

*Hic Sunt Leones!*  
National identity and football aggression

Raul Caruso

Catholic University of the Sacred Heart, Milan, Italy

Marco Di Domizio

University of Teramo, Faculty of Political Sciences, Italy

David A. Savage

Bond University, Faculty of Economics and Statistics, Australia.

**ABSTRACT**

This paper examines the role of national identity in explaining on field aggression during soccer competitions between national teams. In particular, this paper empirically investigates whether differences in macro identity markers such as: the economy, religion, education, governance and power between nation-states influence football players' aggressiveness across a range of international FIFA competitions. We analyse the finals of the FIFA World, Confederations and Under 20's World Cups as well as the Olympic tournaments from 1994 to 2012, resulting in 1088 individual matches. Our aggression focus is derived from both the (i) weighted measure of penalties (red and yellow cards) and; (ii) the count of sanctions (fouls) issued during a game as a proxy measure for on field aggression. We generate national identity factors from a set of macro level variables in order to estimate the size of national differences, from which we determine the impact that national identity has on the emergence of on field aggression between rival countries. Our results show that these national identity factors are significant predictors of aggression, while the match specific variables seem to be of less importance. It would appear that the football pitch is perceived as an opportunity to redress any differences of imbalance of power between nations. Interestingly, our results also show that these aggression factors disappear once we include referee fixed effects, indicating that while national differences are played out on the football pitch the referees are effective at controlling the aggression.

**Keywords:** Football (soccer) tournaments; penalties; international relations; UEFA and FIFA competitions, national identity, religion, governance, power.

**JEL Classifications:** D71, D74, L83; F51; F61

## INTRODUCTION

When we trace the journey of mankind's social evolution, we observe a history of wild aggression and violence that, over time, became civil and constrained enough for cooperation. However, we must remember that the aggression and violence played a crucial part in our survival, as it allowed our ancestors to survive in a world in which they were both the predator and the prey. These finely honed survival instincts were used by early humans to you keep what was your and to take what wasn't. Population growth and social enlightenment enabled us to live in larger and larger groups, which included more individuals not directly related to us (e.g. kin selection). One of the reasons for this success may have been the ability to harness our aggressive drives and refocus them, restricting them into a socially acceptable form of violence, sport. For surely has our social evolution developed in parallel with our ability to harness sport as an aggression outlet has us.

History acknowledges our celebration of the gruesome and bloody spectacle of death sports. Where we once crowded into coliseums with thousands of our fellow citizens, to watch gladiators kill opponents (not all willing or even human) and in an adrenaline-fuelled frenzy we screamed our approval. We cheered as the Christians were fed to the lions and the sand soaked up the rivers of blood that poured from bodies of slaves and enemies of the state. We held grand tourneys of colour, pomp and ceremony, steeped in all the chivalry and nobility of the age. Where men encased in massive steel armour riding trained warhorses charged each other along the lists, while the crowd cheered and the "ladies" swooned at the display of bravery. We had created a sport out of the actions of war, where the object was to unseat your opponent with a blunted war lance, while maintaining your own seat on your charger, the result of which was often death or disability. As we became more civilised and such overt displays were frowned upon, we gathered in dark alleys and back rooms placing wagers as two men attempting to break each other's spirit and bodies with their bare knuckles. Contests that usually only stopped when one man was no longer able to stand, death often being one such reason. Over time, our sporting contests have become less violent, resulting in fewer deaths, i.e. we have codified and regulated the violence so it is acceptable to our modern value of life. We have also managed to codify war, with agreements such as the Geneva Convention and Rules of Engagement. Although, we have come such a long way in our codification of aggression and violence we have not managed to eliminated war or other such grand scale killing (terrorism). However, we have replaced the casual outbreaks of violence, disagreements and duels.

It is through this systemic codification that has made sport the socially acceptable outlet for violence and aggression. We have now got so many options and codes that we have achieved almost perfect discrimination, such that there is a sport to suit every level of violence. Additionally, we see the on mass support of sporting teams, which has the effect of returning us to a primal, almost tribal state. Supporters proudly show allegiances through the wearing of team colours and gather in groups of like-minded individuals, displaying proto-kin type group behaviours (protection). The nationalised sporting team has taken this one step further and allowed entire nations to be able to re-identify with a single set of sporting colours. It could be argued that these teams become surrogates

vessels for national identity; we hold them up as the physical embodiment of everything that our nation stands for. We glory in the victories and suffer in the defeats. As such international sporting matches provides excellent opportunities for the satisfaction of real or perceived slights against other. But not only is sport a perfect vehicle for such, we actively set matches up as such to make matches more intense and exciting. Matches against the ‘old enemy’ or the ‘bitter rival’ the national ‘sibling’ or the former ‘colonial masters’ the reason that conflict spills over into sporting contests is quite often a result of who we are (i.e. identity).

Few would disagree that football (soccer) is the most universally followed and played sport in the world. It is played at all levels, from street matches to stadiums filled with tens if not hundreds of thousands of spectators and telecast to millions around the globe. The pinnacle of this sport is the FIFA World Cup, and to a lesser extend Euro Cup, tournament, these are truly international events, held on the grandest of stages, nation against nation for pride and glory. One could argue that these events are ‘merely’ sporting events and not taken all that seriously. As an example of how serious this is taken in some circles, Columbian defender Andrés Escobar Saldarriaga was assassinated after the 1994 World Cup. It was speculated that he was killed for his role in the loss to the USA, where he scored an own goal, needless to say that there has been a long history of tension between Columbia and the US DEA, But what about on the field, do we observe national differences being played out on the pitch during international fixtures?

In this paper we investigate whether national identity has an impact on player behaviour on the soccer pitch. Specifically, does national identity translate into aggressive behaviour of individuals in international sport tournaments involving national teams? In an attempt to understand these questions we focus on the relationship between national identity and aggressive behaviour on the soccer pitch, as observed in international FIFA tournaments from 1994 to 2012, which includes the World and Under 20’s and Confederation Cups and Olympic tournaments.

## SPORT AND VIOLENCE

Violence and sport are often intertwined. Sport involves threat, coercion, aggressive behaviour and extreme competition and such intertwining also shape both formal and informal institutions. Consider some examples drawn from history. Since the end of World War II, the Soviet bloc organised their sport system through security and armed forces. Most sport heroes were soldiers or police officers and sport was designed as a control on society (Cooper, 1989; Howell, 1975; Riordan, 1993). Furthermore, sport was also interpreted as ancillary to foreign policy, as success in sport was intended to support USSR and other socialist countries in gaining international prestige (Riordan, 1974). Even in the midst of warfare, sport can break out. On Christmas Day 1914 (WWI), English and German forces agreed to a temporary truce and ceased hostilities. Individuals from both sides came together to sing hymns, exchange simple gifts (food) and to play soccer. On the day before and the day after they were actively trying to kill each other, but on that day, on a soc-

cer field, pitched in the no man's land between trenches, they came together through sport<sup>1</sup>.

Elias and Dunning (1986) considered the soccer match as the stylisation of a war and this approach has been consequently used to interpret violent off-pitch phenomena such as hooliganism (Caruso & Di Domizio, 2013; Leeson, Smith, & Snow, 2012). The role of violence in sport has been widely debated in the economic literature, particularly for soccer (Giulianotti et al., 1994). Emergence of violence in sport is consistent with the multi-shaped interpretation of sport as expounded in Caruso (2011):

*“... a joint indivisible good, which is produced and consumed by different agents at a certain place and time. It can have multiple shapes. In fact, it is a combination of: (i) a market good, (ii) a relational good and (iii) an expression of threat, power and coercion. All components differ in intensity, but differently from (i) and (iii) the relational component must be necessarily positive.”*

Bandura (1973) considered the violence as a consequence of the frustration generated by defeat, while Dunning (1999) explains that the aggressiveness associated to soccer matches is fundamental to masculinity, seen as territorial struggle and excitement. This is one of the reasons why sport is often considered an interesting outlet for political tensions or alternatively as a means of building trusts between rival countries (Jackson, 2013; Jung, 2013; Nygård & Gates, 2013). This has led to team-sports themselves becoming more commonly analysed in the light of national identity, as well as the individual teams and players. As is often the case with group interaction it creates a collective identity, when national teams compete with each other in high stakes international soccer tournaments it generates feelings of nationalism. It is this sense of nationalistic pride that led to off pitch violence by fans or 'hooliganism'.

Hooliganism was thought to have started in the United Kingdom and has spread to almost all European countries (Spaaij, 2008). A considerable volume of research has incorporated actions of hooligans in a framework of rational behaviour in order to identify the optimal counter strategy to be implemented by governments and their results (Domizio & Caruso, 2014; Poutvaara & Priks, 2009) (Marie, 2011). However, with respect to the violence on the soccer pitch, only recently have researchers begun to empirically disentangle the effect of culture, institutions and poverty in determining violent behaviour of players. Miguel, Saiegh, and Satyanath (2008) analysis supports the idea that the national culture and identity influence, showing a strong relationship between the history of civil conflict and violent behaviour (number of cards issued). Cuesta and Bohórquez (2012) present different results in their empirical investigation on Latin America national teams competition (Copa Libertadores). They show that the violent behaviour of players depends exclusively on soccer characteristics, and that their nationality is not significant as far as their violent behaviour on the pitch is concerned.

---

<sup>1</sup>The anecdotal story states that the English won the match 3-2, which was the first time that the English beat the Germans, the only other time this occurred during a non-friendly was the contentious win during the 1966 World Cup.

It is evident that violence and aggression do not need to take the large-scale shape of actual wars or rebellions. It is clear that the sports environment is very close to an experimental environment. This was neatly summed up by (Goff & Tollison, 1990, pp. 6-7), who stated:

*“Sports events take place in a controlled environment, and generate outcomes that come very close to holding ‘other things equal’. In other words, athletic fields supply real-world laboratories for testing economic theories. The data supplied in these labs have some advantages over the data normally used in economic research ... The economist can perform controlled experiments similar to those performed by the physical and life scientists. Sports data afford a similar opportunity. Although the laboratory is a playing field, the data generated are very ‘clean’. Most external influences are regularly controlled by the rules of the game”.*

As such football matches can be seen as a natural environment where individuals will act according to their preferences without influence from any experimenter effects, which is ideal to seek explanations and answers to the impact of national identity on behaviour.

## IDENTITY

But what is national identity? (Smith, 1991, p. 14) in the book “National Identity” states that it is ‘complex constructs composed of a number of interrelated components – ethnic, cultural, territorial, economic and legal-political’. The pioneering work of Akerlof and Kranton (2000) showed the impact that identity has on economic life and may help in the understanding of destructive activities and violent behaviours of individuals. However, rather than looking at the individual level factors of identity, we look at the collective identity of a nation, such an identity function may be helpful in explaining international conflict and shows of aggression, especially within the frame of sport. In the same way that identity theory describes important traits, norms, behaviours and beliefs of a group, national identity examine some the more obvious macro factors, which could include: economic power, religion, government etc. While this could be considered a blunt instrument, it gives us a place to start (reference point). Ideally, one would include a measure of culture, but this is a difficult concept to pin down and even harder to conceive of a single variable measure. Conflict would likely arise when the perceived identity of a nation is at odds with that of another, e.g. in governance we observe the greatest distance between an open democracy and that of a dictatorial state (say North Korea and the USA). Religious identity would be similar, where the greatest distance would be that of a single state religion and a pluralistic society with open religious freedom.

We begin with Akerlof and Kranton (2000) identity framework, we change the focus and the parameters to investigate the macro factors involved in National Identity resulting in the following function:

$$Identity = f(g, e, m, a, r, c, p)$$

Where national identity is a function of Governance (g), Economic Power (e), Military Spending (m), Aggressiveness (a), Religious Freedom (r), Conflict (c) and Political Freedom (p). While this function is representative of the identity we do not know the true relationship of the function, as such we are only able to analyse the individual elements. This results in us being able to create a metric for each element and determining if the differential is a significant predictor of conflict within the confines of a soccer pitch. Furthermore, this function may also help us to understand the emergence of other destructive activities and violent behaviours. This is much in line with Basu (2005), who demonstrated that identity is indeed a source of conflict. Sen (2008) supports this view by discussing how the emergence of violence is not solely related to economic factors but must be interpreted with a view towards some components of identity (nationality, culture and religion). In line with this Murshed (2009) models the influence of identity within two forms of low intensity violence, i.e. civilizational or cultural conflict and sectarian violence. Our approach is to determine if a national identity are likely to shape a players behaviour on the pitch, not in its own right but when compared to that of the opponent.

## DATA AND METHODOLOGY

The period under investigation includes all final phase matches of the FIFA World Cup (308) and EURO Cup (155) from 1994-2012<sup>2</sup>, covering 60 national teams<sup>3</sup>. Specifically, we investigate players' aggressiveness efforts by means of two variables: (i) WINT a weighted measure of penalties per match and (ii) FOULS the count of fouls committed<sup>4</sup>. We include a set of independent control variables that are divided into four basic groups: (i) Tournament variables drawn from sport literature; (ii) Identity variables and (iii) Geographical and institutional (GeoInst) variables. From these variables we then estimate a regression equation, by means of negative binomial using maximum likelihood techniques. All the variables are discussed in the following sections and shown in Table 1.

### WINT & FOULS

The weighted measure of intensesness (WINT) has been calculated by using the weighted issuing of yellow and red cards through out a match as follows:

$$WINT = [1^{st}Yellow] + 2 \times [2^{nd}Yellow] + 3 \times [DirectRed] \quad (1)$$

<sup>2</sup>Full details on competitions appear in the Appendix in Table 1.

<sup>3</sup>We consider the team Yugoslavia (World Cup 2000) as for Serbia and Montenegro (World Cup 2006) and Serbia (World Cup 2010).

<sup>4</sup>Full match reports are provided by FIFA on the web in the statistic section of each competition and both can be retrieved from the following sources: <http://www.fifa.com/worldfootball/statisticsandrecords/index.html>.

The weighting process is used to distinguish a single direct red card, usually issued after a very violent foul, from the highest sanction issued as the sum of less violent fouls<sup>5</sup>.

Table 1  
*Descriptive Statistics*

Variable	Obs.	Mean	SD	Min	Max
WINT	1088	5.036	2.982	0	24
FOULS	464	32.222	8.611	131	62
Log Ranking Difference	1088	1.363	1.065	1	4.927
TPGI	1066	0.778	0.283	0	1
Education Imbalance	1073	0.297	0.235	0.001	0.943
Power Imbalance	1088	0.704	0.272	0	0.999
Armed Conflict	1088	1.279	0.668	0	2
Attendance ('000)	1088	30.464	22.686	0.5	110
Distance ('000)	1088	8.460	4.371	0.174	19.877
Religious Difference	866	8.645	6.520	0	32
Governance Difference	1088	3.746	3.283	0	12
Corruption Difference	686	2.524	1.736	0	8.1
Same Religion	1088	0.262	0.440	0	1

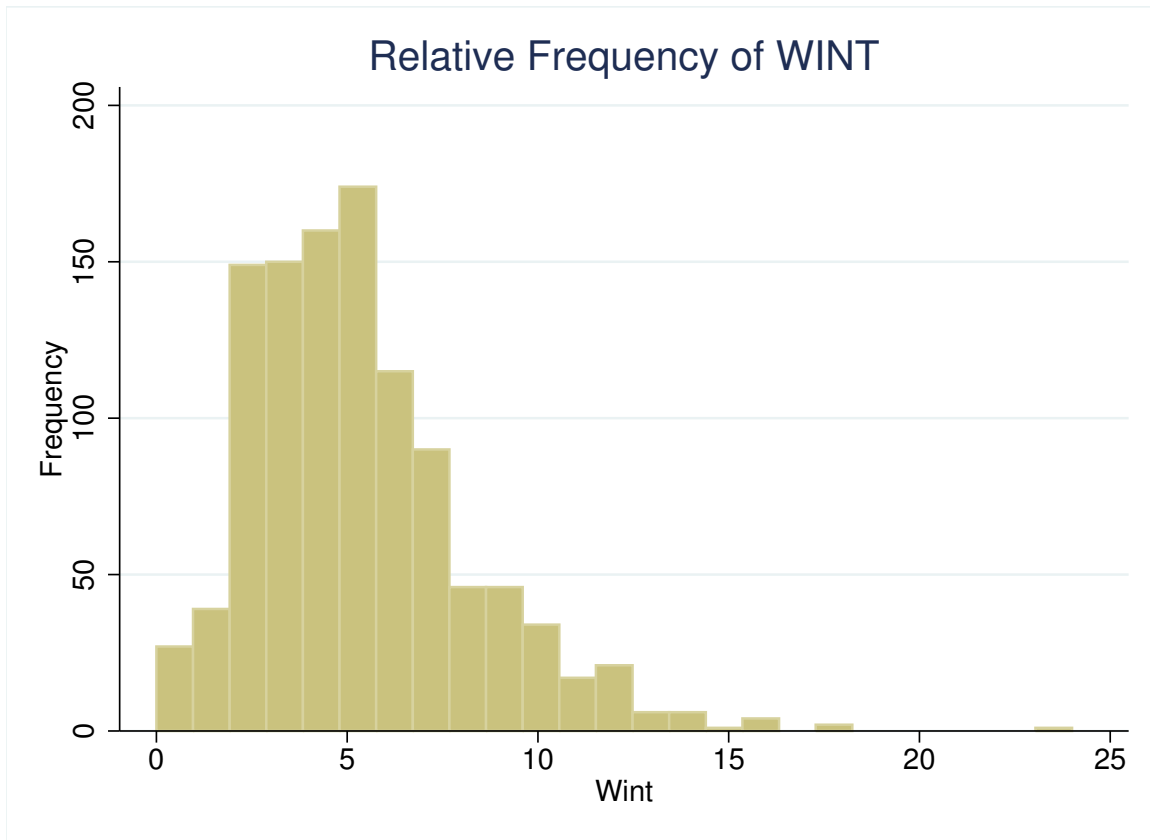
Dummies	0	1	
Knockout Stage	1088	786	302
World Cup	1088	780	308
Confederations Cup	1088	968	160
Under 20's Cup	1088	588	500
Olympic Games	1088	928	160
Hosting	1088	958	130
Overtime	1088	1002	86
Penalties	1088	879	209
Ex Soviet	1088	933	155
Contiguity	1088	1057	31

The issuing of any cards during any particular match are subject to the referee's discretion and are in general, only issued for excessive fouls. However, the awarding of fouls are much more common and could be seen as a proxy for general match aggression, that is constant but not excessive aggression. Thus, the second measure FOULS is the total count committed during a match, but these counts are only provided from 2002 onwards which reduces the number of matches down to 464.

The subjectivity of issuing cards during a match could lead to a potential distortion of the distribution and by extension WINT. While there is a positive correlation between WINT and Fouls (as confirmed by the Pearson index), the relative frequencies of WINT and Fouls appear to be distributed according to different probability functions (see Fig 1 and 2)<sup>6</sup>. The visible hand of the referee seems to play a relevant part in cards distribution, as confirmed by the scatter plot of the two variables (Fig 3), where the variability of the

<sup>5</sup>The dependent variable was also introduced without distinguishing types of yellow cards, and no significant differences emerge in the estimations (provided in the Appendix, Table A3).

<sup>6</sup>WINT fails standard tests for normality but holds for FOULS.



weighted intensesness is far of being explained totally by Fouls.

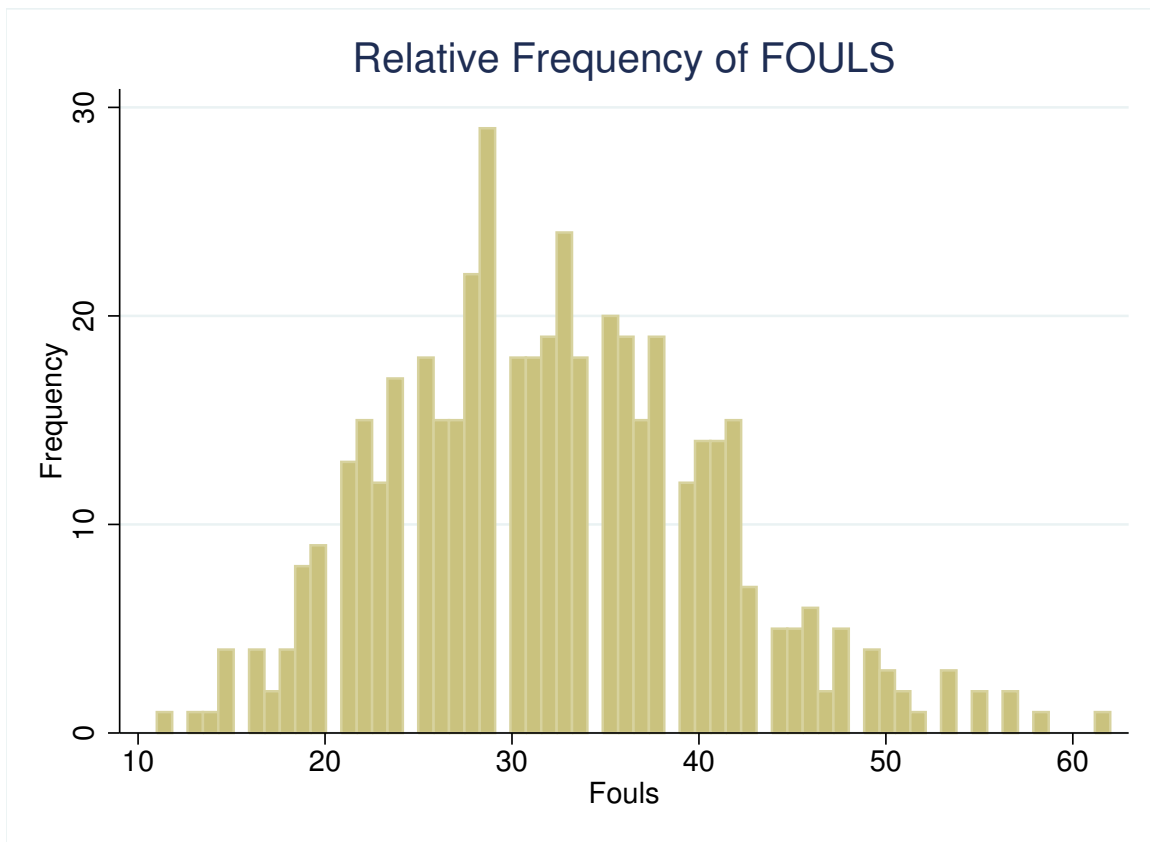
### Tournament

The primary tournament variable of interest is associated to the closeness of the match, which is computed as the absolute difference in the FIFA World ranking of each team prior the competition under investigation<sup>7</sup>. We do not formulate unidirectional expectation on the sign of the Ranking Difference coefficient, while an expected balanced match may be harsh, by increasing the gap in the teams' recognised strengths (ranking) may induce a more aggressive attitude of the underdog team as an attempt to reduce the deficit. The remaining variables are dummies signalling the typology of the match (knockout phase versus group phase matches), the matches played by the hosting country, those finished in over time, and those in which at least a penalty was assigned<sup>8</sup>. Finally, we consider the crowd, namely the attendance (measured in thousands), which we use to control in game stressors that may generate an additional or external source of aggression

<sup>7</sup>Data on ranking are provided by FIFA and retrievable on line in [www.fifa.com/worldranking/rankingtable/index.html](http://www.fifa.com/worldranking/rankingtable/index.html).

<sup>8</sup>We expect a positive sign for the associated coefficients, Knockout Stages, Hosting Countries, Over Time and Penalties.





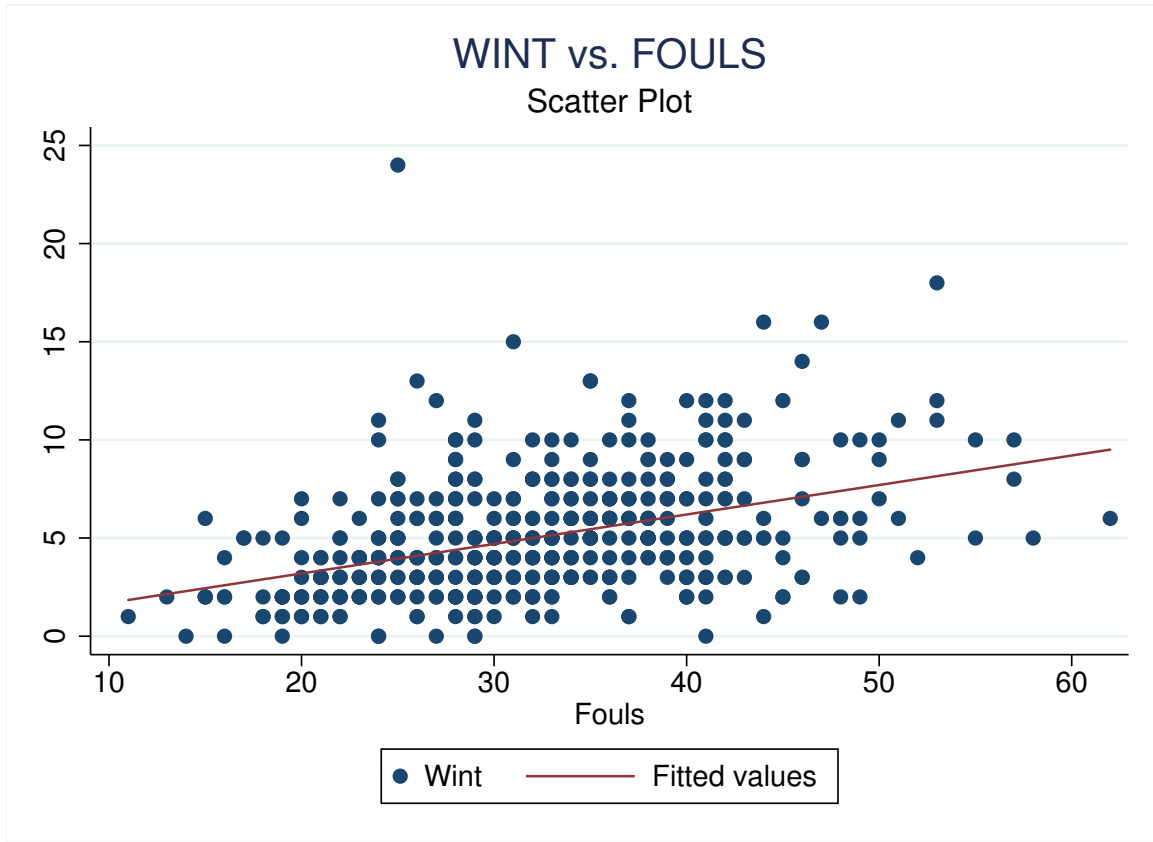
(see e.g. Savage & Torgler, 2013). It has been shown that referees decision can be affected by the size/noise generate by the crowd (see e.g. Greer, 1983; Nevill, Balmer, & Williams, 2002; Pollard, 1986; Schwartz & Barsky, 1977), which can affect the issuing of fouls and cards. Furthermore, it is likely that a more passionate environment may induce a more aggressive behaviour of players; as such the associated coefficient is expected to be positive.

## Identity

The second group relates to variables summarising the national characteristics, which broadly make up the national identity differences between each team, these include: the differential in bilateral commercial trade (TPGI); the Education Gap; Power Gap; Religious Freedom Gap; Governance Imbalance; and the count of armed conflicts after the end of the World War II.

We first compute a trade penetration gap index (TPGI)<sup>9</sup> as follows:

<sup>9</sup>The trade data has been taken from International Monetary Fund (2013), Direction of Trade Statistics (Edition: June 2013) Mimas, University of Manchester. DOI: <http://dx.doi.org/10.5257/imf/dots/2013-06>. Data on commercial trade are in current US dollars. Data retrieved on February 2014. Note that data on England and Scotland are those from United Kingdom, data on Yugoslavia and Serbia are from Serbia and



$$TPGI = 1 - \frac{\min\left[\frac{\text{ImportAfromB}}{\text{ImportA}}; \frac{\text{ImportBfromA}}{\text{ImportB}}\right]}{\max\left[\frac{\text{ImportAfromB}}{\text{ImportA}}; \frac{\text{ImportBfromA}}{\text{ImportB}}\right]} \quad (2)$$

where Import A from B (Import B from A) are the gross imports (c.i.f.) of country/team A (B) from country B (A), and Import A (B) are total imports (c.i.f.) of country A (B). The index ranges between 0 and 1; it is decreasing in the distance of relative bilateral trade. It is 0 (no gap) for countries with equal share of trade exchanges, and 1 if at least one country has no commercial relation with the other one. Stated simply, if the index approaches to 1, there are asymmetric gains from trade in the bilateral relationship<sup>10</sup>.

Montenegro (up to 2004) and from Republic of Serbia, data on Belgium prior 1998 are from Belgium and Luxembourg.

<sup>10</sup>E.g. USA and Germany have an average index around 0.82 and 0.84, respectively; i.e. USA and Germany exhibit a large bilateral trading gap. If we consider the value of the index between them, it is about 0.325. This gap rises slightly if we compare United States or Germany to Italy (0.41 and 0.56 respectively) and England (0.58 and 0.52), while it increases if compared to Romania (0.99 both) and Iran (0.99 and 1).

As measure of human capital imbalance, we employ an Education Gap (EG) computed using the percentage of Secondary School Enrolment (gross) of both countries provided by the World Bank in the Catalogue Sources of World Development indicators<sup>11</sup>. We computed the gap as the ratio between the two percentages taking the maximum value as the numerator.

$$Ed.Gap = \frac{\max[\%SecondaryEnrolments(A; B)]}{\min[\%SecondaryEnrolments(A; B)]} \quad (3)$$

Then, the Education Gap (EG) index has a minimum of 1 and is increasing in the distance of school enrolment ratio of countries<sup>12</sup>. That is, at a value of 1 there are no differences in the educational attainments of either nation, but as the value increases there is a widening disparity in national education levels.

Next we employ the variable Power Gap (PG) computed as the absolute difference of the Composite Index of National Capability (CINC) of the two countries, provided by the Correlates of War project in the National Material Capabilities data set (NMC version 4)<sup>13</sup>.

$$PowerGap = |CINC(A) - CINC(B)| \quad (4)$$

The CINC index uses data on urban and total population, iron and steel production, energy consumption, military personnel and expenditure to proxy the power of each country<sup>14</sup>. We expect a positive sign of the associated coefficient because the football matches can be viewed as an opportunity of revenge for less power countries. That is, a more aggressive behaviour of players on the soccer pitch may be induced by that chance of redemption. In addition to power, we also include an Armed Conflict variable intended to capture whether, or not, a country has been involved into an armed conflict. In line with Cuesta and Bohórquez (2012) and Miguel et al. (2008) this variable shows the country's inclination toward armed conflict (either internal or external). We draw information

---

<sup>11</sup>The total enrolment in secondary education, regardless of age, is expressed as a percentage of the population of official secondary education age; it is the more inclusive data on school participation for our sample. This is available on line at <http://data.worldbank.org/indicator/SE.SEC.ENRR> (data retrieved on December, 2013).

<sup>12</sup>Again using the United States and Germany, the average Education scores are 1.192 and 1.186, respectively, whereas the gap between them is about 1.048. I.e. there is no significant difference in education levels. The gap is similar to other developed countries Italy (1.021 and 1.094, respectively) or England (1.097 and 1.026, respectively), but is extremely different for African nations like Ghana, whose gap is about 1.807 and 1.763 respectively.

<sup>13</sup>Data on CINC are available on line in <http://www.correlatesofwar.org/> (data retrieved on December, 2013). For details see Singer et al. (1972).

<sup>14</sup>For example, United States and Germany show an average gap of 0.133 and 0.023 with the observed compared countries, and the gap between them is about 0.113.

from Uppsala Conflict Data Program (UCDP)<sup>15</sup> to associate a discrete variable (0, 1, 2) with each single match in order to capture if none, one or both countries experienced an interstate or an intrastate war after 1946.

In line with the idea of religion being an integral part of a national identity, we have included a Religion Gap (RG) variable, measuring the differential in religious freedom between the two teams. We aggregate the four indexes from the Association of Religion Data Archives (ARDA, 2014)<sup>16</sup>.

$$Relig.Gap = |ARDA(A) - ARDA(B)| \quad (5)$$

Once these scores are aggregated we have a religion score that scales from 0-40 for each national team, which we then calculate the absolute size differential. In addition to the regulation of religious freedom we have included dummy terms for the same base religion (0 = Same, 1 = Different)<sup>17</sup>. Anecdotally, we observe that nations are less likely to engage in conflict if the underlying identity, legal and social belief structures are similar (*ceteris paribus*). However, we do observe a number of conflicts across religious lines.

In line with this we include the GovImbalance index, a measure of difference in the political/government process and freedom between each team. We utilise the indexes created by "Freedom House" (Freedom House, 2014) that measures the Political Rights (PR)<sup>18</sup> and Civil Liberties (CL)<sup>19</sup> of each nation's citizenry<sup>20</sup>. We take the average of each nation's PR and CR and calculate the absolute difference in size between each national team, as shown below:

$$Gov.Imbalance = 1 - \frac{\min\left[\frac{(PR(A)+CL(A))}{ImbalanceA}, \frac{(PR(B)+CL(B))}{ImbalanceB}\right]}{\max\left[\frac{(PR(A)+CL(A))}{ImbalanceA}, \frac{(PR(B)+CL(B))}{ImbalanceB}\right]} \quad (6)$$

<sup>15</sup>See Table A1 for details on intrastate or interstate conflict location, all the data is available online at [http://www.pcr.uu.se/research/ucdp/datasets/ucdpayadic\\_dataset/](http://www.pcr.uu.se/research/ucdp/datasets/ucdpayadic_dataset/) (data retrieved on November, 2013). For further discussion see Harbom, Melander, and Wallensteen (2008).

<sup>16</sup>These four indexes measure "Government Regulation," "Government Favouritism," "Social Regulation of Religion" and "Religious Persecution" of each country ranging from 0-10, with the lowest score (0) being the least restrictive and the highest (10) being the worst or most restrictive.

<sup>17</sup>We assume that different "flavours" of a religion are the same i.e. Catholic and Lutheran are both classified as Christian.

<sup>18</sup>The Political Rights index includes: Electoral process, Political Pluralism and Functioning of Government

<sup>19</sup>The Civil Liberties index includes: Freedom of Expressions and Belief, Associational and Organisational Rights, Rule of Law and Personal Autonomy and Individual Rights.

<sup>20</sup>PR index ranges from 0 to 40, where the higher score equates to more political rights and the CL index ranges from 0 to 60, where again the higher the score the greater the civil liberties for its citizenry.

The absolute size difference gives us a measure of the distance between the two teams in terms of their national government identity, i.e. the higher the differential score, the greater the national political/government difference.

The final identity variable measures the absolute size difference in levels of perceived corruption between the two nations ranked on a 10 point scale; this index is generated using the Transparency International corruption perception scores covering all the match periods. It is important to note that this measure only extends back to 1997, as such we do not have a measure for prior tournaments reducing the total number of observations to 464 (this includes the 1994 World Cup, 1995 Confederation and Under 20 World Cups and the 1996 Olympic Games). The corruption Gap is estimated as below:

$$\text{CorruptionGap} = |TI(\text{TeamA}) - TI(\text{TeamB})| \quad (7)$$

Where the Transparency International Score for each nation during each the year of the event is used as a proxy for the probability that aggregate levels of corruption may be representative of a teams willingness to show aggression or break FIFA rules.

### **GeoInst.**

Finally we include some geographic and institutional variables including: (i) Contiguity, a dummy variable if countries are neighbours; (ii) Distance, which is the distance in kilometres between the capitals of countries involved in the match; (iii) Ex Soviets, a dummy variable which signals those matches involving countries that were part of Soviet bloc in the Cold War period;<sup>21</sup> (iv) dummies associated to each tournament to test if some edition stands out for aggressiveness. Table 1 summarises descriptive statistics of the dependent variables and dummies used in the regressions<sup>22</sup>.

## **ANALYSIS**

Given the count nature of the dependent variables and the over-dispersion between the mean and the variance of both, we used a Negative Binomial regression (type II) instead of a Poisson model. As suggested by the Principal Component Analysis (PCA) test we have included all the explanatory variables of each group in the regressions, Tables 2 and 3 present the results. For all equations (of both models) we performed the Likelihood Ratio and Wald tests considering specification (1) as the baseline model. The comparison of results with respect to the models (1) confirms the hypothesis that sport variables are not exhaustive in explaining the aggressive attitude of players on the soccer pitch. We slowly introduce each of the national identity variables in order to investigate the impact each has on the over all relationship with aggression (2-6). We observe that all the

<sup>21</sup>In line with Riordan (1974) where the role of sport in socialist countries, viewed as a tool to gain international prestige, we expect a positive sign of the related coefficient.

<sup>22</sup>We have included a complete variance-covariance matrix in Table A1 in the appendix.

national identity variables are significant, except for the difference in Governance . These specifications (2-8) indicate that national identity plays a strong role in the prediction of on field violence between national teams, which remain robust even when we control for additional factors such as Attendance, Distance, Ex-Soviet, sharing a border (9) and tournament type (10).

The LR tests supports the idea that the identity variables are of great importance in determining the level of aggressiveness, using either the number of sanctions or fouls committed. All coefficients associated to the variables of the second group are positive and of significance; this suggest that the (bilateral) gaps of trade, education level, political power, religious freedom and governance increase the aggressiveness on the soccer pitch. The coefficients of regression in the MLE techniques can be interpreted as the semi-elasticity of the dependent variable with respect to the explanatory variables, *ceteris paribus*. Then, the coefficients capture the change in the conditional average of WINT and Fouls for one unit variation of the explanatory variables.

The most interesting result is the inclusion of the referee fixed effects (11), here we observe that all national differences disappear when we control for the referee impact. This is a strong indicator of the ability of the referees to control the game and limit the aggression, by taking national identity out of play but leaving game factors such as Knockout and Penalty. This result reveals that in the end the referee is an exceptionally good neutralizer of out of game influences, but allows in game pressure to shine through. The Knockout stages are a *winner take all* environment, where the looser must exit the competition only the winner has a chance to take the ultimate prize, as such it is not surprising that this factor is robustly significant. Additionally, it is not unusual that there is a significant link between WINT and the issuing of a Penalty, in the vast majority of situations any event that is ‘bad’ enough for a card to be issued is likely to be coupled with a penalty.

In Table 3, we investigate the same set of controls on the list of Fouls called during a game, keeping in mind that not all games had fouls issued and that fouls do not always lead to issuing of cards . Fouls are a general measure of the roughness of raw aggression of a game. We follow the same approach as explored in Table 2, firstly adding the match variables (12) and then slowly building the set of National Identity (13-19) and finally controlling for additional factors such as Attendance, Distance, Ex-Soviet, sharing a border (20) and tournament type (21). Again we include a Referee fixed effect model to investigate the role of the referee on FOULS (22). While we observe that there are much less observations in the FOULS regressions, we see a very similar patters emerging as with WINT. The national identity variables are robustly significant through out the specifications, but virtually vanish when we include the Referee FFX modelling (22). Both WINT and FOULS are significantly predicted by national identity, yet both are moderated by the in game referee to such an extent as to make national identity insignificant in both specifications (11 & 22).

## CONCLUSIONS

The main purpose of our paper was to empirically investigate whether and how feeling of national identity reverberates on the soccer pitch. In particular, whether national identity and international rivalry across pairs of countries predict aggressiveness of soccer players, through the use of proxy measure for aggression (i) a weighted measure of penalties and (ii) the count of fouls committed in international competitions. We collected information of 1088 matches of final phases of FIFA World, Confederations and Under 20's cup as well as the Olympic games tournaments in the period 1994 to 2012. As explanatory variables we employ a collection of data referring to sport, commercial, educational and political and religious aspects. In particular, we also applied a novel measure of trading penetration to take into account the possible emergence of economic rivalry between countries. Our results show that penalties and fouls increase as the asymmetry between countries increases and its intensity is positively correlated with the power imbalance between countries suggesting the idea that football is perceived to an opportunity of redemption for less advanced (free) countries.

This paper enriches the literature on identity as well as the impact identity has on hostility between countries in a sporting context. We have considered tournament-specific and match-specific variables and in particular the possible emergence of a crowd effect by including the attendance and monetary incentives of players. While significant, some sport variables (as ranking of teams or uncertainty of matches) seem to be of less importance in determining the level of aggressiveness of players. Surprisingly, there is little evidence of a crowd effect, namely a more crowded stadium is positively associated with the count of penalties and fouls. It is likely that players at this level of sport are acclimated to the effects of crowds but is susceptible to other forms of match stress (see Savage and Torgler, 2012). Our results also demonstrate that not only can the concept of identity be successfully expanded to the national level, but we show that it is possible to build a set of national identity variables based upon macro variables and to use these variables to explore national differences. We show that the same arguments put forward by Akerloff and Kranton (2000) for the existence of individual identity hold at the national level, which may allow us to better understand aggressive behaviour between nations based on the differences in identity.

Finally, but not surprisingly, our results clearly demonstrate the impact that referees have on on-field aggression, such that the introduction of the referee fixed effects negates the significance of virtually all of the national identity variables. While this result is not unexpected, the size and clarity of the effect is interesting and demonstrates the neutralising impact of referees on international tournaments. This work has the potential to open up the new lines of investigation into national identity and strengthens our understanding of identity in context of nationality and the perchance for aggression. We often hear the saying that it is our differences that make us strong, but it is possible that the reason for this is it stokes the fires of aggression and mistrust – which we mistake for strength.

## References

- Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *The Quarterly Journal of Economics*, 115(3), 715-753.
- Bandura, A. (1973). *Aggression: A social learning analysis*. Prentice-Hall.
- Basu, K. (2005). Racial conflict and the malignancy of identity. *The Journal of Economic Inequality*, 3(3), 221-241.
- Caruso, R. (2011). Crime and sport participation: Evidence from Italian regions over the period 1997-2003. *The Journal of Socio-Economics*, 40(5), 455-463.
- Caruso, R., & Di Domizio, M. (2013). International hostility and aggressiveness on the soccer pitch: Evidence from European Championships and World Cups for the period 2000-2012. *International Area Studies Review*, 16(3), 262-273.
- Cooper, J. (1989). The military and higher education in the USSR. *The ANNALS of the American Academy of Political and Social Science*, 108-119.
- Cuesta, J., & Bohórquez, C. (2012). Soccer and national culture: Estimating the impact of violence on 22 lads after a ball. *Applied Economics*, 44(2), 147-161.
- Domizio, M. D., & Caruso, R. (2014). Hooliganism and demand for football in Italy: Attendance and counterviolence policy evaluation. *German Economic Review*.
- Goff, B., & Tollison, R. (1990). *Sportometrics*. College Station: Texas A & M University Press.
- Greer, D. L. (1983). Spectator booing and the home advantage: A study of social influence in the basketball arena. *Social Psychology Quarterly*, 46(3), 252-261.
- Harbom, L., Melander, E., & Wallensteen, P. (2008). Dyadic dimensions of armed conflict, 1946-2007. *Journal of Peace Research*, 45(5), 697-710.
- Howell, R. (1975). The USSR: Sport and politics intertwined. *Comparative Education*, 11(2), 137-145.
- Jackson, S. J. (2013). The contested terrain of sport diplomacy in a globalizing world. *International Area Studies Review*, 16(3), 274-284.
- Jung, G. (2013). Sport as a catalyst for cooperation: Why sport dialogue between the two Koreas succeeds in some cases but not in others. *International Area Studies Review*, 16(3), 307-324.
- Leeson, P. T., Smith, D. J., & Snow, N. A. (2012). Hooligans. *Revue d'économie politique*, 122(2), 213-231.
- Miguel, E., Saiegh, S. M., & Satyanath, S. (2008). *National cultures and soccer violence* (Tech. Rep.). National Bureau of Economic Research.
- Murshed, S. M. (2009). A note on the interaction between identity based fear and hate. *Peace Economics, Peace Science and Public Policy*, 14(3).
- Nevill, A. M., Balmer, N., & Williams, A. M. (2002). The influence of crowd noise and experience upon refereeing decisions in football. *Psychology of Sport and Exercise*, 3(4), 261-272.
- Nygård, H. M., & Gates, S. (2013). Soft power at home and abroad: Sport diplomacy, politics and peace-building. *International Area Studies Review*, 16(3), 235-243.
- Pollard, R. (1986). Home advantage in soccer: A retrospective analysis. *Journal of Sports Sciences*, 4(3), 237-248.
- Poutvaara, P., & Priks, M. (2009). The effect of police intelligence on group violence: Evidence from reassignments in Sweden. *Journal of Public Economics*, 93(3), 403-411.
- Riordan, J. (1974). Soviet sport and Soviet foreign policy. *Europe-Asia Studies*, 26(3), 322-343.
- Riordan, J. (1993). The rise and fall of Soviet Olympic champions. *Olympika: The International Journal of Olympic Studies*, 2, 25-44.
- Savage, D. A., & Torgler, B. (2013). Nerves of steel? Stress, work performance and elite athletes. *Applied Economics*, 44(19), 2423-2435.
- Schwartz, B., & Barsky, S. F. (1977). The home advantage. *Social Forces*, 55(3), 641-661.
- Smith, V. L. (1991). Rational choice: The contrast between economics and psychology. *The Journal of Political Economy*, 99(4), 877-897.



Spaij, R. (2008). Men like us, boys like them violence, masculinity, and collective identity in football hooliganism. *Journal of sport & social issues*, 32(4), 369–392.

## APPENDIX

Table 2  
*Data set composition*

Competition	Year	Hosting	Group matches	Knockout matches
World Cup	1994	United States	36	16
Confederation Cup	1995	Saudi Arabia	8	8
Under 20's	1995	Qatar	24	32
Olympic Games	1996	USA	24	32
Confederation Cup	1997	Saudi Arabia	16	16
Under 20's	1997	Malaysia	36	52
World Cup	1998	France	48	16
Confederation Cup	1999	Mexico	16	16
Under 20's	1999	Nigeria	36	52
Olympic Games	2000	Australia	24	32
Confederation Cup	2001	Japan/South Korea	16	16
Under 20's	2001	Argentina	36	52
World Cup	2002	Japan/South Korea	48	16
Confederation Cup	2003	France	16	16
Under 20's	2003	United Arab Emirates	36	52
Olympic Games	2004	Athens	24	32
Confederation Cup	2005	Germany	16	16
Under 20's	2005	Netherlands	36	52
World Cup	2006	Germany	48	16
Under 20's	2007	Canada	36	52
Olympic Games	2008	China	24	32
Under 20's	2009	Egypt	36	52
Confederation Cup	2009	South Africa	16	16
World Cup	2010	South Africa	48	16
Under 20's	2011	Colombia	36	52
Olympic Games	2012	United Kingdom	24	32
Under 20's	2013	Turkey	36	52
Confederation Cup	2013	Brazil	16	16

Table 3

*Location, code and year identification of conflicts*

<b>Location</b> <sup>23</sup>	<b>Conflict</b> <sup>24</sup>	<b>Year</b>
Algeria	49, 191	1954-1962; 1991-2012
Angola	66, 81, 131, 192	1961-2002; 2004; 2007; 2009
Argentina	50, 151,	1955; 1963; 1974-1977; 1982
Australia	226	2003
Bolivia	1	1946; 1952; 1967
Cameroon	57, 158, 210	1957-1961; 1984; 1996
Chile	125	1973
China	3, 18, 39, 77, 108, 109, 138	1946-1950; 1954; 1956; 1958-1959; 1962; 1967; 1969; 1974; 1978-1981; 1984; 1986-1988
Colombia	92	1964-2012
Costa Rica	27	1948
Croatia	195	1992-1993; 1995
Ecuador	208	1995
France	15, 55, 73, 75	1946; 1956; 1961-1962
Ghana	98	1966; 1981; 1983
Greece	4	1946-1949
Honduras	58, 110	1957; 1969
Iran	6, 143, 128	1946; 1966-1968; 1979-1988; 1990-1993; 1996-1997; 1999-2001; 2005-2011
Ivory Coast	225	2002-2004; 2011
Mexico	205	1994; 1996
Morocco	47, 60, 81, 115, 135	1953-1958; 1963; 1971; 1975-1989
Netherlands	79	1962
Nigeria	100, 107, 154, 210, 249, 250	1966-1970; 1983; 1996; 2004; 2009; 2011-2012
North Korea	38	1949-1953
Paraguay	22	1947; 1954; 1989
Romania	175	1989
Russia (Soviet Union)	11, 13, 14, 53, 109, 181, 182, 204, 206, 256, 257	1946-1950; 1956; 1969; 1979; 1990-1991; 1993-1996; 1999-2012
Saudi Arabia	145	1979
Senegal	180	1990; 1992-1993; 1995; 1997-1998; 2000-2001; 2003; 2011
Serbia (Yugoslavia)	189, 190, 218	1991; 1998-1999
South Africa	101, 150	1966-1988
South Korea	38	1949-1953
Spain	147	1978-1982; 1985-1987; 1991-1992
Togo	163	1986
Trinidad and Tobago	183	1990
Tunisia	48, 148, 75	1953-1956; 1961; 1980
Turkey	127, 159, 188	1974; 1984-2012
United Kingdom	16, 42, 119, 151, 226	1946; 1951-1952; 1956; 1971-1991; 1998; 2003
USA	41, 155, 173, 224, 226	1950; 1983; 1989; 2001-2002; 2004-2012
Uruguay	123	1972

Table 4  
*Gross Enrolment Ratio. Secondary School.*

Angola	Data 2006 is not available. It is calculated considering a regular (average) increase from 2002 up to 2008.
Belgium	Data 1998 refers to 1999.
Brazil	Data provided by World Bank covers the period 2002-2005. We used the nearest data available for each competition.
Cameroon	Data 2002 is calculated as the average of data 2001 and 2003.
Croatia	Data 2004 is calculated as the average of data 2003 and 2005 Data 2012 is that of 2010.
Czech Republic	Data 2012 refers to 2011.
Germany	Data 2012 refers to 2010.
Denmark	Data 2012 refers to 2010.
France	Data 2012 refers to 2011.
England	Data refers to United Kingdom; data 2012 is that of 2010.
Ghana	Data 2010 is calculated as the average of data 2009 and 2011.
Greece	Data 2008 and 2012 refer to 2007 and 2010 respectively.
Rep. of Ireland	Data 2012 refers to 2010.
Iran	Data 1998 is calculated as the average of data 1997 and 1999.
Italy	Data 2012 refers to 2010.
Ivory Coast	The only data available and then used refers to 2002.
Jamaica	Data 1998 refers to 1999.
Nigeria	Data 1994 and 1998 are those of 1999.
Netherlands	Data 2012 refers to 2010.
Poland	Data 2012 refers to 2010.
Portugal	Data 2012 refers to 2010.
Russia	Data 2002 and 2012 refer to 2003 and 2009 respectively.
Saudi Arabia	Data 1994, 1998 and 2002 refer to 2005; data 2006 is calculated as the average of data 2005 and 2007.
Scotland	Data refers to United Kingdom.
South Africa	Data 2010 refers to 2009.
Sweden	Data 2012 refers to 2011.
Trinidad & Tobago	Data 2006 refers to 2004.
Turkey	Data 1996 is calculated as the average of data 1995 and 1997.
Ukraine	Data 2012 refers to 2011.
Yugoslavia	Data 1998 refers to Serbia 1999.

Table 5

*Maximum Likelihood Estimation: Negative Binomial II Count Regression*

<i>WINT</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Log Ranking Difference	1.798*** (-26.72)	1.177*** (-7.28)	1.158*** (-7.19)	1.113*** (-5.70)	1.110*** (-5.47)	1.108*** (-5.44)	1.108*** (-5.45)	1.103*** (-4.38)	1.092*** (-3.90)	1.064** (-2.98)	1.053* (-2.43)	0.989 (-0.56)
Knockout Stage	2.228*** (-12.03)	1.473*** (-7.18)	1.372*** (-5.92)	1.370*** (-6.05)	1.388*** (-6.30)	1.396*** (-6.38)	1.398*** (-6.40)	1.436*** (-5.78)	1.393*** (-5.34)	1.330*** (-4.66)	1.270*** (-3.79)	1.319*** (-5.69)
Hosting Country	1.937*** (-7.29)	1.173* (-2.24)	1.141 (-1.89)	1.128 (-1.86)	1.140* (-2.04)	1.119 (-1.77)	1.119 (-1.77)	1.068 (-0.89)	1.076 (-1.01)	0.955 (-0.63)	0.963 (-0.51)	0.997 (-0.04)
Penalty	2.238*** (-11.90)	1.400*** (-6.20)	1.350*** (-5.79)	1.324*** (-5.48)	1.315*** (-5.38)	1.315*** (-5.40)	1.315*** (-5.39)	1.292*** (-4.21)	1.299*** (-4.27)	1.307*** (-4.77)	1.303*** (-4.84)	1.265*** (-5.24)
OverTime	1.21 (-1.78)	1.227* (-2.55)	1.222** (-2.58)	1.189* (-2.25)	1.172* (-2.06)	1.172* (-2.04)	1.171* (-2.04)	1.110 (-1.17)	1.100 (-1.08)	1.138 (-1.41)	1.146 (-1.52)	1.119 (-1.42)
TPGI		3.844*** (-30.97)	2.802*** (-16.65)	1.865*** (-7.78)	1.812*** (-7.36)	1.800*** (-7.30)	1.794*** (-7.14)	1.658*** (-5.13)	1.601*** (-4.85)	1.388*** (-3.55)	1.344** (-3.21)	0.926 (-1.02)
Conflict			1.291*** (-8.18)	1.211*** (-6.71)	1.184*** (-5.85)	1.163*** (-4.97)	1.162*** (-4.93)	1.178*** (-4.47)	1.152*** (-3.87)	1.134*** (-3.49)	1.103* (-2.56)	0.999 (-0.03)
Power Imbalance				1.982*** (-8.23)	1.921*** (-7.85)	1.855*** (-7.46)	1.858*** (-7.42)	1.757*** (-5.89)	1.677*** (-5.36)	1.366*** (-3.49)	1.303** (-3.00)	0.996 (-0.05)
Education Imbalance					1.298** (-2.88)	1.267** (-2.64)	1.257* (-2.48)	1.067 (-0.52)	1.099 (-0.75)	1.271* (-2.03)	1.209 (-1.61)	1.045 (-0.41)
Religious Difference						1.008** (-2.62)	1.007* (-2.20)	1.011* (-2.38)	1.012* (-2.57)	1.007 (-1.63)	1.007 (-1.65)	1.001 (-0.20)
Governance Difference							1.000 (-0.29)	0.998 (-1.36)	0.999 (-0.47)	1.000 (-0.21)	1.000 (-0.33)	1.001 (-0.59)
Corruption Difference								1.080*** (-4.75)	1.071*** (-4.34)	1.040** (-2.60)	1.043** (-2.78)	0.998 (-0.14)
Same Religion									1.244*** (-4.13)	1.177** (-3.12)	1.154** (-2.73)	1.057 (-1.37)
Attendance										1.005*** (-4.52)	1.008*** (-5.48)	1.000 (-0.14)
Distance										1.028*** (-4.83)	1.023*** (-3.91)	0.997 (-0.59)
Ex-Soviets										1.296** (-3.19)	1.281** (-3.05)	1.033 (-0.41)
Contiguity										1.546*** (-3.81)	1.480*** (-3.49)	0.99 (-0.08)
Confederations Cup											0.962 (-0.45)	0.830* (-2.02)
Olympic Games											1.246** (-2.76)	1.077 (-1.00)
Under 20 World Cup											1.242** (-2.96)	0.986 (-0.18)
REF FFX												YES
Obs.	1088	1066	1066	1066	1058	1055	1055	675	675	675	675	675
Prob. > $\chi^2$	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.
$\alpha^2$	0.682	0.257	0.238	0.211	0.208	0.206	0.2058	0.193	0.184	0.149	0.142	6.60E-08
Log-likelihood	-3247.2	-2797.5	-2755.8	-2705	-2681.9	-2671.9	-2671.9	-1709	-16996	-1665	-1656.7	-1418.6
Wald	2145.88	6220.14	6196.3	6339.5	6367.2	6387.5	6104.9	4503.1	4572.5	5403	5659.4	.

Table 6

*Maximum Likelihood Estimation: Negative Binomial II Count Regression*

<i>FOULS</i>	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Log Ranking Difference	11.02*** (-19.19)	2.161*** (-9.71)	1.732*** (-7.56)	1.455*** (-7.56)	1.396*** (-6.69)	1.369*** (-6.86)	1.365*** (-6.91)	1.317*** (-5.62)	1.286*** (-5.42)	1.140*** (-3.91)	1.103** (-3.05)	0.978 (-1.80)
Knockout Stage	4.214*** (-8.31)	1.572** (-3.01)	1.253 (-1.76)	1.539*** (-3.35)	1.685*** (-4.07)	1.711*** (-4.23)	1.744*** (-4.35)	1.622*** (-3.47)	1.515** (-3.04)	1.302* (-2.36)	1.142 (-1.44)	1.062* (-2.18)
Hosting Country	7.939*** (-11.24)	2.312*** (-4.20)	2.141** (-3.23)	1.979** (-2.97)	2.067*** (-3.34)	1.893*** (-3.54)	1.892*** (-3.67)	1.874*** (-3.77)	1.918*** (-4.17)	1.287 (-1.87)	1.191 (-1.47)	1.089* (-2.43)
Penalty	3.973*** (-7.96)	1.524** (-2.62)	1.29 (-1.93)	1.228* (-1.96)	1.211 (-1.78)	1.203 (-1.75)	1.216 (-1.83)	1.148 (-1.15)	1.114 (-0.98)	1.221* (-1.98)	1.195* (-2.03)	1.013 (-0.49)
OverTime	1.323 (-1.09)	1.818** (-2.59)	1.496* (-2.30)	1.169 (-0.86)	1.134 (-0.69)	1.159 (-0.81)	1.156 (-0.79)	1.038 (-0.20)	0.974 (-0.16)	1.062 (-0.46)	1.091 (-0.72)	1.204*** (-4.44)
TPGI		17.50*** (-30.68)	9.172*** (-20.23)	4.287*** (-10.76)	3.942*** (-9.71)	3.761*** (-9.64)	3.637*** (-9.18)	2.868*** (-6.36)	2.594*** (-6.04)	1.660*** (-3.75)	1.532*** (-3.43)	1.004 (-0.10)
Conflict			2.022*** (-9.57)	1.530*** (-6.30)	1.415*** (-5.05)	1.360*** (-4.46)	1.342*** (-4.23)	1.335*** (-3.67)	1.284** (-3.28)	1.338*** (-4.79)	1.198** (-3.22)	0.963 (-1.81)
Power Imbalance				4.878*** (-10.07)	4.536*** (-10.14)	4.034*** (-8.96)	4.076*** (-9.16)	3.862*** (-8.52)	3.476*** (-7.78)	2.180*** (-5.82)	2.000*** (-5.91)	0.895* (-2.56)
Education Imbalance					2.608*** (-4.43)	2.228*** (-4.20)	1.999*** (-3.40)	1.474 (-1.45)	1.445 (-1.45)	1.987*** (-3.36)	1.895*** (-3.37)	1.059 (-0.78)
Religious Difference						1.028*** (-3.51)	1.023** (-3.02)	1.031*** (-3.51)	1.034*** (-4.00)	1.015* (-2.24)	1.015* (-2.45)	1.001 (-0.36)
Governance Difference							1.004 (-1.90)	0.999 (-0.40)	1.001 (-0.45)	1.003 (-1.57)	1.001 (-0.68)	1.002* (-2.38)
Corruption Difference								1.196*** (-5.97)	1.178*** (-5.47)	1.068** (-2.62)	1.072** (-2.98)	0.977* (-2.37)
Same Religion									1.651*** (-5.67)	1.394*** (-4.41)	1.285*** (-3.77)	1.013 (-0.51)
Attendance ('000)										1.016*** (-7.13)	1.024*** (-9.19)	0.998* (-2.34)
Distance										1.071*** (-8.37)	1.053*** (-6.44)	0.997 (-1.02)
Ex-Soviets										1.503*** (-4.63)	1.479*** (-4.29)	0.965 (-0.84)
Contiguity										1.818** (-3.28)	1.792** (-3.13)	1.107 (-1.29)
Confederations Cup											1.073 (-0.57)	0.734*** (-4.33)
Olympic Games											1.04 (-0.23)	0.831* (-2.49)
Under 20 World Cup											1.860*** (-6.15)	0.95 (-0.93)
REF FFX												YES
Observations	464	453	453	453	445	445	445	337	337	337	337	337
Prob. > $\chi^2$	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.
$\alpha^2$	4.009	1.310	0.967	0.689	0.658	0.633	0.627	0.609	0.552	0.338	0.297	3.0e-11
Log-likelihood	-2814.0	-2383.8	-2289.2	-2189.4	-2140.2	-2129.7	-2127.5	-1607.7	-1589.5	-1498.2	-1473.6	-1045.2
Wald	1177.28	4781.3	5580.6	7002.2	7133.9	7464.9	7476.1	5538.3	6260.8	10933.6	13984.9	.

Table 7

*Correlation Matrix*

	Ranking Difference	Knockout	Hosting Country	Penalty	Over Time	TPGI	Conflict	Power Imbal.	Ed. Imbal.	Relig. Gap	Govern. Gap	Corrupt. Gap	Same Relig.	Attend	Distance	Ex Soviet	Contig.
Ranking	1																
Knockout	0.016	1															
Hosting	-0.044	0.048	1														
Penalty	-0.002	-0.004	-0.039	1													
Overtime	-0.035	0.443	0.027	-0.023	1												
TPGI	-0.039	-0.037	0.014	0.068	-0.046	1											
Conflict	-0.107	0.062	0.004	0.036	0.050	0.104	1										
Power	-0.080	-0.109	-0.073	0.058	-0.038	0.227	0.016	1									
Education	0.014	-0.068	-0.092	0.003	-0.005	0.131	0.140	0.102	1								
Religious	-0.125	-0.067	0.025	-0.008	-0.037	0.066	0.215	0.079	0.147	1							
Governance	-0.030	-0.098	-0.037	0.047	-0.067	0.093	0.166	-0.001	0.279	0.513	1						
Corruption	-0.012	-0.029	-0.058	0.026	0.009	0.002	-0.088	-0.073	0.270	0.000	0.325	1					
Same Religion	0.027	0.118	-0.054	-0.026	0.086	-0.028	0.001	-0.030	-0.108	-0.233	-0.294	-0.067	1				
Attendance	-0.020	0.136	0.290	-0.049	0.050	-0.035	-0.183	-0.048	-0.128	-0.065	-0.137	-0.036	0.073	1			
Distance	0.005	-0.173	0.021	-0.106	-0.081	-0.022	-0.075	-0.014	-0.070	0.011	-0.020	0.083	-0.180	-0.125	1		
Ex Soviets	-0.103	-0.095	-0.093	0.073	-0.039	0.035	-0.025	0.039	-0.151	-0.068	0.050	-0.093	0.026	-0.014	-0.075	1	
Contiguity	-0.005	0.187	0.012	0.001	0.050	-0.056	-0.012	-0.015	-0.103	-0.049	-0.153	-0.082	0.173	0.132	-0.321	-0.032	1