Crime, Law and Social Change
https://doi.org/10.1007/s10611-021-09971-0

At risk: betting-related match-fixing in Brazilian football

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Accepted: 17 May 2021
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Abstract

Brazilian football is strongly affected by betting-related match-fixing, as indicated by numerous incidents over the past years. However, little remains known about the underlying factors that contribute to the country's vulnerability towards this form of corruption in sport. Hence, this study applies the lens of sociological institutionalism to examine some of the risk factors that make Brazilian football susceptible to betting-related match-fixing. An exploratory multi-methods study design was applied, including the analysis of policy and judicial documents and semi-structured interviews with key anti-match-fixing actors ($n=7$) and sport actors ($n=15$) in Brazilian football. Content analysis highlights the influence of deeply rooted characteristics and institutionalized norms in Brazilian football, such as a low prioritization of counteracting match-fixing, many unmonitored matches, poorly governed sport organizations, and poor working conditions for players and referees. In the end, this study helps to gain a better understanding of betting-related match-fixing in Latin America, while informing criminal policy to address and prevent this issue.

Introduction

As a form of corruption in sport, match-fixing – which is also regularly called manipulation of sport events or competitions – is considered a major threat to the integrity of sport and those involved [1–4]. According to the influential and widespread definition of the Council of Europe's [5, p. 3] Macolin Convention, match-fixing can be defined as:

> An intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sports competition in order to remove all or part of

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Published online: 21 May 2021

the unpredictable nature of the aforementioned sports competition with a view to obtaining an undue advantage for oneself or for others.

Although multiple different types of match-fixing have been identified, a distinction is often made between betting-related and non-betting (or sporting-related) match-fixing [6]. While betting related match-fixing aims to manipulate sport to gain money on the (il)legal betting markets, non-betting related match-fixing focuses on obtaining an (assumed) advantage on the sporting field by arrangement (e.g., asking another team to let your team win to avoid relegation to a lower division or loosing deliberately to avoid a strong opponent in the next round of a competition) [6–8]. Despite its interesting character and the growing research attention for this phenomenon (see e.g., [3, 9, 10]), non-betting related match-fixing will remain beyond the scope of this study.

The scientific literature on betting-related match-fixing has expanded rapidly over recent years, indicating that no sport or country is immune [11]. More precisely, the causes of match-fixing have been examined using a range of theories and methods with the majority focusing on rational choice theory [6–8, 11]. At the same time, recent work has highlighted several important issues and research gaps with regard to betting-related match-fixing scholarship: (1) the importance of identifying and analyzing the uniqueness of contexts where match-fixing occurs, particularly given that research to date has largely focused on Europe and Asia [11, 12], (2) the potential of sociological institutionalism as a framework of analysis [8], and (3) the value of identifying the risk factors, as related to, but distinct from, the causes of betting-related match-fixing in order to gain both a better understanding and to inform policy to address match-fixing [1, 13]. More precisely, research on risk factors can help to prevent betting-related match-fixing by dealing with these factors before they can turn into actual causes.

With these elements in mind, this study examines betting-related match-fixing within Brazilian football with a focus on identifying risk factors that might position this particular socio-cultural context as being susceptible to this form of corruption in sport. The following research question is thereby put forward: what are some of the major institutional, individual, and cultural factors that help to explain the vulnerability of Brazilian football towards betting-related match-fixing? According to different sources, football remains one of the main targets of fixers, because it is the sport that drives the largest financial volumes, estimated to represent between 70 to 85% of the total amounts of bets placed worldwide [14, 15]. In light of this global context, some characteristics of Brazilian football – the largest sport market in Latin America according to the director of Sportradar in Latin America – make the country a unique target for match-fixers. Brazilian football counts the world's largest number of official matches played each year, while the country has a long track record of corruption cases in different types of public institutions and sport organizations [16–18].

As such, it is not surprising that Brazilian football has regularly been impacted by match-fixing over the past fifteen years [17]. The most famous case – *Whistle Mafia* – occurred in the Brazilian National League (i.e., First Division) in 2005, when referees Edilson Pereira de Carvalho and José Paulo Danelon received bribes from the

entrepreneur Nagib Fayad (Giba) to fix 11 matches. This case was discovered by the Federal Police thanks to phone tapping of bettors and referees [19]. In 2016, new investigations of the Federal Police and the Public Ministry of São Paulo led to *Operation Game Over*, identifying an international gang fixing football matches in two Brazilian states: São Paulo and Rio Grande do [20]. In 2018, four other cases were reported: (a) during the São Paulo Junior Football Cup, the Estanciano football team was approached by Asian fixers to lose their matches in exchange for money; (b) in the State of Paraíba, the State Public Prosecutor filed a complaint against notorious members of the Paraíba Football Federation [21]; (c) in the State of Paraná, the Rio Branco team was approached to fix; and (d) in the State of Rio de Janeiro, the President of the Barra Mansa team was accused of trying to fix for international betting syndicates [22].

Literature review

Betting-related match-fixing: causes and risk factors

Betting-related match-fixing refers to the manipulation of the outcome or process of a sport event to gain profits on the betting markets [13, 23]. Albeit betting-related match-fixing is as old as sport, its current scale is quite recent and partly relates to the enormous growth and de-regulation of sport betting [8, 11, 24–26]. Online sport betting has increased the liquidity of the betting markets, allowing stakes to be made from anywhere on the planet, while circumventing restrictions and control [26, 27]. Thus, sport betting is present in all countries, even in those where betting is prohibited [28]. Empirical studies on match-fixing have been carried out in many – mostly Western – countries and sport settings. However, although increasing research attention is being paid to match-fixing in non-European settings (see e.g., [2, 9, 10, 29, 30], there is still no research in Brazil or any other Latin American country.

As strongly encouraged by Godinho and Barbosa [17], empirical inquiry into match-fixing in Brazil would provide evidence-based support for urgently needed national anti-match-fixing countermeasures. More precisely, identifying specific risk factors in Brazilian football can help to inform and guide evidence-based anti-match-fixing prevention policies [1]. Furthermore, research on risk factors offers new theoretical insights into the extent in which match-fixing processes are universal and why certain countries are more at risk. Hence, it enhances our understanding about why and where match-fixing occurs [13]. Moreover, examining risk factors in Brazilian football is a good starting point for the development of a research agenda on match-fixing in Latin America, as little sources beyond the judicial documents we studied are currently available for academic inquiry [17].

Rational choice theory is one of the dominant paradigms to study match-fixing [8]. According to this theory, people engage in match-fixing after a rational and strategic consideration in which potential costs (e.g., getting caught and being punished) are outweighed by potential benefits (e.g., financial gain) [11, 27]. However, given "its over-expectation about the capacity of individual agency", rational choice theory tends to neglect how the broader socio-cultural environment influences match-fixing

[8, p. 81]. Therefore, scholars have argued that sociological institutionalism provides a more fine-grained lens to study match-fixing and its multi-layered nature [8, 31]. According to sociological institutionalism, complex phenomena such as match-fixing are socially constructed by the interplay of individual and institutional factors [32]. A broad definition of institutions is thereby applied, integrating formal rules and norms with a view on the impact of culture and the internationalization of roles [32].

Sociological institutionalism has been adopted to discuss three main causes of match-fixing, being (a) the strong interest of criminal organizations in illegal sport betting, (b) financially and/or psychologically vulnerable individuals, and (c) poorly governed sport organizations [8]. Nevertheless, much knowledge can still be gained about how the characteristics of a specific national context contribute to that country's susceptibility towards match-fixing. Corruption risk factors are related yet distinct to corruption causes (see [33]). In a strict sense, causes of corruption are elements that happen prior to and contribute directly to corruption. On the other hand, risk factors or susceptibility conditions are "conditions of culture and structure of organizations under which corruption is more likely to occur" [33, p. 63]. Risk factors do not necessarily occur prior to corruption practices, as they can also be linked with its occurrence and its consequences.

Among other scholars, Forrest [11], Hill [6], Hill et al. [34], Nowy and Breuer [23], Spapens and Olfers [13], and Van Der Hoeven et al. [3] have pinpointed to certain risk factors concerning match-fixing, such as league structure, poor governance, financial difficulties, and a lack of knowledge. Nonetheless, additional systematic and empirical inquiry on this topic (with a non-Western geographical lens) is still encouraged by recent work [12, 23]. The general corruption literature offers valuable insights in this regard, by demonstrating that the risks of getting caught and punished, the dominant social and legal orders, and historical and cultural factors all play a vital role when it comes to countries' "different degrees of susceptibility to corruption" [35, p. 403]. In addition, scholarly work on corruption has indicated that those factors that contribute to the occurrence of corruption manifest themselves on three interconnected levels, i.e., a micro (individual), meso (organizational), and macro (systemic) level [33, 36]. Moreover, the role of social factors, cultural norms, public secrecies, and clientelism is also increasingly highlighted and discussed by the rapidly growing scientific literature on match-fixing [10, 25, 31, 37]. In the remainder of this literature review, we will highlight why Brazil provides an interesting and compelling case to expose the susceptibility of a national context towards betting-related match-fixing.

The institutional complexity of Brazilian football

Brazil is a large and diverse country, containing 26 States and one Federal District. Throughout its history, Brazil has been confronted regularly with corruption issues. According to the United Nations, Brazil loses approximately €300 million each year due to corruption [38]. Some sources refer to the country's cultural heritage of exploratory colonization and patrimonialism when trying to provide an explanation

for Brazil's sensitivity to corruption [39, 40]. Furthermore, part of the explanation can also be found in the fragility of many Brazilian institutions when it comes to good governance. Many sport institutions are characterized by a lack of transparency and little alternation in terms of power and leadership [41, 42]. In addition, the country's legal infrastructure to combat match-fixing is fragmented and ineffective [17].

This institutional and cultural complexity is also reflected in the structure of Brazilian football. In 2015, 776 clubs and 28,203 professional male football athletes were registered by the Brazilian National Football Federation (CBF) [16]. CBF is responsible for the organization of seven competitions: the four main national leagues, the Brazilian Cup, and two regional cups. Only 138 clubs (17.78%) compete in the national competitions: 20 clubs play in the first division (Brasileirão Série A), 20 clubs in the second division (Brasileirão Série B), 20 clubs in the third division (Brasileirão Série C), 68 clubs in the fourth division (Brasileirão Série D), and 91 clubs play in the Brazilian Cup. Each season, 947 matches are played in these five national competitions. The other 638 professional clubs compete in local tournaments organized by their State Federations. In summary, approximately 14,000 professional football matches are played annually in Brazil [16]. These Brazilian figures on the number of football clubs, matches, and players are to some extent in line with those of other, smaller Latin American countries such as Argentina.

Methods

An exploratory, qualitative, multi-methods study design was carried out to assess the factors that make Brazilian football susceptible to betting-related match-fixing. The study design was approved by the Federal University of Rio Grande do Sul's Ethics Committee (reference number 2.956.972).

Document analysis

First, official documents of relevant international organizations were examined. Major academic databases were searched on a systematic basis with the help of the keywords "match-fixing", "on-field corruption", "manipulation of sport"; and "sport manipulation". Hence, we included match-fixing and its most often used synonyms. Other relevant terms were also included in our literature review, but on a less systematic basis. Moreover, 32 official documents were analyzed, which can be divided in four categories. More precisely, the policy documents (reports) of national governments, (inter)national sport federations (e.g., FIFA), intergovernmental organizations (e.g., Council of Europe), and other non-profit organizations (e.g., Transparency International) that are active in the fight against match-fixing were included and critically assessed. Documents were selected in case they discussed (a) the types of match-fixing in football, and/or (b) the targets and approaches used by

match-fixers, and/or (c) the countermeasures to fight match-fixing. All documents were available on the organizations' official websites.

This first part of our study identified several match-fixing risk factors in Brazilian football: financially vulnerable players, precarious working conditions of referees, non-monitored matches, poorly governed football organizations, a lack of understanding and education about match-fixing, ineffectiveness of whistleblower mechanisms, difficulties in investigating and punishing, and non-regulation of sport betting. To enhance the reliability of identifying new risk factors and adding/excluding certain policy documents, each decision was first discussed between the authors.

Data collection

The data collection following this initial literature and document analysis was divided in two parts: interviews with key individuals in Brazilian football and the analysis of judicial documents of Brazilian match-fixing cases.

Interviews 22 semi-structured interviews were conducted with people related to Brazilian football. These interviews were structured around two main topics, as the interview script addressed issues about experienced cases of match-fixing and the risk factors related to betting-related match-fixing in Brazil. Interviewees represented two main categories, i.e., Brazilian anti-match-fixing institutions and individuals susceptible to match-fixing. A similar interview approach has also been used in recent match-fixing scholarship [31].

To select the first category of interviewees, purposive sampling was used. In this type of sampling, the researcher is interested in the viewpoints of certain individuals because of their unique position in the community being investigated [43]. All interviewees (for an overview, see Table 1) were directly involved in match-fixing cases. Moreover, in accordance with existing work, these interviewees represented three

Table 1 An overview of the interviewed Brazilian anti-match-fixing actors

Profession	Number of interviews
Police commissioner responsible for the Game Over investigation	1
Public prosecutor responsible for the Game Over investigation	1
Member of CBF Integrity Committee	1
Member of PFF Integrity Committee*	1
President of Superior Court of Sport Justice	1
Member of the Sport Chamber of the Federal Senate	1
Director of betting market monitoring company in Latin America	1

Note: Of the 27 State football federations in Brazil, the federation of the State of São Paulo (PFF) is the only one that has an integrity committee to deal with match-fixing

Table 2 An overview of the interviewed Brazilian sport actors

Profession	Number of interviews
Athletes	6
Referees	3
Coaches	3
Club managers	3

main categories of anti-match-fixing actors: i.e., public authorities, sport governing bodies, and betting-monitoring companies [12].

Interviewees of the second category were also purposively and conveniently selected based on their profession or position, and their accessibility and/or geographical proximity towards the researchers. Albeit all athlete interviews were processed anonymously, multiple athletes refused to participate or did not respond to our interview invitation, partly because of their fear for repercussions. All interviewees (for an overview, see Table 2) had at least ten years' experience in professional football, as evidenced by their involvement in the three first divisions of the Brazilian National League. Data saturation – and the criterion of redundancy – was used to determine the number of interviews [44]. In other words, we stopped interviewing new people as of the moment no new elements were mentioned during the interviews.

All interviews were conducted in person in a public place by the first author and lasted maximum one hour. All interviews were recorded and transcribed verbatim. Subsequently, transcriptions were sent to the interviewees to guarantee a correct interpretation [45]. The interviews were conducted in Portuguese and translated to English by a sworn translator. Afterwards, another translator made the translation from English to Portuguese to check the reliability of the initial translation.

Documents Three major match-fixing cases that recently appeared in Brazilian courts were analyzed (see Table 3). A total of circa 3,500 pages of documents was analyzed. The documents were obtained through authorization from the investigating authorities and made available through e-mail. Scholars argue in favor of studying specific cases to enhance our understanding about the dynamics of corruption [33].

Table 3 An overview of the analyzed Brazilian match-fixing cases

Case	State of the Public Prosecutor's Office responsible for the investigation
Operation Game Over	São Paulo
Operation Cartola	Paraíba
Barra Mansa	Rio de Janeiro

Data analysis

Content analysis was implemented to analyze the documents and interviews, following Creswell's [43] procedures. More precisely, triangulation was used to analyze and compare the collected documents, the scientific literature, and the interviews. Combining and cross-checking these three sources enabled a reliable picture. Three independent researchers analyzed the data separately, after which they discussed and compared their interpretations. The data analysis was based on an existing threefold structure: i.e., (a) criminal organizations and illegal betting, (b) vulnerable individuals, and (c) poorly governed organizations [8].

Findings and discussion

Based on the coding of the data, several factors that make Brazilian football at risk to match-fixing could be identified. The threefold model on match-fixing causes of Tak et al [8] functioned as a framework to facilitate the presentation and discussion of these factors. Grounded in sociological institutionalism, this model helps to understand match-fixing as a complex and multi-layered phenomenon. All risk factors relate to at least one of these three causes. Moreover, risk factors can also actually turn into causes when they are not effectively dealt with.

Criminal organizations and illegal betting

Illegal betting has become one of the main sources of income for criminal syndicates [8, 14]. The interest of criminal syndicates goes beyond European football, as illustrated in Brazil. In Operation Game Over, the police and the Public Ministry of São Paulo identified the role of an international gang in manipulating the results of football matches in three states, resulting in fraud and conspiracy accusations towards 13 people. Typical organized crime practices were used, such as division of functions, compartmentalization, intent on profit, hierarchy, and division of tasks on national and foreign soil. Being part of an international gang, two Asians were responsible for implementing this match-fixing scheme in practice: "There were three guys, one made a video call and introduced us to a Chinese guy. Another Chinese guy carried the money, and the other one made contact" (athlete 3).

The international gang of Operation Game Over was supported by ex-athletes or ex-coaches who had some kind of relationship with people in Asian football, a *modus operandi* which has already been highlighted by Hill's [7, 24] ethnographic work:

> The two individuals responsible for the fraud were a Malaysian and a Singaporean. They acted in Brazil via recruited people, usually (former) athletes they had met while these athletes played in Asia. We have some situations of this type: athletes who played in Eastern Europe or in Asian football

> and who later returned to Brazil. These markets have a tradition of corruption. There is a culture of fixing matches there. […] They return to Brazil with the possibility of continuing the service here, by being intermediaries (PMP).

Furthermore, as mentioned above, approximately 14,000 professional football matches are played yearly in Brazil. Many of these matches are not covered by the media, but are available to bet on. In combination with a lack of initiatives to monitor these matches on suspicious betting patterns, this characteristic provides a condition that makes Brazilian football – and other contexts were this characteristic is present – susceptible to match-fixing. Except for Whistle Mafia, all betting-related match-fixing cases identified in Brazil occurred in matches with little publicity and attendance. As the highest divisions of football are under increasing scrutiny, fixers diversify their initiatives towards lower and less monitored divisions to boost their illegal betting profits and to reduce the chances of getting caught [12]. In other words, fixers try to find the easiest entrance for their corruption strategies [46]. Irregular betting patterns can often be observed in minor tournaments in which the environment can be easily manipulated. In minor competitions, there are few people present in the stadium and matches are not broadcasted (sometimes even not recorded) on television or on the internet. This situation complexifies the collection of match-fixing evidence. As argued by the interviewed member of CBF Integrity Committee, this situation makes match-fixing more attractive for criminals and less risky for football professionals:

> Sometimes, the athlete does not want to cooperate in a fraud that is broadcasted or recorded. S/he may be more open to this possibility when the game is not covered because s/he has a feeling that nobody is watching it.

Additionally, over the last 15 years, sport betting market monitoring systems have been set up to check irregular betting patterns and to identify possible match-fixing cases. In Brazil, CBF is collaborating with the betting monitoring company Sportradar since 2017. The aim of this collaboration is to monitor the Brasileirão Série A, B, C, and D [47]. Different alert levels are present based on the volume and types of bets placed by bettors before and during a football match. When high financial amounts are placed on a type of bet, the odds react instantly. Through these fluctuations, it is possible to monitor the price movements in the betting markets and to identify possibly irregular or suspicious patterns. In Brazil, only three of 27 state federations (i.e. Paulista, Catarinense, and Pernambucana) and the CBF are monitoring their markets, leaving most matches in Brazilian football – notably the smaller and more susceptible leagues – without this type of control.

Existing monitoring systems, however, do not always present actual evidence of match-fixing. The identification of the agents responsible for match-fixing goes beyond the scope of these systems. Moreover, some Brazilian football federations' managers considered such system as too expensive and not a priority, implicating that monitoring systems are rarely applied by their federations. Nonetheless, monitoring betting markets might be important in light of investigative processes,

whereas it can also create additional obstacles for match-fixers, as stated by the public prosecutor responsible for the Game Over investigation:

> If you put a radar in the street and you divulge it, the driver will slow down. If you are monitoring matches, it will inhibit the action of outsider criminals or of professionals who are thinking about fixing matches.

Vulnerable individuals

Vulnerable individuals are more likely to (be approached to) fix [8, 25, 34]. This vulnerability is often approached in financial and/or psychological (e.g., gambling addiction) terms [34, 48]. For example, in environments in which athletes, coaches, or referees receive low salaries, there may be a greater propensity to accept money to fix matches [7, 34]. People who receive low salaries are more vulnerable to participate in fixing, because they might consider their wages as insufficient or unfair. According to a CBF [16] survey, 82.4% of the professional football athletes in Brazil received up to €230 per month, and another 13.68% between €230 and €1,152. Considering the average income of active Brazilian workers, estimated at €496, many Brazilian football athletes live in relative poverty [49]. Such poverty represents an ideal ground for match-fixers, as warned by the police commissioner responsible for the Game Over operation:

> We have information of clubs participating in lower leagues that have serious financial problems. They have no money to buy food or to pay the water bill. Athletes live in unhealthy conditions. I have reports about a player who could not go to the game because he did not have the money to pay for the bus ticket.

A similar situation was identified in a conversation involving a Brazilian match-fixer (BMF) and a coach (COA) from Palmeira football club, from the state of Rio Grande do Norte -RN:

> BMF: We know that your club's financial situation is very difficult. What we are doing all over Brazil is paying €5,000. I can even try to reach €6,000. It is a very good amount. You do not only have to lose, but lose respecting the minutes that we asked you to take the goals: first goal after 15 minutes, second after 35 minutes, et cetera.
> COA: It is good. Which games?
> BMF: Man, you are the one who is in charge, the team is yours.

Criminals are able to pay football professionals much higher amounts of money compared to the wages paid by Brazilian football clubs. According to the documents from the Game Over operation, fixing a match in Brazil pays up to €20,000. In some cases, this amount is in line with a semester payroll in small clubs. Hence, engaging in fixing may appear to be solving one's financial problems at once.

In addition to low wages, back wages have also been identified as a condition that causes athletes and coaches to fix football matches [46]. A FIFPro [50] survey showed that 52% of the professional football athletes who admitted that they

had been approached by match-fixers had financial disputes with their clubs. In Brazil, 52% of athletes experienced problems related to back wages in the last two years. This percentage is higher than the world average of 41%. According to an athlete who played in the Brasileirão Séries A, B, C and D during his career, athletes who do not receive their salaries (on time) might end up feeling entitled to fix a match to receive the money they think they deserve. For another athlete, who played for the Brazilian national team in two World Cups, back wages can lead athletes to decisions they would not make if they were paid correctly. His argument is similar to the understanding of a Brasileirão Série D club director:

> Imagine an athlete who is not receiving his salary. S/he has no money to bring home food. Then, someone offers him/her a good amount of money to lose one match. Will s/he refuse to do it? Will s/he value the institution that is not paying him/her, or will s/he think of his/her family?

Next to factors related to wages, short-term contracts of professional football athletes and coaches was another identified susceptibility condition to accept offers to fix football matches in Brazil. Data from FIFPro [50] indicated that the average duration of football contracts in the world is 22 months, while the average contract duration in Brazil is 11 months.

To gain a better understanding of this condition, there is a need to look at the organization of the Brazilian football calendar. Most Brazilian teams play only one semester per season, most notably in the first half of the year to participate in the state leagues. For example, of the 267 clubs that played in the first division in the 27 states leagues in Brazil in 2018, 190 (71%) finished their activities at the end of June. Only 46 clubs (17%) worked until the last quarter of the season. Of the 8,863 athletes who had contracts with these clubs, 3,863 (43.5%) had signed contracts with a maximum term of six months [51].

This situation may further increase financial insecurity for professionals who already receive low wages and lack job stability, making them even more susceptible, as argued by the director of a betting market monitoring company in Latin America:

> Sometimes there are athletes who do not earn badly, but they are part of clubs that do not have an annual calendar. They do not play a whole season remunerated. They have a guaranteed contract for only six months. This can cause affliction. If you tell them that their year has twelve months, but that they only work and get paid in four, how does this match? They are vulnerable.

Although this risk factor was not part of our initial category construction, it was spontaneously mentioned by 14 interviewees as a condition that increases the susceptibility to match-fixing in Brazilian football.

The above discussed financial vulnerability not only applies to athletes and coaches, but to all actors involved in sport, including referees. The scenario of low salaries and the absence of stable employment can cause referees being less fearful to engage in corruption. Referees are actors who can decisively influence

a football match (e.g., through expulsions and penalties). As mentioned by the director of a sport betting monitoring company, match-fixers are well organized. They seek referees with psychological (e.g., gambling addiction) or financial vulnerabilities. Financial problems were the reason alleged by former Brazilian referee Edilson Carvalho to fix 11 football matches in the Brasileirão Série A 2005, a case known as "Whistle Mafia". In September 2004, Carvalho was approached by a match-fixer but refused his offer. However, at the beginning of 2005, Carvalho had increasing debts and wanted to clean his name to be accepted by the PFF to work. He judged that accepting this offer was the easiest "solution" for his financial issues [19].

Brazilian football referees do not have an employment relationship with the CBF or with the state federations. As a result, they end up deprived of basic rights, such as vacation, 13th month salaries (i.e., a legal obligation for all Brazilian enterprises, entitled to all official employees), and health insurances. Additionally, there are three aggravating conditions: (a) when injured, referees do not receive financial aid during their recovery period (i.e., they are only paid when they whistle); (b) personal expenses with physical and mental training are disbursed by the referees themselves; (c) referee selections for matches are made through sweepstakes, which do not guarantee the participation of the professionals in a round of the league.

Moreover, it is important to highlight that Brazilian football counts only 14 main referees and 14 assistants in the FIFA referee category. This situation leads to referees being the weakest link in the Brasileirão Série A, a viewpoint illustrated by an internationally recognized Brazilian referee who participated in a FIFA World Cup: "Today, we have athletes who are really well-paid. The referee usually earns the smallest salary. However, s/he can influence a match more easily than the athletes." The comparison with the athletes' salaries provides a thought-provoking angle. Brasileirão Série A is the ninth in the world in terms of average salaries paid to athletes, totaling an amount of around €48,400 monthly [52]. As illustrated in Table 4, this is much more than the remuneration paid to the top referees.

In addition to the financial vulnerability and often poor working conditions of key actors (e.g., athletes, coaches, referees), many of them also lack understanding about what match-fixing is and how it operates. According to all interviewed authorities responsible for investigating match-fixing cases in Brazil, there may be a greater propensity to fix matches when actors lack knowledge about this type

Table 4 An overview of the remuneration of the referees in the Brazilian National Leagues per match

	FIFA Referee	FIFA Assistant	CBF Referee	CBF Assistant
Brasileirão Série A	€954	€572	€751	€451
Brasileirão Série B	€691	€415	€500	€300
Brasileirão Série C	€562	€337	€263	€157
Brasileirão Série D	€465	€279	€178	€108

Source: CBF [53]

of crime, as stated by the police commissioner responsible for the Game Over investigation: "Most athletes and coaches from small teams do not know it is a crime. They think it is part of the price. It can be a fatal ignorance."

The interviewed authorities highlighted the need to discuss the following aspects with football professionals: (a) explain what match-fixing is; (b) demonstrate the size of the betting market; (c) warn about the negative impact for athletes, coaches, and referees careers, clarifying what can happen when someone is caught fixing matches (i.e., life bans and prison sentences); (d) explain how match-fixing endangers the values of sport; (e) educational programs must focus on the consequences of engaging with match-fixers: football professionals need to understand the changing relationship with the criminals after accepting the first proposal to fix matches, which includes blackmailing and threats; and (f) explain to football professionals how they should proceed when approached by fixers. This discussion should include younger athletes, as emphasized by a Brasileirão Série A coach interviewed:

> Younger athletes still do not have full security to refuse such an offer. In Brazil there is no education on grassroots levels in sport. There, we can speak of semi-illiterate athletes in terms of match-fixing. They will get involved into cheating much easier.

Poorly governed sport organizations

A lack of education also relates to poor governance in sport organizations. Poor governance in sport organizations is linked with the susceptibility to corruption and with the occurrence of match-fixing [8, 23]. According to the interviewed member of PFF Integrity Committee, fixers are more inclined to intervene in organizations in which corruption is common, especially when a bad example is given by the organization's managers. This is in line with FIFPro's [54] analysis, which states that corruption in sport federations and clubs can overturn the moral barriers of individuals, causing them to engage in match-fixing.

In this sense, fixers may be attracted to act in environments in which authorities are corrupt, because they know people in these environments may be more receptive to their offers. In 2015, CBF officials were implicated in international corruption cases. José Maria Marín, former president of the organization, was arrested for financial fraud, money laundering, and for participation in a criminal organization. His predecessor, Ricardo Teixeira, is accused of money laundering by the Andorran justice authorities. Marin's successor, Marco Polo Del Nero, has been banned from football because of accusations of bribery and corruption, conflicts of interest, and breaches of FIFA's code of conduct. The corrupt state of Brazilian football is criticized by the member of the Sport Chamber of the Federal Senate:

> Match-fixing is closely linked to the general misconduct in our football. CBF has a history of criminal managers. This is an incentive to the other professionals to also act in a corrupt way. Athletes of the whole country are aware of this reality, which shows the weakness of the institution and the lack of character

> of the leaders. If the summit gives an example of fraud why would the base not follow the same path?

In addition to strong indications of corruption in Brazilian sport and society, existing whistleblowing mechanisms are insufficiently developed. Whistleblowers play a crucial role in exposing cases of corruption in different segments of society and corruption might flourish in environments where reporting is neither stimulated nor protected [18, 46, 55]. Despite recent critique on the dangers related to whistleblowing requirements expected from athletes (e.g., reprisals and social sanctions, see [31]), its potential is expressed by the director of the company of monitoring sport betting: "Whistleblowing is a very strong first step to begin a match integrity analysis. The easier it is for the complaint to appear, the greater will be the filing of complaints to initiate an investigation."

Whistleblowing mechanisms – or more broadly an organizational speak up culture – are however seldomly available in Brazilian football settings. Some authorities claim that implementing such mechanisms is too complex, representing an "unaffordable" investment. To file a complaint in Brazil, you must go directly to the police, the state federation, or the CBF. On the other hand, many football professionals do not trust the football federations, as illustrated by a Brasileirão Série A club manager:

> If I want to report a match-fixing case to CBF it will not have any effect. I will not have any guarantee. Look at the cases of racism nowadays. They make a huge noise when there is an offense, but there are no consequences. I do not believe in these entities.

Betting-related match-fixing is also difficult to investigate and detect, while it is often no priority for national law enforcement authorities [12, 46]. These authorities may encounter problems in obtaining evidence, which is essential for conviction in court. In absence of external evidence (e.g., telephone tapes or confessions), it is difficult to prove match-fixing [31]. In Brazil, match-fixing has only become a crime with the creation of article 41-C in the Statute of the Fan. It proposes a penalty of two to six years of imprisonment for those involved.

Despite this criminalization of betting-related match-fixing, Brazil is characterized by an overloaded judicial system and scant institutional knowledge on match-fixing [17]. A fixer's actions are facilitated due to the lack of Brazilian sources and systems to investigate match-fixing, according to the interviewed member of the Sport Chamber of the Federal Senate. The interviewed member of PFF Integrity Committee argues that this situation occurs due to a large list of problems related to crime in the country:

> Public authorities care little about match-fixing. The blanket is short. We know that the problems in Brazil, in criminal terms, are multifold and relate to many areas. We deal with high numbers of homicides and drug trafficking, and match-fixing is not on the list of priorities.

Moreover, Brazil continues to face problems related to the omission and slowness of its sport courts, according to the president of the Superior Court of Sport Justice. He suggested that a possible solution would be the use of reports produced by the monitoring companies as evidence for denunciations.

Finally, although debate remains present whether betting companies should be integrated in anti-match-fixing initiatives, they are reckoned by recent scholarship as one of three key anti-match-fixing actors next to sport organizations and public authorities [12]. On the one hand, scholars such as Forrest [27] and Rebeggiani and Rebeggiani [56] recommend attracting as many betting companies as possible, regulating and forcing them to provide information about match-fixing suspicions. Following this logic, the State may force betting companies to reinvest part of their earnings in the development of educational programs and prevention of match-fixing. On the other hand, legalization of betting and integrating betting companies in anti-match-fixing initiatives may further contribute to the legitimization and normalization of betting and to the growth of match-fixing [8, 34]. This latter viewpoint is illustrated by the President of the Brazilian Superior Court of Sport Justice: "It improves the control and we will collect taxes. On the other hand, legalization can increase corruption and be an easier way for money laundering, generating an avalanche of frauds."

Notwithstanding this debate, regulating legal betting markets represents one of the key countermeasures against match-fixing [2]. In Brazil, the federal government holds a monopoly over sport betting since 1969, the year of the creation of the sport lottery system controlled by the Federal Bank. Betting shops and private betting companies are prohibited in the country. In Brazilian law, there are no references to online sport betting. Although sport betting is not regulated in Brazil, there are more than 400 betting companies offering their services online to Brazilian citizens [57].

Conclusion

This study suggests that betting-related match-fixing in Brazilian football relates to the existence of a criminal ecosystem that transcends national borders [12]. This ecosystem involves a wide range of actors and institutions. Drawing on sociological institutionalism, this study supports the argument that match-fixing is not the outcome of a mere personal, strategic, and rational choice. Rather, Brazilian football is especially vulnerable towards betting-related match-fixing because of the interplay of complex and poorly governed sport and legal institutions and a corruption prone culture, which in turn impacts vulnerable individuals [23, 32].

Following the aim and tradition of corruption research in the social sciences, we contribute to a better understanding of betting-related match-fixing rather than offering a full explanation [33]. We thereby broaden current insights into betting-related match-fixing, both in terms of its geographical scope (as suggested by e.g., [12] but also when it comes to its underlying mechanisms. Deeply rooted institutional characteristics of and cultural norms in Brazilian football, such as a

low prioritization of counteracting match-fixing, a high number of unmonitored matches, poorly governed and non-collaborating organizations, and poor working conditions for players and referees help to grasp why match-fixers find solid ground in this country.

Whereas the identified risk factors are rooted in Brazilian empirical observations only, our study holds universal value. After all, our study is in line with the idea that betting-related match-fixing is a dynamic and ruthless phenomenon that searches for the easiest entrances, as illustrated by the partial diversification of fixers towards lower leagues and non-monitored matches [11, 12, 46]. Under pressure of improved anti-match-fixing efforts in the highest league levels, fixers focus on lower, less media covered, and non-monitored leagues to boost their illegal betting profits and to reduce the chances of getting caught [12]. Hence, initiatives to safeguard people on all levels of sport are amply needed, especially given the fact that this study shows that many stakeholders in Brazilian football lack knowledge on the characteristics and dangers of match-fixing.

In addition, most match-fixing cases in Brazilian football follow the same logic of organization and involvement of international criminal syndicates and cartels in Asia, as outlined in existing academic and other sources [6–8, 12, 58, 59]. So-called bosses send emissaries to the country – usually people with good relationships in the sport (e.g., former athletes) – to get closer to the athletes and make offers. However, the bets are placed outside Brazil and the only money that enters the country is related to bribes. Being the world's country with most professional football matches – most of them involving poor teams – Brazil is an ideal target for criminal groups that aim to make money by manipulating matches.

As in other countries, Brazilian athletes seem to be most vulnerable to be approached, mainly due to low and often back wages, and due to the professional instability generated by short term contracts. The identification of the dominance of short-term contracts as a risk factor is novel, offering an important contribution to the literature as a reference point for further investigation in other settings. Furthermore, many Brazilian football clubs face financial instability due to the economic crisis in Brazil, a lack of planning, labor debts, and property losses. This situation is worse for the 638 clubs (82.22% of total) that only compete in State competitions, which generate even less income. Moreover, as there is little public and media interest in these State competitions, most of the games are not broadcasted nor monitored, which complicates match-fixing detection. Brazilian football also faces serious problems regarding the management and governance of its State Federations and the CBF, with several cases of proven corruption. These characteristics create considerable match-fixing risks for Brazilian football, especially in light of the increasing growth of the (il)legal betting markets and the continuous interest of international criminal syndicates in spotting weak links and easy entrances for their corruption efforts [12].

Limitations and future research

Being the first empirical study on match-fixing in Latin America, its explorative nature represents certain limitations next to interesting avenues for further research. For example, a more in-depth analysis of (the interconnection between) risk factors is encouraged. Our study concords with the suggestion of Kihl [36] that studying corruption in sport requires attention for explaining factors on the interconnected micro (individuals: e.g., athletes, referees, and club leaders), meso (organizations: e.g., football clubs and federations), and macro (systems: e.g., the dominant judicial, sport-related, and betting systems and regimes) levels. Yet, further examination of the interplay between factors on different levels is worthwhile. To this aim, the general corruption literature provides enlightening lenses, suggesting to adopt a so-called "long view" (i.e., examining over time) and a "deep view" (i.e., looking for an in-depth, integrative understanding) on match-fixing [60]. Specifically, further attention should be dedicated to how systemic failures impact "bad barrels" (i.e., poorly governed organizations) and "bad apples" (i.e., immoral individuals) in sport, as well as the other way(s) around [61]. In addition, more work focusing specifically on the influence of macro-level factors such as the political system and the role of the media beyond (not) covering football leagues is amply needed [62].

Given the sensitive nature of match-fixing, another limitation of this study is the resistance of some professionals – often due to being afraid for reprisals – to collaborate (e.g., the athletes' union). Future work should try to obtain a richer interview sample. Moreover, additional work on the financial flows between betting companies and governing bodies is required, as this might skew the opinion of interviewees. Network analysis and institutional theory might help to further expose match-fixing as a form of institutional and systemic failure [58, 63]. Furthermore, while this study focused on betting-related match-fixing only, we encourage forthcoming scholarship to analyze incidents of non-betting related match-fixing (e.g., tanking) in Brazilian football as well. After all, recent studies explicitly argue in favor of a more thorough examination of this often neglected type of match-fixing [1, 3, 9]. Finally, as match-fixing has become a truly global issue, extra cross-cultural and international research is amply needed [12, 58].

Policy implications

Our study indicates a clear lack of match-fixing policies in Brazilian football. This finding comes as no surprise as betting-related match-fixing continues to be little prioritized in Brazil by sport governing bodies nor by legislative and/or law enforcement actors [17]. As a consequence, match-fixing prevention efforts (such as education campaigns) are not likely to generate any positive effect when Brazilian policy actors do not engage in developing integrated anti-match-fixing policies that focus on protection, regulation, detection, and sanctioning [2, 26]. As long as systemic flaws as well as poorly governed organizations remain as

prevalent in Brazil as today, individual stakeholders in Brazilian football – such as athletes, coaches, and referees – will continue to be vulnerable targets for fixers [34]. In any case, we have to avoid that Brazilian institutions create a dominant narrative in which match-fixing is framed as a mere individual responsibility of sport actors, in order to shift public attention away from these institutions' lack of anti-match-fixing efforts [1, 8, 26, 63].

Declarations

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. Moreover, the authors declare there are no potential conflicts of interest.

Conflicts of interest none

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