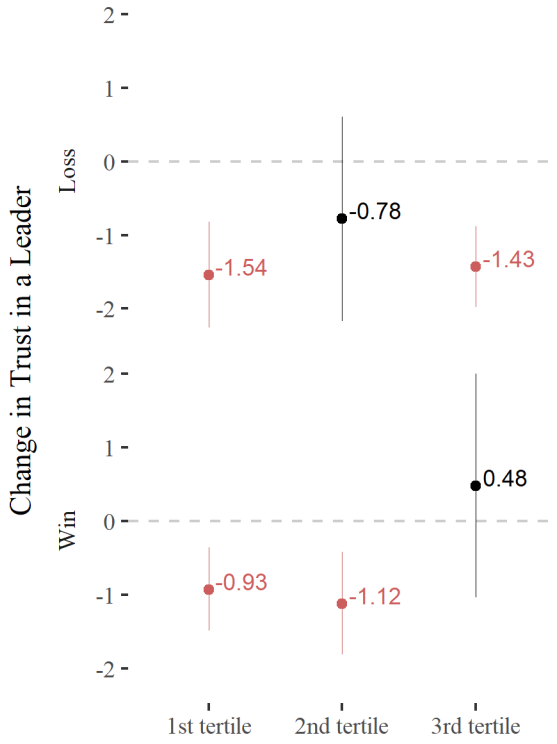
			Mood & Identity				
Overall mood	Friendly	Interested	Cooperative	Patient	At ease	Honest	National identity
0.16	0.23	0.19	0.03	-0.04	0.40	0.16	0.55
(0.18)	(0.15)	(0.17)	(0.13)	(0.26)	(0.31)	(0.24)	(0.37)
9,408	9,407	9,406	9,408	9,408	9,407	9,407	7,345

NOTE: Same as Table A14-1.

A15. Survey Analysis: Reference Dependence

Similar to the event data analysis (Appendix A9), we also analyze the effects by different terciles of the observed treatment assignment probabilities. Figure A15-1 also indicates results that are not consistent with reference dependence; the effects of losing games have non-linear trends, while the effects of winning are larger for unexpected victories. However, these results must be taken with caution; the pre-game betting odds are a control variable, which may or may not be exogenous, and thus the conditional effects can be under-identified.

Figure A15-1. Effect Heterogeneity by Pre-game Expectations

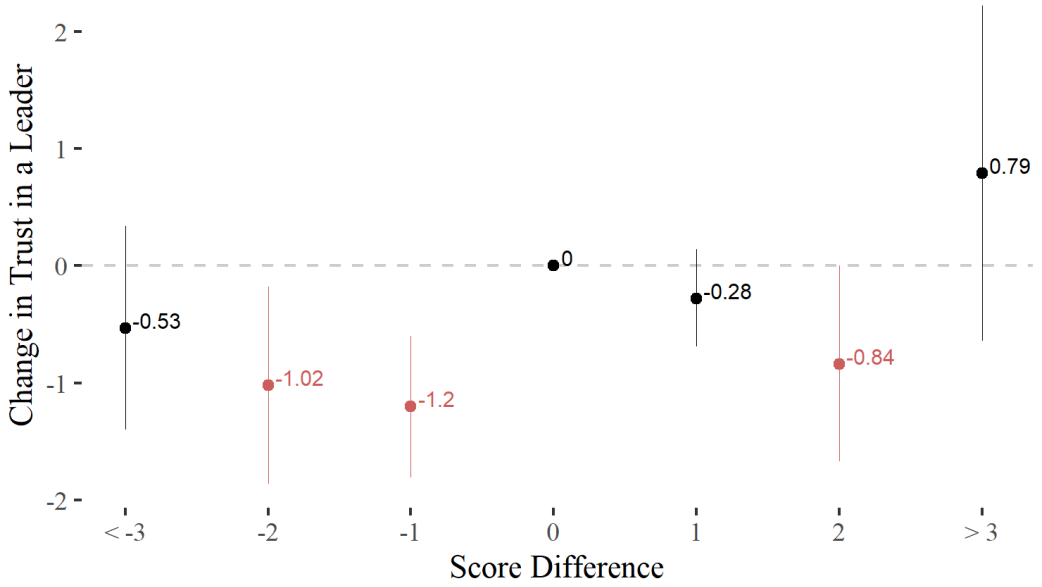


NOTE: The vertical bars are the 95% confidence intervals.

We also analyze the effect heterogeneity by margins of losses and wins. By using all games (including both close and non-close games), we separately estimate the effects of each margin of

losses or wins. Figure A15-1 indicates that the effects are larger in close games, casting another doubt on the reference dependence.

Figure A15-2. Effect Heterogeneity by Margins of Losses and Wins



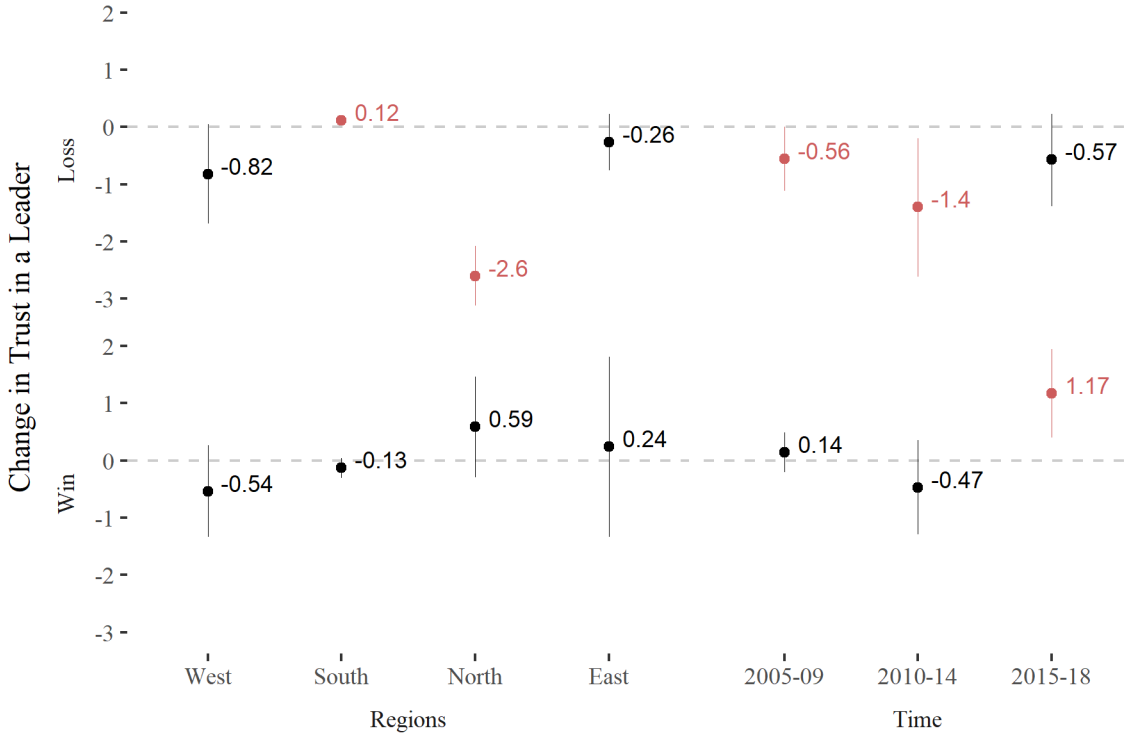
NOTE: The vertical bars are the 95% confidence intervals. The sample includes non-close games as well.

A16. Survey Analysis: Effects by Regions and Time

Because the subsample analyses by leagues are not feasible due to small sample sizes, we report the results by region and time (Figure A16-1). The effect heterogeneity by geographical regions follows a pattern similar to that in the event data analysis (see Appendix A10); the effects of close losses are negative except for Southern Africa, though the estimates are less precise due to smaller sample sizes. This may imply the heterogeneity of Southern Africa, in which alternative sports, such as cricket and rugby, are also popular. Turning into the temporal heterogeneity, there is no clear tendency; the effect of close losses is pronounced for the 2010-2014 period, though the point estimates are negative for all periods. By contrast, the effects of close victories are less consistent and even positive for the 2015-2019 period. These results may reflect the fact there are relatively few observations for the 2015-19 period and hence the sub-sample analysis is subject to small-

sample biases. In fact, the sample sizes of the barely losing and draw are 1,439 for 2005-09, 6,197 for 2010-14, and 2,864 for 2015-19.

Figure A16-1. Effects by Regions and Time



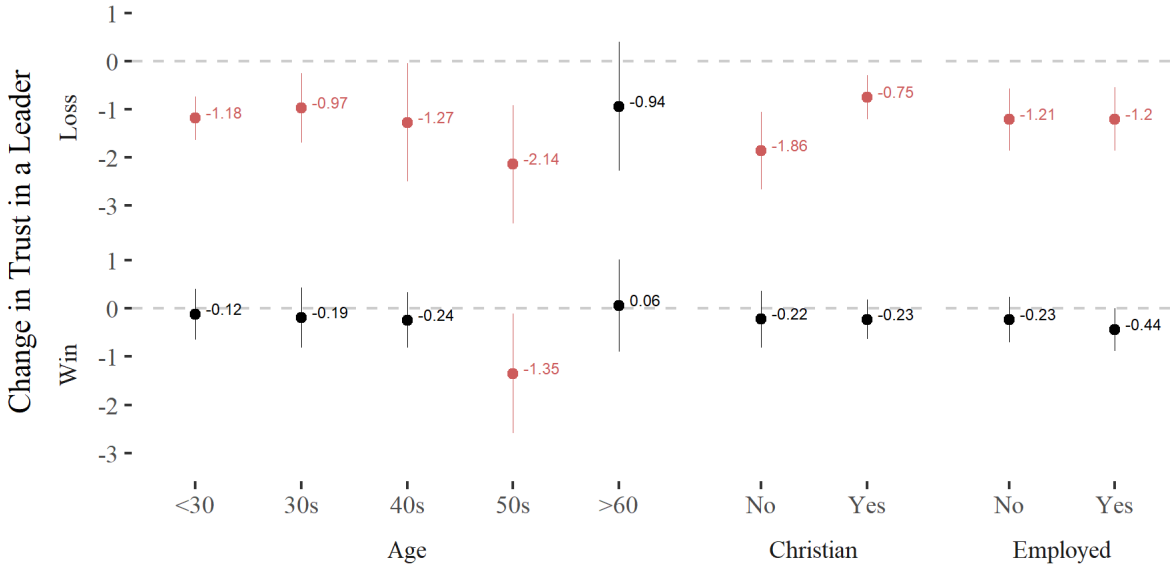
NOTE: The figure shows the effects by geographical regions (left) and time (right). The vertical bars are the 95% confidence intervals. Due to the small sample size, Middle Africa is merged to East Africa.

A17. Survey Analysis: Effect Heterogeneity by Other Covariates

Figure A17-1 shows the effect heterogeneity by other less relevant covariates, which are omitted from the manuscript due to the word limit. Although the effects of close losses are negative and mostly similar to the main estimate regardless of age groups (though the estimates are less precise due to the reduced sample sizes), the effects tend to be large for the 50s. The effects also tend to be large for non-Christians. Christians are concentrated in South Africa, in which other sports are also popular and hence the effect tends to be smaller (see Appendix A16). There is no discernible heterogeneity by employment status. These results, however, must be taken with caution, for the

covariates may correlate with confounders and thus the conditioning effects are not rigorously identified.

Figure A17-1. Effect Heterogeneity by Other Demographic Covariates



NOTE: The vertical bars are the 95% confidence intervals.

A18. Survey Analysis: Robustness Checks

The results of the survey analysis are robust to the analysis based on players' citizenships (Table A18-1),[16] omission of football games without African players' appearance (Table A18-2), omission of cases where there are both close losses and wins on the same day for a respondent (Table A18-3),[17] aggregation to a respondent-game level (Table A18-4), inclusion of non-close

[16] The outcome is the daily probability of protests in a country of a player's citizenship. If a player has multiple citizenships of African countries, each pair of a player and citizenship is treated as a separate observation. The standard errors are clustered by countries to account for the duplication.

[17] If there are multiple games on the same day for a given respondent, and if there are both close losses and wins among those games, the corresponding observations are dropped from the analysis

games (Table A18-5), matching on pre-game betting odds (Table A18-6), control for demographic covariates, player performance, and the inverse of betting odds (Table A18-7), control for the linear and quadratic terms of the running variable (days from/to a football game; Table A18-8), inclusion of time fixed effects (Figure A18-1), different time windows (Figure A18-2), and omission of countries (Figure A18-3).

The only exception is the inclusion of player-specific fixed effects (Figure A18-1). As we explain in the manuscript, this is due to overfitting. The sample contains only 27 football games, and only four games are played by the same players. This means that there exists only tiny within-player variation in the treatment variable, and hence the estimates suffer from overfitting with the player-specific fixed effects. In fact, when we include all player-specific time fixed effects (bottom right corner of each pane, Figure A18-1), we cannot even estimate the coefficients due to multicollinearity.

Table A18-1. Results Based on Players' Citizenships

	Trust (leader)	
Close loss	-1.07^{*}	
	(0.51)	
Close win		-0.17
		(0.46)
N	9,360	8,935

NOTE: The coefficient estimates and corresponding standard errors in parentheses. The standard errors are two-way clustered by country and game. $* \, p < 0.05$; $\dagger \, p < 0.10$.

Table A18-2. Results by African Players' Appearances

	Trust (leader)			
	Games of African players' appearances		Games w/o African players' appearances	
Close loss	-0.96^{*}		-0.95	
	(0.42)		(0.67)	
Close win		0.09		-0.23
		(0.16)		(0.56)
N	5,709	4,755	4,388	4,384

NOTE: Same as Table A18-1.

Table A18-3. Results with the Omission of Simultaneous Losses and Wins

	Trust (leader)	
Close loss	-1.24^{*}	
	(0.34)	
Close win		-0.23
		(0.25)
N	9,267	8,309

NOTE: Same as Table A18-1.

Table A18-4. Results with Aggregation to a Respondent-game Level

	Trust (leader)	
Close loss	-1.15^{*}	
	(0.28)	
Close win		-0.22
		(0.23)
N	9,835	8,877

NOTE: Same as Table A18-1.

Table A18-5. Results with All Games

	Trust (leader)	
Close loss	-1.01^{*}	
	(0.32)	
Close win		-0.53^{*}
		(0.26)
N	14,219	13,307

NOTE: Same as Table A18-1. The samples include both close and non-close games.

Table A18-6. Results with Matching on Betting Odds

	Trust (leader)	
Close loss	-1.20^{*}	
	(0.39)	
Close win		-0.52^{*}
		(0.15)
N	4,724	7,485

NOTE: Same as Table A18-1. After matching, the sample sizes become smaller.

Table A18-7. Results with Control Variables

	Trust (leader)	
Close loss	-1.11^{*}	
	(0.24)	
Close win		-0.31
		(0.20)
N	9,846	8,904

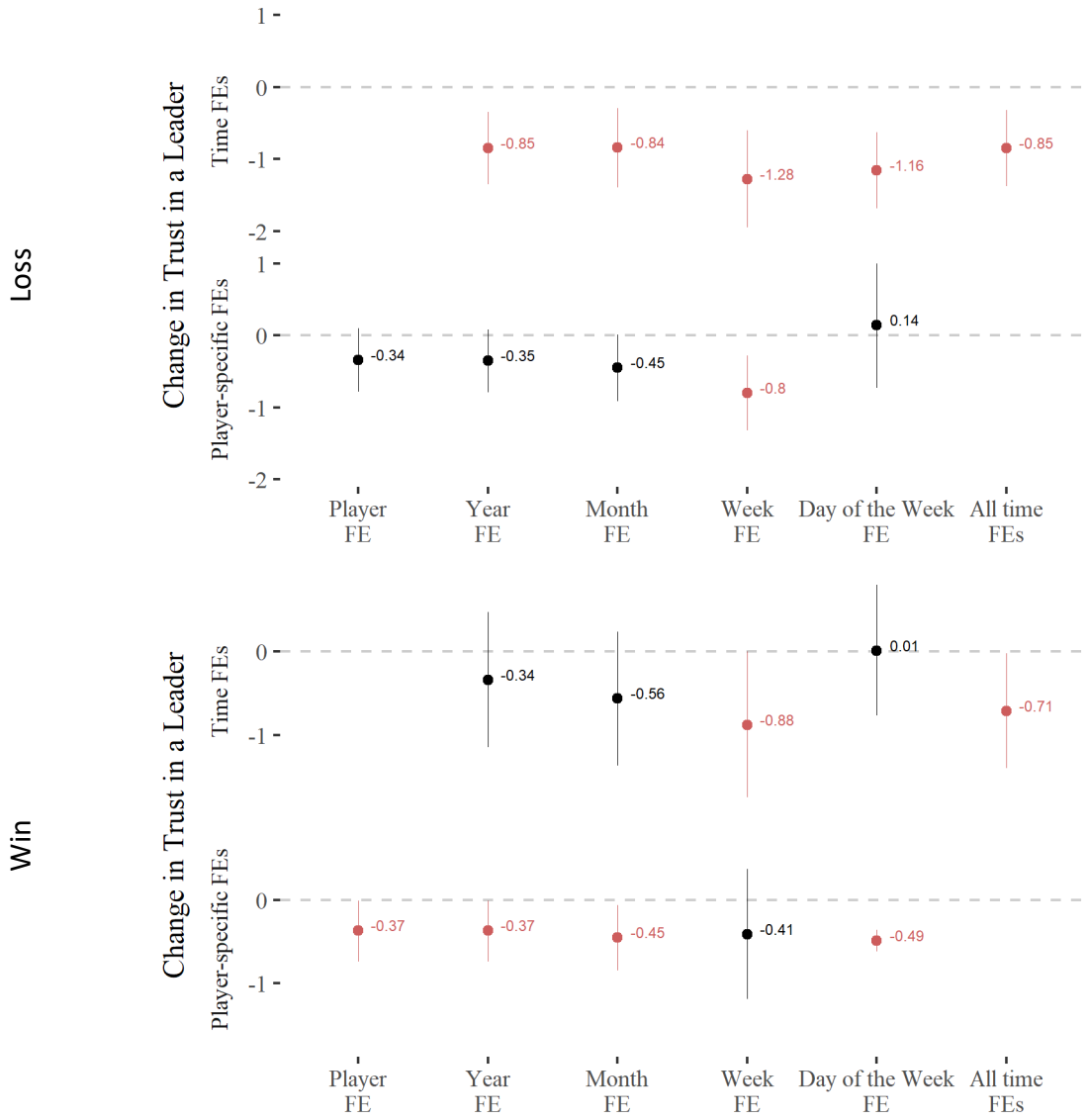
NOTE: Same as Table A18-1. Control variables: Eleven demographic covariates appearing in Table A12-1 and Table A12-2, African players' goals, assists, yellow cards, red cards (dummies), and the inverse of betting odds (%).

Table A18-8. Results with Control for the Running Variable

	Trust (leader)			
Close loss	-1.20^{*}		-1.21^{*}	
	(0.32)		(0.34)	
Close win		-0.28		-0.23
		(0.21)		(0.21)
Polynomial order	1	1	2	2
N	10,097	9,139	10,097	9,139

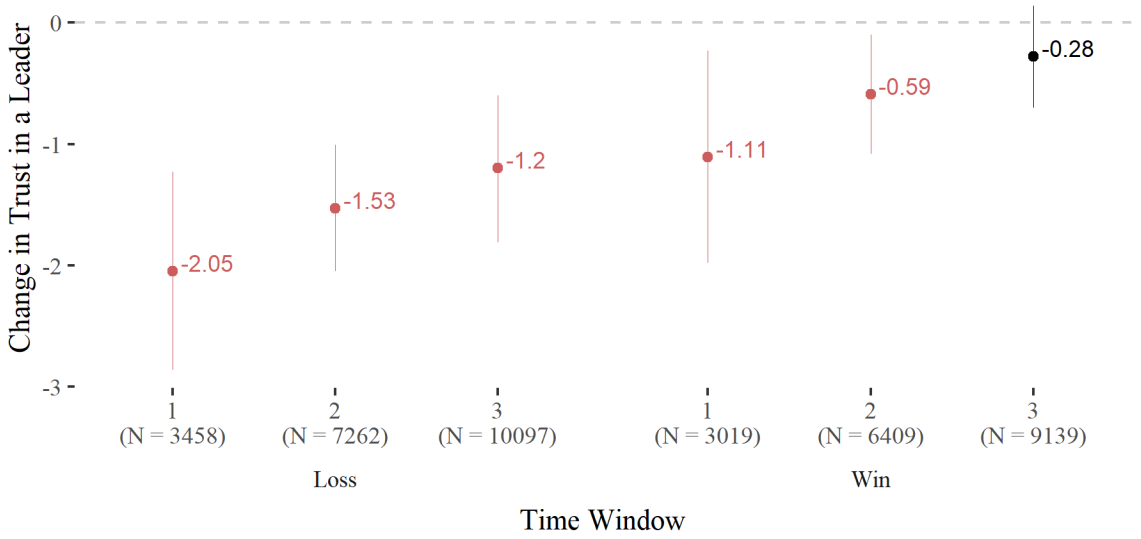
NOTE: Same as Table A18-1. The model includes the running variable and its polynomials.

Figure A18-1. Results with Fixed Effects



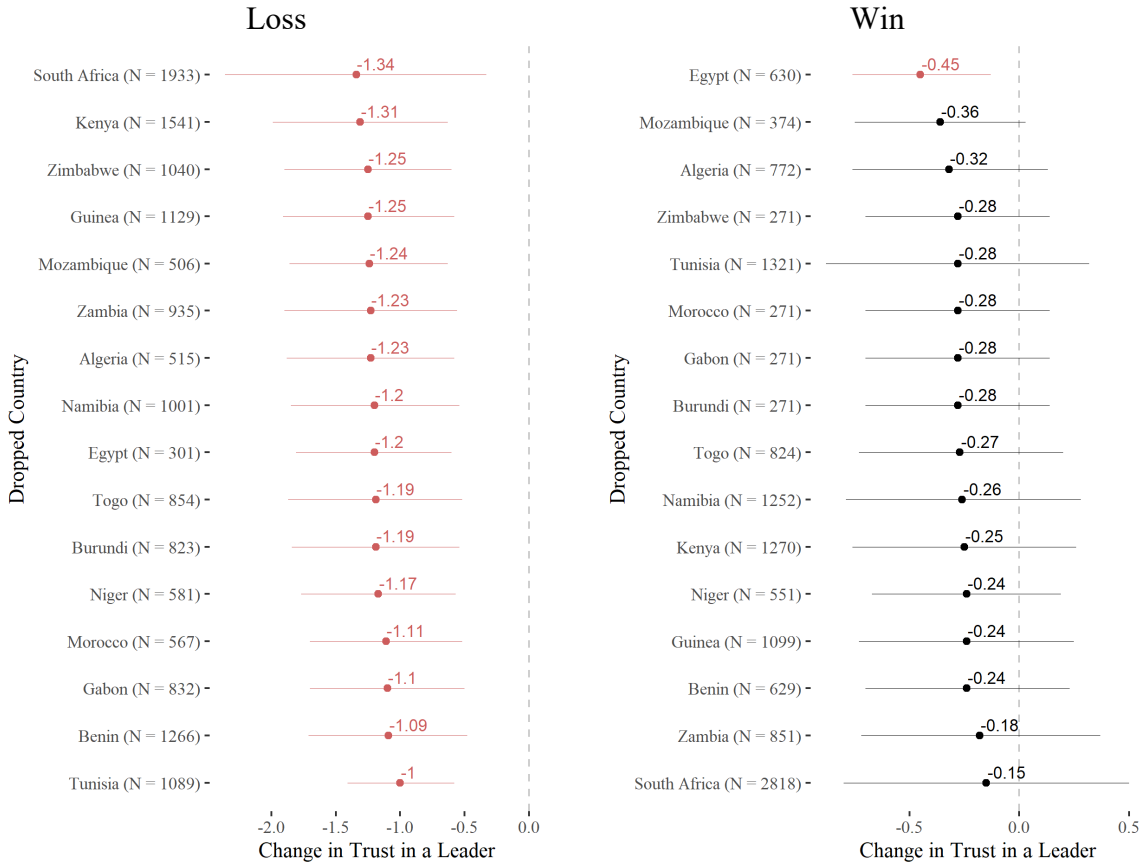
NOTE: The vertical bars are the 95% confidence intervals. The estimates with all player-specific time fixed effects are not displayed as they are not identifiable due to multicollinearity.

Figure A18-2. Results with Different Time Windows



NOTE: The figure shows the effects with time windows of 1 to 3 days. The vertical bars are the 95% confidence intervals.

Figure A18-3. Results of the Leave-one-country-out Tests



NOTE: The figure shows the effects when each country is dropped from a sample. The horizontal bars are the 95% confidence intervals.

References

Card, David, and Gordon B. Dahl. 2011. "Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior." *The Quarterly Journal of Economics* 126 (1): 103–43.

Depetris-Chauvin, Emilio, Ruben Durante, and Filipe Campante. 2020. "Building Nations through Shared Experiences: Evidence from African Football." *American Economic Review* 110 (5): 1572–1602.

Google. 2022. "Google Trends." https://trends.google.com/trends (accessed on 2022-05-17 and 2022-05-17).

Imai, Kosuke, and In Song Kim. 2019. “When Should We Use Unit Fixed Effects Regression Models for Causal Inference with Longitudinal Data?” *American Journal of Political Science* 63 (2): 467–90.

King, Gary, and Richard Nielsen. 2019. “Why Propensity Scores Should Not Be Used for Matching.” *Political Analysis* 27 (4): 435–54.

Kőszegi, Botond, and Matthew Rabin. 2006. “A Model of Reference-Dependent Preferences.” *The Quarterly Journal of Economics* 121 (4): 1133–65.

Wongsuphasawat, Krist. 2015. “Premier League: Where Are Your Club’s Followers?” https://interactive.twitter.com/premierleague/ (accessed on 2021-02-21).