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ARTICLE



Policy, political and economic determinants of the evolution of competitive balance in the FIFA women's football World Cups

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ABSTRACT

Competitive balance is a key concept in sports economics. It postulates the necessity of sporting equilibrium between playing strengths to generate outcome uncertainty and thus fan demand. When looking at national teams, policy and political factors can help explain competitive balance. This article is interested in the evolution of competitive balance in the FIFA women's football World Cups over the 1991–2019 period. It aims to identify the policy, political and economic determinants of this evolution. The theoretical framework brings together the macro and sports policy factors leading to international sporting success, the historical policies and politics of gender equality and women's football impacting participation, and the economics and politics of the evolution of competitive balance that is positively impacted by an increase in participation. The research adopts a mixed methods approach, with the data relying both on sources documenting the historical policies and politics of gender equality and women's football, and the measurement and determinants of the competitive balance in the women's football World Cups. The results show that competitive balance has increased over time, consistent with the idea that the growing participation internationally translates in a better quality of the different playing strengths that, ultimately, leads to a better competitive balance. This growing participation internationally is related to the different (sport) policies and politics across countries, and the decisions made by FIFA, in particular the number of teams taking part in the competition and the breakdown per confederation as incentives for national associations to develop their women's football team.

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Competitive balance; policy; political and economic determinants; FIFA women's World Cup; gender equality; participation; international sporting success

Introduction

The FIFA (Fédération Internationale de Football Association) women's World Cup organised in France in 2019 was the eighth edition of the competition. The first edition occurred in 1991 in China. Since then, women's football has enjoyed a substantial rise in participation and an increased recognition from international governing bodies (UEFA 2017, FIFA 2019). Concomitant to this development, it has received significant attention from sport academics around the world (Valenti *et al.* 2018).

In their integrative review on women's football studies, Valenti *et al.* (2018) underline that the number of scientific publications has been constantly increasing in the last two decades as researchers have given attention to the development of women's football and its stakeholders. However, they classify only three articles as dealing specifically with policy and none with politics, although some studies (e.g. Jacobs 2014) assigned to economics could have fitted policy. They also agree with

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Williams and Hess (2015) point that any research agenda concerning the relationship between women and football will necessarily contribute to wider understanding of associations between politics, gender and sport. Moreover, they suggest that scholars consider broadening their research focus to include cultures and countries where less research has been conducted, e.g. African, Asian and Latin American countries. *International Journal of Sport Policy and Politics* has recently published some articles on China (Peng *et al.* 2019) and Pakistan (Laar *et al.* 2019) but about football rather than specifically women's football for the former and women in sports in general rather than in football in particular for the latter.

The elements above highlight the need for more international research around the policy and politics of women's football. The present research intends to contribute to this by looking at the policy, political and economic determinants of the evolution of competitive balance in the FIFA women's football World Cups. Competitive balance is a key and well-established concept in sports economics (Szymanski 2003, Valenti *et al.* 2020b). It postulates the necessity of sporting equilibrium between playing strengths to generate outcome uncertainty and thus fan demand. At the very beginning of his article on the economic design of sporting contests, Szymanski (2003) mentions competitive balance as an example of design issues in sport. Other examples underlined by the author are the optimal number of entrants in a competition and the quota of qualifying teams to the football World Cup that should be allocated to the developing nations. These two design issues are relevant to the present paper in the sense that they impact and are impacted by competitive balance, and can be impacted by political aspects.

Investigating the policy, political and economic determinants of the evolution of competitive balance in the FIFA women's football World Cups is an important topic. Indeed, competitive balance may be one factor (among others) explaining why international women's football suffers from a lower fan and media interest than men's, assuming that competitive balance is better in the latter. Nevertheless, international women's football has increased its media attention over the years. This may be related to an increasing competitive balance, which may be the consequence of an increasing participation. The rationale is that more participation is supposed to lead to a larger number of talented players; a larger number of talented players is supposed to lead to more teams having access to talented players; more teams having access to talented players is supposed to lead to a better competitive balance (Schmidt and Berri 2003). In the context of international women's football, this supposes more participation in the different national associations rather than an overall increase in participation coming from a few national associations. This is actually in line with what has occurred in the last decades. This increasing participation in women's football across the world over time may be explained by a number of (sport) policy and political decisions.

In this research, the theoretical framework brings together three different streams of literature: the macro and sports policy factors leading to international sporting success (De Bosscher *et al.* 2006, Jacobs 2014, Valenti *et al.* 2020a); the historical policies and politics of gender equality and women's football across countries (impacting participation or talent pool); as well as the economics and politics of the evolution of competitive balance. Following Grix *et al.* (2018)'s call for work adopting a mixed methods approach, the data relies both on: sources documenting the historical policies and politics of gender equality and women's football, and when possible their impact on participation and international sporting performance across different countries; and the measurement and determinants of the competitive balance in the women's football World Cups over the 1991–2019 period in relation to the former data, the evolution of the number of teams and the allocation of slots between confederations.

The paper reads as follows. The next section reviews the literature on the three different streams used for the theoretical framework before deriving the latter. The methodology applied is then described before presenting the results. The last section provides a discussion of the results, focusing on their theoretical contributions and practical implications as well as limitations opening the door to perspectives for future research.

Literature review

Macro and sports policy factors leading to international sporting success

De Bosscher *et al.* (2006) have suggested a conceptual framework for analysing sports policy factors leading to international sporting success, known as the SPLISS model. Based on their review of the literature at the macro-level, the authors noted that more than 50% of the determinants of success are macro-level variables that are beyond the control of politicians, such as population, gross domestic product (GDP) per capita and climatic circumstances. Recent research confirms this in the Summer Olympic Games (Scelles *et al.* 2020), international women's football (Jacobs 2014) and men's football (Scelles and Andreff 2019). De Bosscher *et al.* (2006) also highlighted that the meso-level contains factors fully or partially determined by sports policies and politics. They underlined that all things being equal, elite athletes will have a greater chance of success subject to the effectiveness of policy and investment decisions made in elite sport. Based on their review of the literature at the meso and micro-level, the authors derived nine pillars, namely: financial support; integrated approach to policy development; foundation & participation; talent identification & development system; athletic & post-career support; training facilities; coaching provision & coach development; (inter)national competition; and scientific research.

Jacobs (2014) and Valenti *et al.* (2020a) tested the impact of some of these pillars on international sporting success in women's football. Using 2006 programme-level data from 139 FIFA member nations, Jacobs (2014) focused on the impact of governance (≥ 3 full time staff, corresponding to professionalisation in national governing bodies), training (≥ 4 senior weekly training sessions), talent development competition and training (respectively having a national youth team (U-20) and ≥ 4 youth weekly training sessions), and initiation/foundation (≥ 7 years of girls' football in schools). She found a significant positive impact of governance, training and talent development (when interacting national youth team and ≥ 4 youth weekly training sessions), and no significant impact of initiation/foundation. She also found a significant positive impact of her proxy for talent pool (female population aged 15–64).

Using data from 55 UEFA (Union of European Football Associations) members over a seven-year period (2011–2017), Valenti *et al.* (2020a) examined the impact of financial support (budget for women's football), human resources (number of full-time staff), coaching provision (senior national team coach licence UEFA Pro) and foundation phase (links clubs-schools). They found a significant positive impact of coaching provision and no significant impact of financial support, human resources (contrary to Jacobs 2014 for governance) and foundation phase (consistent with Jacobs 2014). They also found a significant positive impact of talent pool (total registered players) and their proxy for men's football legacy (FIFA Men's World Ranking points). The results of these two studies only partially support the pillars suggested by De Bosscher *et al.* (2006).

Historical policies and politics of gender equality and women's football across countries

De Bosscher *et al.* (2006)'s nine pillars provide a conceptual framework explaining how a nation can improve its international sporting performance. However, they do not explain specific circumstances that may help or prevent a nation from improving international sporting performance, and why this nation may aim for such improvement. In women's sport in general and women's football in particular, the historical policies and politics of gender equality and women's football represent specific circumstances that may have helped or prevented a nation from improving international sporting performance, and made it aim for such improvement. These policies and politics can be both at international and/or national levels (sometimes because of local initiatives), and both at a macro level (i.e. beyond sport/football) or specific to sport/football.

Specifically in football, a number of historical events helped or prevented nations from improving or even aiming for international sporting performance. At national levels, bans in countries such as England by the Football Association (FA) from 1921 to 1971 (Williams 2011) and France by Vichy

France (French State from 1940 to 1944 during World War II) in 1941 before its official recognition by the French Football Federation (FFF) in 1970 (Prudhomme-Poncet 2003) are a key reason for the late development of women's football in these two countries. This and the fact that England and France have been historically involved in the international development of men's football through their presence in international organisations (FIFA – although England left FIFA from 1927 to 1946 – and UEFA) may also be one reason why international women's football developed lately.

At the international level, important events came from FIFA and UEFA, with FIFA reconsidering its view of not recognising women's football in 1969, then both FIFA and UEFA surveying the status of women's football in national associations in 1971 (Williams 2011). In the same year, UEFA recommended the women's game should be taken under the control of the national associations in each country (BBC 2014).

Beyond the English and French cases, these decisions were supported by other national events and/or policies on gender equality appearing during the same decade in different countries across confederations, although not all were sustained. In 1970, women's football was officially recognised by the West German Football Association due to the fear of losing control over the women's football movement (Pfister 2003). In 1972, there were Title IV in the United States (Markovits and Hellerman 2003); the Norwegian Council for Equal Rights in 1972 (Fasting 2003); the integration of women's football by the Danish and Swedish Football Associations, following the success of BK Femina founded in 1959 and the foundation of the Danish Women's Football Union in 1963 in the first case (Brus and Trangbæk 2003), local initiatives from 1965, maybe inspired by Denmark in the second case (Hjelm and Olofsson 2003); the merger between the Italian Women's Football Federation founded in 1968 and the Italian Female Football Sports Federation founded in 1970, the latter having welcomed 10 clubs abandoning the former and the merger leading to the United Women's Football Sports Federation (Matteucci 2012).

Cases extended beyond the United States and Europe. In New Zealand, women's football was established as an organised sport in the early 1970s, before being the fastest growing sport for women despite a general lack of acceptance in clubs and the school system (Cox and Thompson 2003). In Nigeria, women's football appeared in 1978 with The 'Sugar Babes' Ladies FC, disbanded a few years later with the idea that the country was not ready for women's football and FIFA not supportive, along with social and religious resistance (Saavedra 2003). In Brazil, football was forbidden to women by law until 1979 then women's football developed but suffered from a lack of support due to the competition from men's football (Votre and Mourão 2003).

A number of cases could also be identified in Asia. In China, the liberalisation from 1976 led physical education teachers to teach girls to play football in Xi'an city in 1979, attracting attention of the media and the provincial educational authorities then inspiring others in the next few years (Hong and Mangan 2003). This led to the First National Women's Soccer Tournament in Guangdong in 1981 then a number of women's football teams emerged across the country, before Chinese women took part in the Asian Women's Football Championships from the mid-1980s and dominated it in 1986, resulting in the creation of a national women's football team (Jinxia and Mangan 2002). In Japan, women's football developed later than in the countries described previously. Indeed, a handful of women's club teams had been established in the early to mid-1980s, before being aggressively sponsored by companies and taking part in the Japan Ladies Super League (JLSL) inaugurated in 1989, four years after the passage of the Equal Employment Opportunity Law (Edwards 2013). In Chinese Taipei (Taiwan), the development of sport (in general rather than women's football in particular) suffered from a difficult political period from 1970 to 1984, with Japan from 1972 then the United States from 1978 supporting China in its struggle with the country, before an improvement in the situation from 1985 (Slack *et al.* 2002).

The 12 countries (other than England and France) mentioned above have not been chosen randomly: they were the 12 national teams taking part in the first FIFA women's World Cup in 1991. From the elements provided, some countries appear as having started to favour the development of women's football two decades before the first official World Cup, namely (West) Germany,

the United States, Norway, Denmark, Sweden and Italy; some others appear as having started to favour it later, namely China from the early 1980s and Japan from the late 1980s; others appear as having not particularly supported women's football, namely New Zealand, Nigeria and Brazil (no information specific to women's football for Chinese Taipei, constrained in the development of sport until 1985). These differing policies towards gender equality and women's football are supposed to have affected participation and, in turn, competitive balance in the first FIFA women's World Cup.

Economics and politics of the evolution of competitive balance

The literature on competitive balance has investigated a number of determinants, including talent pool and its evolution that are of particular interest for the present research. On this topic, the elements developed by Schmidt and Berri (2003) for professional leagues can be adapted to national team competitions. Under the hypothesis that there is no naturalisation (which seems realistic for international women's football), a national team has a fixed number of places to be filled from an eligible playing population (the talent pool in the country). Recruitment will be from the right tail of the distribution of talent in the country under investigation. If some countries taking part in a competition have a large talent pool while the others have a small talent pool, there is liable to be a significant difference in ability between the players in the former countries and those in the latter countries. As such, competitive imbalance is expected in the competition under investigation. However, if the talent pool increases in the countries with a smaller one (or even in all countries), the difference between countries becomes less pronounced (even with an increasing talent pool, the countries having already initially a large talent pool do not experience an increase in their ability as strong as the countries having initially a small talent pool). The gap in level of talent between national teams is then smaller and competitive balance improves. The present research aims to verify that this is what happened in the FIFA women's World Cups over time.

However, the evolution of the competitive balance in a World Cup does not only depend on the respective evolutions of the countries' talent pools and subsequent abilities that may also be affected by their level of expatriate players (see e.g. Berlinschi *et al.* 2013 in international men's football). Indeed, it also depends on (at least) two other factors suggested by Szymanski (2003). The first factor is the number of teams taking part in the competition: increasing the number of teams is supposed to deteriorate competitive balance due to the additional teams being supposedly of lower sporting standard compared to the others. Nevertheless, it may be the case that the number of teams is suboptimal, i.e. could be increased given the number of teams that would be credible competitors for a World Cup. This is one of the reasons provided by FIFA President Gianni Infantino to justify the move from 24 to 32 teams in the women's World Cup from 2023; another being that more teams will start the qualifying phase with the hope to qualify for the World Cup and, as such, an incentive to produce more effort in the organisation of their women's football programme (and on the pitch), ultimately leading to the development of their playing strengths (FIFA 2019). An unofficial reason may be rather economic and political with the wish to enable the participation and please more national associations and confederations, leading to more markets reached and games broadcast (economic) as well as more support for a potential re-election (political).

The second factor affecting the evolution of competitive balance in a World Cup corresponds to how many slots are allocated to the different confederations. Bar-On and Escobedo (2019) argue that FIFA exacerbated a colonialist legacy by favouring European and South American above African, Asian, Central and North American and Caribbean (CONCACAF), and Oceanian members in the allotment of men's World Cup slots. They consider that it '*remains a decidedly Westerncentric/Eurocentric, or South American affair. In short, the way World Cup berths are divided regionally is a concrete manifestation of Eurocentrism (including the propagation of European values and models in parts of the Americas)*' (Bar-On and Escobedo 2019, p. 47). To a certain extent, this can be applied to the FIFA women's World Cup. However, another (not necessarily contradictory) way to explain the allocation of World Cup berths is to consider the respective sporting strengths of the different

confederations. In order to optimise the sporting level of the World Cup and its competitive balance, FIFA would have to allocate the number of slots so that the best teams take part in the competition. This might lead to one or two confederations having most or all slots, while others would have only one or even none slot. More realistically, FIFA allocates the slots to the different confederations based on sporting but also political variables (i.e. at least one slot per confederation – or half for Oceania for the men's World Cup).

Theoretical framework

Based on the literature, it is expected that, at a country level, domestic (sport/football) politics – that can be influenced by international (sport/football) politics – impacts (past and present) gender equality (in sport/football) which, in turn, impacts sport/football policies on women's football and, ultimately, participation (talent pool). Together with economic development, men's football legacy and expatriation, participation impacts the country's international sporting performance. The respective international sporting performances of the different countries taking part in an international competition determine its competitive balance. As such, their respective talent pools, economic developments, men's football legacies and expatriation levels enable to explain such competitive balance. In a longitudinal perspective, the increase in the respective talent pools of the different countries is expected to lead to an increase in the competitive balance of the international competition under investigation. However, its competitive balance also depends on the number of teams taking part in the competition and how many slots are allocated to the different confederations. These elements partially depend on international football politics.

Methodology

The methodology corresponds to a mixed methods approach. It is based on the measurement of the competitive balance in the women's football World Cups over the 1991–2019 period and a documentary analysis helping identify the determinants explaining its evolution over time, these determinants being tested with an econometric model. The method to measure competitive balance in FIFA World Cups is presented first, followed by a description of the proxies and sources for its policy, political and economic determinants.

Measuring competitive balance in the FIFA World Cups: absolute goal difference and intra-match competitive balance

In the literature, indicators usually measure competitive balance at a national league level. As such, they are appropriate for a large number of games per team per season (e.g. 34 or 38 games in the main European men's football leagues) associated to a league ranking. Nevertheless, such indicators are not the most relevant to evaluate competitive balance in competitions with a small number of games as this is the case for national associations (no more than three games per team in the World Cup group stage). Besides, previous indicators based on a league ranking are not appropriate when games are organised as a knockout stage as this is the case after the initial group stage in the World Cup. It is necessary to rely on indicators specifically adapted for competitions with national associations. This means that match measures are more appropriate. Two match measures are used, a measure at the end of the match corresponding to the absolute goal difference between teams, and an intra-match measure corresponding to the percentage of game-time with a score difference of no more than one goal between the two teams can be used (Scelles *et al.* 2011). This percentage corresponds to the cumulative game-time with a score difference of no more than one goal across all games, divided by the cumulative duration of these different games. This measure can be applied to games associated to a ranking, meaning that it is possible to have an overall measure of intra-match competitive balance for the World Cup.

In an hypothetical competition with only two games, one lasting 90 minutes of which 60 correspond to a score difference of no more than one goal (e.g. 2–0 from the 45th minute then 2–1 from the 75th minute), and the other lasting 120 minutes of which 108 correspond to a score difference of no more than one goal (e.g. 1–1 at the end of the normal time then 3–1 from the 108th minute), the intra-match competitive balance of the competition is $(60 + 108)/(90 + 120) = 80\%$. Such calculation can also be applied at the team level to observe whether games played by a given team are balanced or not, which provides an indication of whether this team is at the sporting standard expected for the competition.

In this article, competitive balance is measured for each FIFA women's World Cup from 1991 to 2019 (n = 284 games: 26 in 1991 and 1995, 32 from 1999 to 2011, 52 in 2015 and 2019), for both the overall competition and at team level. Data needed for the calculations are the scores for the absolute goal difference, and the times when goals were scored in the different games and their duration for intra-match competitive balance. In football, the duration of the games is usually either 90 minutes (no extra time) or 120 minutes (extra time). However, during the 1991 FIFA women's World Cup, games lasted 80 minutes (no extra time) or 100 minutes (extra time). Data were found on the official FIFA website.

Explaining competitive balance in the FIFA women's World Cups

The literature review and subsequent theoretical framework identify the policy, political and economic determinants of competitive balance in FIFA women's World Cups listed in Table 1. This table also provides their proxies and the sources where such information was found. Policies on gender equality and women's football up to the first FIFA women's World Cup in 1991 have already been identified for the 12 countries taking part in this edition in the literature review. Additional policies will be highlighted in the results, with a view to connecting them to their impact on participation in women's football. Unfortunately, the review of FIFA documents and the literature did not enable the identification of (reliable) participation data in women's football in the different countries of interest over the period studied, except in 2019. This means that it can only be assumed that policies on gender equality and women's football were successful if a country improves its sporting level and unsuccessful if not. It is still possible to connect such success or not to a country's population – which is an indicator of how many players it can expect – and how it compares to other countries.

Economic development, men's football legacy and expatriate players will be observed in addition to the previous determinants to interpret the international sporting performance of the different countries in women's football at a specific point in time. The number of teams (12 in 1991 and 1995, 16 from 1999 to 2011, 24 in 2015 and 2019) and the breakdown per confederation will also be discussed, with a view to assessing whether they were appropriate. The assessment of such appropriateness will be based on how many teams were at the sporting standard expected for a World Cup

Table 1. Policy, political and economic determinants of competitive balance.

Determinant	Proxy	Source(s)
Gender equality policy	Policy on gender equality and women's football	Literature
Participation	Female players playing organised football	FIFA and literature
Population	Number of inhabitants	United Nations (Office for National Statistics for the UK)
Economic development	Gross domestic product per capita, purchasing power parity	International Monetary Fund and United Nations (Office for National Statistics in the UK)
Men's football legacy	FIFA Men's World Ranking points	FIFA
Expatriate players	Number of expatriate players	
Number of teams	Number of teams	
Breakdown per confederation	Number of teams per confederation	

Table 2. Descriptive statistics (absolute values).

Variable	Mean	Standard deviation
Goal difference	2.09	1.98
Home advantage	0.13	0.34
Gender equality policy	0.50	0.63
Population	1.85	1.40
GDP per capita	0.95	0.88
Men's football legacy	32.34	31.75
Expatriate players	0.18	0.19

GDP per capita not available for North Korea so descriptive statistics based on 271 instead of 284 observations.

at a specific point in time, as well as the 'political' requirement of having countries from the different confederations.

In addition to the discussion of how the determinants identified above have impacted women's football in different countries and ultimately competitive balance in the FIFA women's World Cups, an econometric model is developed to back such discussion. A game-level goal difference equation inspired by Scelles and Andreff (2019) is specified and then estimated with the following variables:

- Home advantage: 1 if team i plays home, -1 if team j plays home, 0 otherwise.
- Gender equality policy: $(GEP_i - GEP_j) / \min(GEP_i, GEP_j)$,

with GEP the number of years since the implementation of the gender equality policy. Because it is expected that as time passes, more and more countries are able to reduce the initial negative impact of their later support, the difference between two countries is divided by the lowest value.

- Population: $(\log POP_i - \log POP_j)$.
- GDP per capita: $(\log GDP_i - \log GDP_j)$.
- Men's football legacy: $(MFL_i - MFL_j)$,

with MFL the FIFA ranking of the national men's football team. Due to the FIFA ranking of national men's football teams existing only since December 1992, the 1992 ranking is used for the 1991 FIFA women's World Cup.

- Expatriate players: $(EXP_i - EXP_j)$,

with EXP the percentage of expatriate players.

A positive impact on goal difference is expected for each variable (negative sign for men's football legacy since a better ranking is associated with a lower number). For example, it is expected that the higher the difference in population between the nations of the two contestants, the higher the goal difference (lower competitive balance). Table 2 provides descriptive statistics. The collinearity diagnostic does not identify issues with multicollinearity ($VIFs < 2$).

Results

The results provides first an overview of the evolution of competitive balance in the FIFA women's World Cups. We then describe the results of the econometric model. The third subsection focuses on the first edition. The fourth and last subsection analyses the determinants of the evolution of competitive balance.

Evolution of competitive balance in the FIFA women's World Cups: overview

Figure 1 represents the evolution of the goal difference, while Figure 2 represents the evolution of the intra-match competitive balance in the FIFA women's World Cups over the 1991–2019 period. They show that competitive balance has increased over time, moving from an initial goal difference of 2.81 and 63.4% of game-time with a difference of no more than one goal between teams in 1991 to a goal difference lower than 2 and an intra-match competitive balance around 80% over the 2010 decade. For goal difference, the decreases compared to 1991 start to be statistically significant in 2011 (at 10% in 2011 and 5% in 2015) but the difference between 1991 and 2019 is not significant. For intra-match competitive balance, the increases compared to 1991 start to be statistically significant in 2003 (at least at 5% except in 2007, at 10%). Both cases are based on one-tailed Kruskal-Wallis tests for non-normal data since Shapiro-Wilk tests show that data are not normal. For intra-match competitive balance, there is also a statistically significant increase (at 5%) between 1999 and

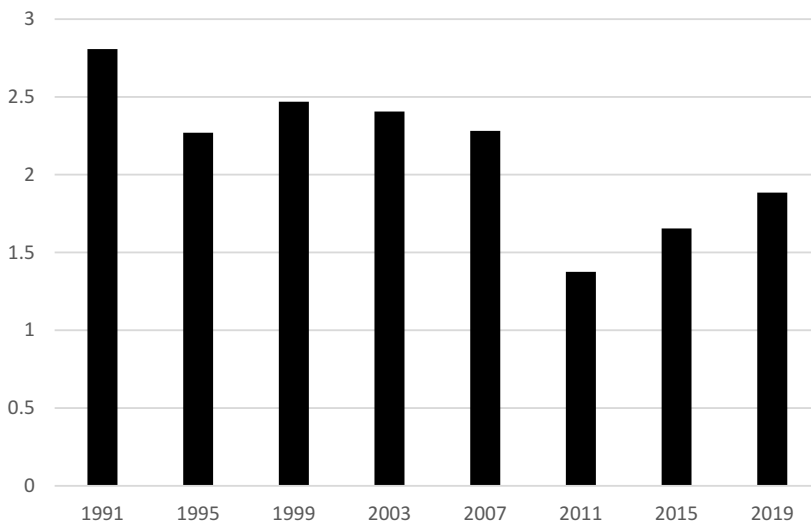


Figure 1. Evolution of goal difference in FIFA women's World Cups.

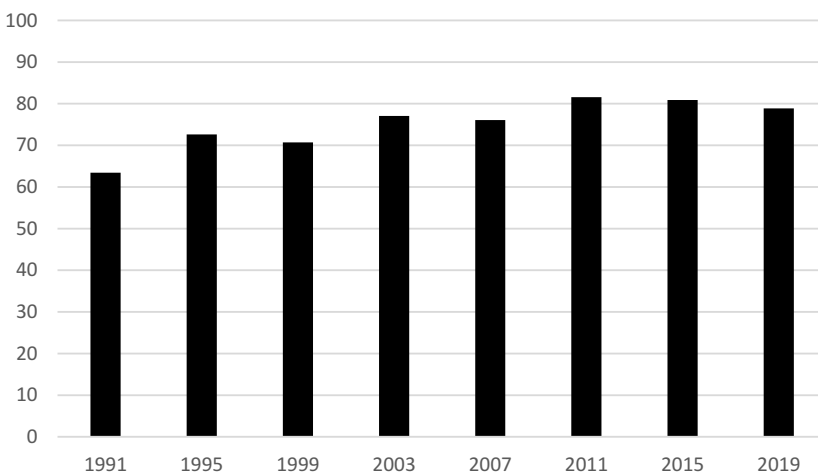


Figure 2. Evolution of intra-match competitive balance in FIFA women's World Cups (in %).

2011, i.e. the first and last editions with 16 teams. Results are consistent with the idea that the growing participation internationally over time translates in a better quality of the different playing strengths that, ultimately, leads to a better competitive balance. For comparative purposes, it is worth noting that the intra-match competitive balance in the FIFA men's World Cups over the 1990–2018 period was between 84.6% and 89.8%. This means that women's football got closer and closer to men's football over time.

Determinants of competitive balance in the FIFA women's World Cups: econometric results

Table 3 provides the results of the econometric model based on a robust ordinary least squares regression, the heteroscedasticity test having detected the presence of such heteroscedasticity. All determinants have a significant positive impact on goal difference, meaning that the differences between countries have a significant negative impact on competitive balance, with the exception of home advantage, not significant. This result is in contrast with recent findings from Scelles and Andreff (2019) in international men's football, although these authors do not cover World Cups. The results mean that the countries performing better in women's football are the ones that implemented their gender equality policy earlier, have higher population and GDP per country, better men's football performance and more expatriate players.

Focus on the first FIFA women's World Cup in 1991

Figures 1 and 2 show that competitive balance was lower in the first FIFA women's World Cup in 1991 than in the following ones. To understand why this was the case, it is relevant to observe competitive balance per country. Five teams were not at the level expected for a World Cup: New Zealand (intra-match competitive balance = 39.2%); Brazil and Japan that were in the same group (intra-match competitive balance without the game against Japan = 56.9% for Brazil, without the game against Brazil = 30% for Japan); Chinese Taipei and Nigeria that were also in the same group (intra-match competitive balance in the group stage without the game against Nigeria = 31.3% for Chinese Taipei, without the game against Chinese Taipei = 70% for Nigeria). Chinese Taipei qualified for the quarter-finals where they lost 7–0 against the United States. The low sporting level of these five countries is consistent with their late or lack of support for the development of women's football identified in the literature review.

China had also a late development of women's football compared to the six other 'successful' countries (the United States and the five European countries, i.e. Norway, Sweden, Germany, Denmark and Italy), counterbalanced by its large population. The 'success' of the United States and the five European countries is consistent with the idea of a positive impact of policies on gender equality and women's football, economic development and men's football legacy, except for the United States and to a lesser extent Norway for the latter. Commenting on these two countries and China, Markovits and Hellerman (2003, p. 14) argue that '*women succeeded precisely in countries*

Table 3. Results of robust ordinary least squares regression explaining goal difference.

Variable	Coefficient (standard error in brackets) and significance
Home advantage	0.34 (0.31)
Gender equality policy	0.97 (0.29) ***
Population	0.38 (0.07) ***
GDP per capita	0.59 (0.17) ***
Men's football legacy	−0.02 (0.003) ***
Expatriate players	1.25 (0.63) **
Constant	0.44 (0.14) ***
Observations	271
R ²	0.33

** p < .05; *** p < .01.

where soccer [football] was not completely occupied by men, and thus did not fully constitute what we have termed [...] “hegemonic sports culture”.’ This is in contrast with the findings from Valenti *et al.* (2020a) and our econometric model.

Beyond these considerations, a question is to know whether the competitive balance of the first women’s World Cup could have been better with another breakdown per confederation. In 1991, the breakdown was 5 countries from Europe, 3 from Asia, 1 from Africa, 1 from CONCACAF, 1 from Oceania and 1 from South America. To assess whether some teams that did not qualify may have been better than some that took part, it is necessary to look at results during the qualifiers in the different confederations. As mentioned above, Nigeria (Africa), New Zealand (Oceania) and Brazil (South America) were not at the standard expected, despite being the best countries in their respective confederations. In Africa, South Africa suffered from apartheid with segregation not only by race but also by sex, and football was excluded from the activities encouraged for girls (Saavedra 2003). In Oceania, Australia was close to New Zealand. Women’s football developed in the 1960s and early 1970s in states there then reached a national outlook from 1974 but lacked support (Downes *et al.* 2015). In South America, Wood (2018, p. 573) notes that:

Paradoxically, the existence of a ban on women’s football in Brazil meant that when this was removed, under President Geisel’s policy of *distensão* in 1979, the impact was more significant than in countries where the relaxation of restrictions on women’s roles was less clearly marked.

This may be one explanation why South American countries such as Argentina and Chile were not able to compete with Brazil in the early 1990s in women’s football, despite the latter being not among the strongest national teams worldwide.

Although the elements developed here suggest that some confederations should maybe not have had a slot for the first FIFA women’s World Cup based on sporting performance, the reality is that each confederation must have at least one slot due to political, economic and sport development reasons, respectively: pleasing each confederation to have their support in future decisions and elections; reaching markets in the different regions of the world; and supporting the development of the sport everywhere by creating an incentive for teams to play their best. An exception in men’s football is Oceania that has half a slot, i.e. the best Oceanian team has to win a playoff against a team from another confederation to qualify for the World Cup. In women’s football, Oceania has always had one slot, maybe not justified from a sporting perspective in 1991, although the same was arguably true for Africa and South America.

In CONCACAF, the United States were the only credible competitor, with Canada being far from their level (defeated 5–0 in the qualifiers final) despite the explosion in popularity of football by the 1960s among children and youth, including girls there, and the Canadian Minor Soccer Association having voted to promote girls’ soccer at the interprovincial level in 1977 (Ann Hall 2003). In Asia, Chinese Taipei and Japan were not at the standard expected. However, due to China hosting the World Cup, at least a second slot was due to Asia. North Korea (Korea DPR) lost only 1–0 against China in the Asian qualifiers but still failed to qualify for the World Cup, being eliminated by Chinese Taipei (on penalties). The first women’s football team was launched in North Korea in 1980 in indifference, with a perception of a disgrace to the elegance of Korean women (Confucianism) and decadent leisure sport played in capitalist countries (Hong 2012). However, women’s football obtained political support from Kim Jong-il in 1989 (Lee and Bairner 2009). By contrast, South Korea (Korea Republic) was way behind the other Asian teams mentioned here. Yet, a high school team was established in Jeon-Ju as early as in 1969, followed by six more teams in the early 1970s then the First National Women’s Football Games in 1974 (Koh 2003). Nevertheless, Koh (2003) underlines a resistance from football authorities, the public and the media, then women’s football could not enhance national prestige at an international level in the 1980s.

The five European teams were at the level expected, while some others not qualified were close, such as Hungary, the Netherlands and England (countries with a favourable economic development like the five others – to a lesser extent for Hungary but the country was still in the first quarter

worldwide – and men's football legacy). In the Netherlands, the ban on women's football was lifted in the 1970s but little was then done to promote women's football, leading to a very slow growth (Knoppers and Anthonissen 2003). Knoppers and Anthonissen (2003) also note that women's football was devalued by different actors such as players of mixed leagues, media, parents, coaches, and peers. In England, despite the ban being lifted in 1971 and the Sex Discrimination Act in 1975 (drafted with intention to exempt football), there was still a resistance from the FA against UEFA directives (Williams 2003). In 1991, the FA was still to take control of women's football since this occurred as late as in 1993 (Williams 2003, Bell 2019). Despite France becoming later one of the best European countries in women's football, it was not the case in 1991. One reason is the stigma of football as a masculine sport that endured until very recently (Krasnoff 2019). Women's football in Spain also suffered from this stigma, with the sport being only in the 'kick-off' phase in the late 1990s (Scraton *et al.* 1999).

In spite of the constraints to the development of women's football in these different European countries, maybe Europe may have had one or two additional slots in the first World Cup at the expense of Asia and Oceania. Nevertheless, this would have meant one confederation with half or more of the slots, Asia with only two slots while organising the event and Oceania without slot. Given these elements, FIFA probably made the most rationale choice, having considered both its sporting and political dimensions.

Explaining the evolution of competitive balance in the FIFA women's World Cups

Figures 1 and 2 indicate that competitive balance in the FIFA women's World Cups improved after the first edition. One of the reasons is the continual improvement of some countries that were not at the level expected in 1991 or even did not qualify, such as Brazil for the first case and Australia for the second. For Brazil, this was despite the fact that, according to Votre and Mourão (2003, p. 265), *'In the 1990s women's football decayed year by year. Beyond first division clubs, second division ones closed the doors to women's football. Paradoxically, Brazilian players were recognized abroad, but there was no more room for them in Brazil.'* This recognition and migration abroad, in particular in the United States as illustrated by the example of Juliana Cabral (Knijnik 2013), may be one explanation why Brazil was able to improve over time in spite of a difficult domestic context for women's football. For Australia, the lack of support noted previously did not prevent women's football from continuing its development, with youth championships appearing in 1985 and a national league established in 1996, folding in 2004 due to the demise of Soccer Australia (SA) before another league (the W-league) was established in 2008 (Downes *et al.* 2015).

As a country with a large population and a favourable economic development but a men's football legacy not as strong as most countries mentioned above, Japan is also an interesting case. After being not at the standard expected in 1991, the country improved in 1995 (quarter-finals) but went down in 1999 (group stage, intra-match competitive balance = 62.2%). Edwards (2013) describes the gap between the image conveyed of women football players benefiting from sponsoring from large companies and even 'professional contracts' (*puro keiyaku*) in the late 1990s, and a reality where the new contracts made it possible for companies to immediately terminate players' employment when a team folded, which occurred suddenly and unexpectedly for several teams in 1999. Despite a reality not as positive as the image conveyed, Japan was able to improve in the 2000s and eventually became World Champion in 2011.

Nigeria (the most populated African country) had also a pattern of improving – in 1999 (quarter-finals) rather than 1995 (group stage, intra-match competitive balance = 65.6%) – going down (in 2003; group stage, intra-match competitive balance = 60.7%) then improving again (from 2007). Saavedra (2003) notes that women's football flourished in the country in the 1990s and continued to experience success and growth in popularity in the early 2000s but had to face political resistance. With an alternative focus, Onwumechli (2011) emphasises that the rise of urbanisation in Nigeria has

favoured the development of women's football. This may be one explanation for its continual improvement since 2003.

The four countries mentioned above illustrate the international development of women's football, which goes far beyond these few cases. Along with political and economic criteria, it can justify the increase in the number of teams taking part in the FIFA women's World Cup over time. The increases from 1995 to 1999 (12 to 16 teams) and 2011 to 2015 (16 to 24 teams) did not result in a decrease in competitive balance, consistent with the idea of a continual international development of women's football.

The evolution of the breakdown per confederation was in line with the initial one. In 2019, the breakdown was 9 countries from Europe including the host country France (8 in 2015, 5 in 1991), 5 from Asia (3 in 1991 including the host country China), 3.5 from CONCACAF (4.5 in 2015 when Canada was the host country, 1 in 1991), 3 from Africa (1 in 1991), 2.5 from South America (1 in 1991) and 1 from Oceania (similar to 1991). Following the CONCACAF-CONMEBOL playoff won by Argentina against Panama, 3 countries from CONCACAF and 3 from South America took part. A question is to assess whether this breakdown prevented the FIFA women's World Cup from suffering from teams lowering its competitive balance.

In 2015, Ecuador (country with the lowest participation in women's football – 1,356 players – among the countries taking part in the 2015 World Cup based on 2019 data; FIFA 2019), Ivory Coast (data not available for participation, large population but limited economic development) and Thailand (25,000 players but limited men's football legacy) were not at the level expected (group stage for all three, intra-match competitive balance = 63.3% for Ecuador, 56.7% for Ivory Coast and 60% for Thailand). However, it may be argued that it was not due to a level insufficiently high *per se* for Ecuador (close to Colombia that qualified for the round of 16) and Ivory Coast (close to Cameroon that also qualified for the round of 16) but only during the World Cup itself; while North Korea (banned due to doping cases in the 2011 World Cup) should probably have replaced Thailand for Asia on a sporting basis.

In 2019, Jamaica (country with the second lowest participation in women's football – 4,000 players – among the countries taking part in the 2019 World Cup) and Thailand again were not at the level expected (group stage for both, intra-match competitive balance = 50.7% for Jamaica and 44.1% for Thailand). However, it may be argued again that it was not due to a level insufficiently high *per se*, with Jamaica losing only 2–0 against Canada in the CONCACAF qualifiers after a fairly balanced game (Canada qualified for the round of 16) and Thailand being close to Australia (that also qualified for the round of 16).

Despite being the country with the lowest participation in women's football – 1,517 players – among the countries taking part in the 2019 World Cup, Cameroon qualified for the round of 16 in 2015 and 2019. The country seems to counterbalance its low participation by a large proportion of players playing abroad (13 in 2015 and 15 in 2019, out of 23). In the end, the number of teams and the breakdown per confederation could be deemed appropriate in 2015 and 2019.

Discussion

The discussion focuses on the theoretical contributions and practical implications of the results, before acknowledging their limitations and providing some perspectives for future research.

Theoretical contributions

The paper has been built from three different streams of literature. The theoretical framework and subsequent results contribute to link them together. The paper also contributes to each individual stream.

For the first stream on the macro and sports policy factors leading to international sporting success, the main contribution is the identification that player migration has a positive impact on

international sporting performance in women's football, as illustrated by the examples of Brazil and Cameroon. Although this is not a new result in international football, this is the first time that this is evidenced in women's football.

For the second stream on the historical policies and politics of gender equality and women's football across countries, the paper contributes to evidence their positive impact on international sporting performance. In particular, the countries (the United States and some European countries) where policies appeared earlier than in others (i.e. early 1970s) and were sustained, were competitive from the first FIFA women's World Cup. During this edition, the only country that was also competitive despite a later support was the hosting country China, able to draw on its huge population. As time passes, more and more countries were able to reduce the initial negative impact of their later support.

For the third stream on the economics and politics of the evolution of competitive balance, the paper contributes to a better understanding of the relationship between (sport) policy and politics, participation and competitive balance at an international level. Previous literature had already investigated the relationships between (sport) policy and politics and participation, and between the latter and competitive balance, at a country level for both relationships. By exploring the relationship between the three aspects at an international level, the paper highlights the benefits of approaching competitive balance not only from an economic but also from a policy and political angle. In particular, the paper emphasises how different national (sport) policies ultimately impact competitive balance in an international competition. It also underlines the impact on competitive balance of the decisions made by an international sport governing body (i.e. FIFA) on the number of teams and the breakdown per confederation, acknowledging that such decisions have a political dimension.

Practical implications

The paper has practical implications in relation to the impact of the decisions made by FIFA on the competitive balance of its women's World Cup. Indeed, FIFA could use competitive balance indicators to support its decisions. This can be illustrated with the case of the 2023 women's World Cup. As mentioned previously, the number of teams will move from 24 to 32 in 2023. Beyond the political, economic and sport development reasons, it is worth anticipating the potential impact on the competitive balance of the competition. The breakdown per confederation will be one factor (among others) that will determine the impact of the increasing number of teams on competitive balance. At the time of writing the paper, this breakdown has still to be defined. Considering competitive balance between and within confederations can help decide which breakdown is the most appropriate. The 2019 FIFA women's World Cup suggests that there is the potential for competitive balance between all 24 participants from all confederations. The question is to know how many countries per confederation have a level close to the countries representing a given confederation in the 2019 World Cup, based on the qualifiers.

In Africa, nine teams were not far from those taking part in the 2019 World Cup and/or close to each other (goal difference of no more than one): Mali, Ghana, Algeria, Zambia, Ivory Coast, Morocco, Senegal, Tanzania and Zimbabwe. In Asia, this was the case for two teams: North Korea was eliminated during the qualifiers due to it having to face South Korea (similar level) rather than an insufficient sporting level, while Chinese Taipei was close to Thailand. In CONCACAF, two teams (Panama and Costa Rica) were close to Jamaica. In Europe, seven teams were not far from those taking part: Wales, Switzerland, Republic of Ireland, Denmark, Ukraine, Iceland and Belgium. In Oceania, New Zealand was clearly above the other teams. In South America, two teams (Colombia and Paraguay) were close to Chile.

Based on these elements, a suggestion could be to add 3 teams from Africa, 2 from Europe, 1.5 from South America, 1 from Asia and 0.5 from CONCACAF. This would lead to the following breakdown: 10 teams from Europe, 6 from Africa, 6 from Asia, 4 from CONCACAF, 4 from South America, 1

from Oceania (likely New Zealand) and the hosting country. If New Zealand is the hosting country (as this will be the case in 2023 with Australia), an adaptation could be 5.5 slots for Africa (2.5 instead of 3 additional slots, still the highest increase) and 0.5 for Oceania.

Limitations and future research

It must be acknowledged that the paper has some limitations, opening the door to perspectives for future research. A first limitation is the lack of longitudinal data on participation across countries. It has been assumed that historical policies and politics on gender equality and women's football had a positive impact on participation. It remains to measure the exact extent of this impact, as well as identify the additional factors needed to support and sustain such impact.

A second limitation is that, despite the use of game-level data in the econometric model, game variables such as player or coach experience, injuries, suspensions, weather or stage of competition have not been used. Future research may add these variables.

A third limitation is the absence of an econometric model testing the impact of competitive balance on fan demand. Such tests have already been extensively done in the sports economics literature. However, they have not been applied yet to international competitions such as World Cups or continental championships. Designing them in such contexts would help understand the trade-off between identification to domestic teams and demand for competitive balance from the fan perspective.

A fourth limitation is the lack of a more in depth analysis of the policies and politics on gender equality and women's football both within and across countries. Due to the ambition to tackle different countries from the six confederations and the primary focus on competitive balance, it has not been possible to develop further these dimensions in the paper. More work is needed to better understand and explain the influence of the political context, as well as the policy process rather than considering it as a 'black box' (Henry *et al.* 2020).

In line with the fourth limitation, the fifth and last one is the objectivist position and subsequent positivist perspective adopted in the paper. Grix (2002) highlights how adopting a specific ontological position ('objectivism' vs. 'constructivism') and subsequent epistemological perspective ('positivism' vs. 'interpretivism') influences the methodology, methods and sources chosen in a research. In the present study, it has been assumed that policies and politics have an objective existence, without considering the subjective meaning perceived by different actors (Viollet *et al.* 2016). Such subjective perceptions are likely to influence the engagement of the actors in the policy process, thus affecting its impact (Viollet *et al.* 2020). In the same vein, it has been considered that competitive balance has an objective existence and can be measured without asking fans for their perception. As an alternative to this positive approach, recent research has been interested in competitive balance as perceived by fans (e.g. Pawlowski *et al.* 2018). Mixing objectively measured and subjectively perceived elements may help better understand and explain the policy, political and economic determinants of the evolution of competitive balance in the FIFA women's football World Cups and other competitions.

Disclosure statement

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