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To cite this article: David Lavalée, Dieter Braekeveld, Neil Hall, Lucy Sheppard-Marks & Claudio Marinelli (28 Oct 2024): Analysis of patterns and trends in competition manipulation in sport global data: 2018–2023, *Managing Sport and Leisure*, DOI: [10.1080/23750472.2024.2420060](https://doi.org/10.1080/23750472.2024.2420060)

To link to this article: <https://doi.org/10.1080/23750472.2024.2420060>



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Published online: 28 Oct 2024.



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Analysis of patterns and trends in competition manipulation in sport global data: 2018–2023

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ABSTRACT

Competition manipulation in sports has evolved from a localized issue to a global concern. Advances in technology and the growth of sports betting markets have attracted criminal networks that manipulate sporting events for financial gain. The aim of this study was to examine patterns and trends in competition manipulation in sport from a global dataset over a 6-year period. Manipulation of sports competition investigations and sanctions were assessed across world regions and sports. The Macolin Convention typology was also employed to categorize manipulation types and instigators. Results showed an increase in investigations and sanctions year-on-year, with Europe consistently having the highest numbers annually. The majority of investigations and sanctions were consistent across the sports of football, cricket, and tennis, and also an emerging trend in sanctions in esports. Investigation types have mostly been due to direct interference of a sports competition or use of external means. The instigator of manipulation trends shifted from opportunistic types to the exploitation of power or influence. The patterns and trends reported can help inform the work of sport management professionals.

ARTICLE HISTORY

Received 28 June 2024

Accepted 18 October 2024

KEYWORDS

Macolin Convention; national central bureau zones; match fixing; serious organized crime

Competition manipulation in sport has developed in recent years from a sport-specific form of corruption into a transnational issue crossing public and private sectors across society. Advances in technology and the global online sport betting markets have increased opportunities for deviant behavior. The low detection rates of practices such as competition manipulation have attracted the attention of crime networks who manipulate the final score or specific events during a sporting event often through illicit means (Huggins,

2018). Given that 20% of international trade is linked to criminal activity (Moriconi, 2024), it is perhaps unsurprising that the global online sports betting market has become a prime avenue for laundering of money with minimal consequence.

The globalization of sports has made it easier for criminal syndicates to operate across borders, and this presents ongoing threats to economies and society at large. The manipulation of sport competitions is a complex challenge that presents a major threat to the

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integrity and sustainability of sport (Van Der Hoeven et al., 2020). Manipulating outcomes threatens the essence of competition, removing uncertainty and jeopardizing the popularity of sport, while risking the safety of those involved in the manipulation, itself (Chappelet, 2015). According to van Bottenburg (2021), competition manipulation creates major challenges for stakeholders because it transcends the jurisdictions of sports organizations and governments. As a result, law enforcement agencies have started to view competition manipulation as a form of serious organized crime (Kiemle-Gabbay et al., 2023).

Competition manipulation has been defined in the literature in different ways. For example, Preston and Szymanski (2003) first described it as an action to influence the course or result of a sporting event to obtain an advantage for an individual or others. Carpenter (2012) adopted a broader approach, defining match fixing as a dishonest activity by participants, team officials, match officials or other interested parties to ensure a specific outcome in a particular sporting match or event for competitive advantage and/or financial gain which negatively impacts on the integrity of the sport. The Council of European Convention on the Manipulation of Sports Competitions (also known as the Macolin Convention) developed the following definition, which has become the most widely used at an international level:

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 the unpredictable nature of the sports competition with a view to obtaining an undue benefit for oneself or for others. (Council of Europe, 2023)

The Macolin Convention came into force in 2019 and is, at present, the only legal instrument designed to prevent, detect, and sanction manipulation of sports competitions (Council of Europe, 2019). The convention covers both betting-motivated and sporting-motivated manipulation and includes a framework

classifying the different types of competition manipulation and criteria related to the instigator(s) of the manipulation. The typology was developed to help promote clearer communication and provide a uniform statistical basis across nations to help identify areas of risk or emerging threats (Council of Europe, 2023). It also has helped inform practitioners in conducting investigations into suspected cases of competition manipulation, which focus on examining relevant incidents or actions systematically and robustly to establish if a sport regulation breach has occurred (Interpol & International Olympic Committee, 2016; United Nations Office on Drugs and Crime & International Olympic Committee, 2019). Information derived from these investigations is used to inform decision-making as to whether a sanction will be imposed (United Nations Office on Drugs and Crime, 2023). However, no research has been published using the Macolin Convention framework (Vandercruysse et al., 2022).

Research on competition manipulation in sport in general is limited but developing in scope. Several studies have focused on specific sports (e.g. Di Ronco, 2015; Marchetti et al., 2021), and illustrated how some are more susceptible than others, due to factors such as limited regulations, ease of manipulating outcomes, the specific betting offer and betting volumes per sport, and lack of strict enforcement. Other studies have examined competition manipulation in different countries (e.g. Aquilina & Chetcuti, 2014; Doewes, 2020). This research has demonstrated how it is a global issue that is not limited to any particular region. Researchers have also started to explore the different types of competition manipulation (e.g. Abeza et al., 2020; Park et al., 2019) and the instigators involved (e.g. Visschers et al., 2020) in competition manipulation, but these studies have not applied the Macolin Convention typology (Vandercruysse et al., 2022). Likewise, the literature has adopted a static view of competition manipulation and has not yet

considered the evolution of stakeholders and how instigators may adapt their strategies over time to evade detection (Spapens & Olfers, 2015).

In the same way that the motivation to commit crime is highly diverse and better viewed as a continuum of activity (Walters, 2016), the act of competition manipulation is highly complex and should be considered as the outcome of a complex interplay between an individual and a wide variety of forces. An instigator's motivation to become involved is rarely simplistic, instead it is based on a blend of numerous rationales and incentives (Van Der Hoeven et al., 2020). Theorists have presented varying reasons for an athlete to become involved in competition manipulation that go beyond the traditional narrative that highlights the moral failure of the individual (Tak et al., 2022) combined with the approach from an external criminal group (Barkoukis et al., 2020). While there are often external actors, such activity is also generated by instigators from within sport itself (Moriconi & De Cima, 2020).

The literature has identified three predominant reasons for competition manipulation to occur, including the influence of criminal organizations, financially vulnerable individuals, and weak sports governance (Tak et al., 2022); however, a diverse range of rationales have also been presented (Moriconi, 2024). Financial gain appears to be the primary motivator (Hill, 2015), with those who have not received salaries seeming to be most at risk (Moriconi & De Cima, 2020). The act of competition manipulation is also considered by some as a rational undertaking (Forrest, 2018), albeit an immoral one (Garrigan et al., 2018). Van Der Hoeven et al. (2020) applied Rest's (1986) moral decision-making theory to match fixing, identifying four obstacles to the act of making a moral decision (i.e. moral sensitivity, moral judgement, moral motivation, and moral character). Athletes who fixed matches considered the costs and benefits of their actions,

ultimately committing the offence after a rational decision-making process (Hill, 2015). According to Barkoukis et al. (2020), it is not an offence that is committed in an off-hand or automatic way. Morality, or a loss of morality, appears to be an enduring factor within competition manipulation, with research suggesting that strong levels of morality decrease the likelihood of an individual committing an offence crime (Antonaccio & Tittle, 2008).

The social context is another important area potentially influencing involvement in competition manipulation. In some environments, such behavior is considered more acceptable (Barkoukis et al., 2020), and assumptions around the perceived lack of detection of offences increase the likelihood of involvement in competition manipulation. The act is often seen as highly profitable with limited chance of being exposed (Europol 2023). It has been suggested that for athletes the presence of manipulation is the norm rather than an exception (Van Der Hoeven et al., 2020) with many avoiding speaking out about offences due to fear of negative consequences and detrimental impacts on their careers (Moriconi & De Cima, 2020). Athletes are also often susceptible to power differentials in their bid to perform or be selected (O'Shea et al., 2021) and more likely to offend if they perceive competition manipulation as socially-approved and endorsed by others (Barkoukis et al., 2020). In addition, athletes may become involved to seek positive sporting outcomes (Moriconi, 2024), or due to a natural propensity to seek more risk (Forrest, 2018) with risk taking often viewed as desired quality in athletes (Langseth, 2011). Han (2020) identified a degree of anomie as an influencing factor in those involved in match fixing, which may link with a perceiving a lack of control among athletes over their lives, leading to alienation and a greater propensity to seek edgework activities (Sheppard-Marks et al., 2020).

The purpose of this study was to advance knowledge in the area of competition

manipulation in sport in novel ways by examining patterns and trends associated with investigations by national and international law enforcement agencies and sanctions by sports governing bodies from a global dataset over a 6-year period. The study specifically aimed to analyze patterns and trends across world regions, sports, manipulation types, and instigators of manipulations using the Macolin Convention typology in order to advance understanding for stakeholders.

Materials and methods

Data collection

The data used in the study were curated and coded through the INTERPOL Financial Crime and Anti-Corruption Unit between January 1, 2018 and December 31, 2023. Media was monitored weekly through Google's content change detection and notification service (i.e. Google Alerts) in the languages of English, French, and Spanish with the following keywords: match fixing; sports integrity; sports competition manipulation; sports manipulation; sports corruption; illegal betting; and sports betting integrity. Press releases of sports organizations (e.g. International Olympic Committee, Fédération Internationale de Football Association, International Cricket Council) and specialized websites (e.g. Inside Football World) were also sourced bi-weekly. This approach generated a total of 2,413 records. To meet the inclusion criteria for this study, a record needed to provide sufficient information to classify an investigation or sanction according to the INTERPOL National Central Bureau Zones (Interpol, 2023) and the Macolin Convention Typology (Council of Europe, 2020), as outlined in below. This process resulted in the inclusion of 503 investigations and 653 sanctions.

The data supporting the findings reported in this paper are openly available at DOI: [10.57995/v5j8-6t65](https://doi.org/10.57995/v5j8-6t65). Institutional ethics committee approval was granted by Abertay University.

Data analysis

The country where investigations and sanctions occurred were initially coded and calculated according to INTERPOL National Central Bureau Zones (Asia, Caribbeans and Central America, East Africa, Europe, Middle East and North Africa, North America, Oceania, South America, West Africa, and Global) (Interpol, 2023).

The sport or sports (coded as multi-sport) associated with the investigations and sanctions were coded and calculated.

Three types of sports competition manipulation were calculated for investigations according to the Macolin Convention typology (Council of Europe, 2020) as follows: *Type 1*. Direct interference in the natural course of a sporting event or competition (i.e. manipulation of sports competitions, or element of a sports competition, in order to gain an unfair sporting advantage or corrupt financial benefit); *Type 2*. Modification of an athlete's identity or personal information in order to influence the natural course or outcome of a sports competition i.e. providing false information related to: personal data, physical characteristics, mental or physical capabilities; and *Type 3*. Modification that is non-compliant with criminal laws or sport rules (relating to playing surfaces, equipment, athlete physiology, a sporting venue).

Four groupings were calculated for investigations in terms of the instigator of the manipulation according to the Macolin Convention typology (Council of Europe, 2020) as follows: A. Exploitation of Governance (abuse of a dominant position; the instigators misuse their dominant insider position within a sports organization to instruct or force others to manipulate sports competitions, or element of a sports competition); B. Exploitation of Power and Influence (abuse of financial and contractual position; misusing the power that comes from a financial or contractual position, the instigator instructs or forces the executor to

Table 1. Manipulation of sports competition investigations according to INTERPOL National Central Bureau Zone, 2018–2023.

National Central Bureau Zone	2018 (n = 59)	2019 (n = 63)	2020 (n = 74)	2021 (n = 92)	2022 (n = 106)	2023 (n = 109)
Asia	14	9	18	11	16	26
Caribbeans and Central America	1	1	0	2	0	1
East Africa	4	5	3	6	1	1
Europe	26	33	35	36	53	50
Middle East and North Africa	2	2	4	1	1	2
North America	1	2	3	5	5	3
Oceania	5	7	7	5	6	1
South America	1	2	2	3	4	3
West Africa	4	2	1	9	1	1
Global	1	0	1	14	17	21

manipulate a sports competition, or element of a sports competition); C. External Influences (approaching, influencing or controlling the persons who are directly involved in making the manipulation happen; no intention to gain a sporting advantage, i.e. person(s) outside of the jurisdiction of the relevant sports organization); and D. Opportunistic (individuals exploiting their sports participant status to deliberately underperform or manipulate the expected outcome of a sports competition, or element within a sports competition, where this activity is considered to be non-compliant with criminal laws or sport rules).

Results

Findings are reported for manipulation of sports competition investigations and sanctions. First, we calculated the number of investigations (503 in total; [Table 1](#)) and sanctions

(653 in total; [Table 2](#)) according to INTERPOL National Central Bureau Zones.

Investigations and sanctions both increased year-on-year, with Europe consistently having the highest number of investigations and sanctions annually. In 2021, there was a redistribution of sanctions from Europe to Asia and Middle East/North Africa and this continued, but to a slightly lower extent, in 2022 and 2023. There were noteworthy increases in sanctions in North America in 2023 and global investigations since 2021. There were also spikes in global sanctions in 2020 and 2023.

Next, we calculated the number of investigations ([Table 3](#)) and sanctions ([Table 4](#)) by sport. Football consistently had the highest number of investigations and sanctions annually, with snooker investigations significantly increasing in 2022. The sports of cricket and tennis consistently had high number of sanctions, except for cricket in 2021. Sanctions

Table 2. Manipulation of sports competition sanctions according to INTERPOL National Central Bureau Zone, 2018–2023.

National Central Bureau Zone	2018 (n = 83)	2019 (n = 91)	2020 (n = 111)	2021 (n = 115)	2022 (n = 124)	2023 (n = 129)
Asia	23	23	17	37	27	23
Caribbeans and Central America	2	3	2	1	1	4
East Africa	8	12	3	4	12	8
Europe	24	23	46	33	56	45
Middle East and North Africa	2	5	5	18	16	5
North America	1	2	6	5	1	14
Oceania	6	7	8	2	2	4
South America	8	9	5	6	7	7
West Africa	6	7	1	8	1	7
Global	3	0	18	1	1	12

Table 3. Manipulation of sports competition investigations by sport, 2018–2023.

Sport	2018 (n = 59)	2019 (n = 63)	2020 (n = 74)	2021 (n = 92)	2022 (n = 106)	2023 (n = 109)
Animal	1	1	1	2	0	0
Athletics	1	1	0	0	2	0
Badminton	1	0	0	0	0	0
Baseball	0	0	0	0	2	0
Basketball	1	2	2	3	2	10
Bowling	0	0	0	0	1	0
Boxing	0	1	1	1	0	0
Car Racing	0	1	0	0	0	0
Chess	0	0	0	0	1	0
Cricket	11	6	10	6	4	8
Cycling	0	5	0	1	0	0
Darts	0	0	0	1	0	0
Esports	2	3	9	3	3	1
Football	29	34	44	58	62	76
Gymnastics	0	0	0	0	0	1
Handball	0	0	0	2	0	2
Ice Hockey	0	1	0	3	0	1
Mixed Martial Arts	0	0	0	0	2	0
Multi-Sports	2	0	0	0	4	4
Other	1	1	1	3	4	0
Rugby	2	1	0	0	1	1
Skiing	0	1	0	0	0	0
Snooker	1	0	0	0	15	1
Tennis	7	5	6	5	1	4
Table Tennis	0	0	0	4	2	0

Table 4. Manipulation of sports competition sanctions by sport, 2018–2023.

Sport	2018 (n = 83)	2019 (n = 91)	2020 (n = 111)	2021 (n = 115)	2022 (n = 124)	2023 (n = 129)
Animal	4	2	1	2	0	3
Athletics	0	2	0	0	1	6
Australian Rules Football	0	1	0	0	0	0
Badminton	4	2	0	5	1	0
Baseball	0	1	0	2	0	3
Basketball	0	1	1	2	0	7
Boat Racing	0	0	2	0	0	0
Cricket	14	11	13	6	15	10
Cycling	0	2	0	0	0	2
Darts	1	0	3	0	0	3
Esports	1	3	7	15	18	14
Football	34	46	46	42	59	42
Ice Hockey	0	0	2	0	0	1
Mixed-Martial Arts	0	0	0	0	0	1
Multi-Sports	1	0	11	0	2	8
Other	0	0	1	7	1	0
Rugby	0	1	1	0	0	0
Snooker	1	1	0	0	0	3
Swimming	1	0	0	0	0	0
Tennis	21	17	22	32	26	27
Table Tennis	0	0	0	1	0	0
Volleyball	0	1	0	1	0	0
Weight Lifting	0	0	1	0	0	0
Wrestling	1	0	0	0	0	0

in esports increased annually up until 22, and remained relatively high in 2023.

We then calculated the number of investigations by Macolin Convention manipulation

type (Table 5) and by Macolin Convention instigator of manipulation (Table 6). The results show a high majority of investigations have been Type 1 (i.e. Direct interference in the

Table 5. Manipulation of sports competition investigations by Macolin Convention manipulation type, 2018–2023.

Manipulation type	2018 (n = 59)	2019 (n = 63)	2020 (n = 74)	2021 (n = 92)	2022 (n = 106)	2023 (n = 109)
Type 1	57	56	68	82	94	103
Type 2	1	1	2	4	1	1
Type 3	1	6	4	6	11	5

Note. Type 1 = Direct interference in the natural course of a sporting event or competition; Type 2 = Modification of an athlete's identity/personal information; Type 3 = Modification that is non-compliant with criminal laws or sport rules relating to: playing surfaces, equipment, athlete physiology, sporting venue.

Table 6. Manipulation of sports competition investigations by Macolin Convention instigator of manipulation, 2018–2023.

Instigator of manipulation	2018 (n = 59)	2019 (n = 63)	2020 (n = 74)	2021 (n = 92)	2022 (n = 106)	2023 (n = 109)
A. Exploitation of Governance	10	8	9	16	8	17
B. Exploitation of Power or Influence	16	20	39	51	84	80
C. External Influences	7	1	4	6	4	6
D. Opportunistic	26	34	22	19	10	6

Note. A = Abuse of a dominant position; B = Abuse of financial and contractual position; C = Approaching, influencing or controlling the persons who are directly involved in making the manipulation; D = Individuals exploiting their sports participant status to deliberately underperform or manipulate the expected outcome of a sports competition, or element within a sports competition.

natural course of a sporting event or competition) with a significant increase in Type 3 (i.e. Modification that is non-compliant with criminal laws or sport rules relating to: playing surfaces, equipment, athlete physiology, sporting venue) in 2022. Regarding the instigator of the manipulations, the data show an annual increase for Exploitation of Power or Influence (i.e. abuse of financial and contractual position). Opportunistic (i.e. individuals exploiting their sports participant status to deliberately underperform or manipulate the expected outcome of a sports competition, or element within a sports competition) has consistently decreased since 2019, while Exploitation of Governance (i.e. abuse of a dominant position) had an anomalous surge in 2021.

Discussion

As Table 1 indicates, the total number of reported investigations has almost doubled in the 6-year period. The Macolin Convention is the only multi-lateral treaty specifically aimed at combating match-fixing and other related corruption in sport; it has been ratified by

nine countries and signed by 32 other European States, as well as by Australia and Morocco (Council of Europe, 2024). However, it is a European initiative, which may explain the relatively higher European numbers as it is where the scrutiny has strongest focus. The small number of investigations in large population regions such as the Americas is surprising and may be suggestive of less-rigorous attitudes towards competition manipulation in those countries, although there has been a modest rise in more recent years. Small numbers in Middle East and North Africa are equally surprising, although it is acknowledged that searches were not conducted in Arabic languages. The notable spike observed in this region during 2021–2022, followed by a return to lower numbers, may be attributed to COVID-19 quarantine restrictions, during which many elite and professional sports were suspended while less-regulated levels of sport continued operating (Manoli et al., 2022). In this context, Santos (2022) contends that levels of competition other than elite professional sport are more susceptible to match-fixing. It is also plausible that the awarding of

a major world sports event to a country in this region may have attracted additional scrutiny in the lead-up to the competition (Parent & Ruetsch, 2020). The surge in 2021–2023 in global investigations, where a single case involves multiple countries, may have contributed to the increase in Europe since 2022, if European countries were the main states involved in the global cases.

Although several individual sports associations have developed anti-corruption statements and formative policies, the Macolin Convention is the only formalized standard that has been developed to date for addressing competition manipulation (Council of Europe, 2023). The data does not necessarily show a direct correlation between its operation and the growing number of investigations and sanctions, but the alignment of timeframes is suggestive of some impact. The growing social media concern about issues of corruption in sport, and public campaigns against gambling advertising may also contributed to the increase in sanctions (Tak et al., 2022), but that area of political pressure is outside the scope of this data and has not yet been researched elsewhere.

In terms of sanctions, the data reflects a somewhat similar pattern to trends in investigations across National Central Bureau Zones. Because it can take several years for an investigation to result in a sanction (Park et al., 2019), some of the Table 2 data will be the result of pre-2018 investigations, meaning that a direct correlation should not be expected between investigations and sanctions. However, it is worth noting that the doubling of reported sanctions in Europe does mirror the doubling of reported investigations in the same region. In Asia, the number of sanctions is larger than investigations but the mostly static pattern of the case numbers from 2018 to 2023 is comparable. Imposing sanctions are the responsibility of the sport governing bodies or in some cases by tribunals where sufficient legal grounds exist (United Nations Office on Drugs

and Crime, 2023). Because the data does not distinguish between sanctions issued by the sports or tribunals, we recommend future researchers take this into account given the relevance of both sports and law enforcement investigations. We also encourage future researchers to monitor trends across member countries in a National Central Bureau Zone scheduled to host a major international sporting event. The awarding of a major event brings to the awarded country, and the region as a consequence, additional security threats for stakeholders to be made aware of (Parent & Ruetsch, 2020). This may include opportunities for criminal networks to exploit and differentiate their activities pre- and post-event, including through other sports beyond the one which is the focus because of the event.

When considering the results by sport, 70–80% of both the investigations and sanctions were consistent across the sports of football, cricket, and tennis. These trends in investigations follow results in previous international research studies (Caneppele et al., 2020), while the findings in relation to sanctions expands understanding in the area. This is perhaps not surprising given the inherent relationship between investigations and sanctions. However, the convergence across the data in Tables 3 and 4 can help inform the work of stakeholders by focusing intelligence gathering to inform prevention efforts (Weisburd et al., 2023). Professionals should also note that investigations normally report the country where the case is investigated, but tennis sanctions are reported by nationality of the people involved, regardless of where the offence was committed.

Although counter-intuitive, the increase in investigations and sanctions across the sports of football, cricket, and tennis suggests that the respective governing bodies may be more proactive compared to other sports (Krambia Kapardis & Levi, 2023; Villeneuve & Pasquier, 2018). The intensification of action often occurs following a high-profile case (Caneppele

et al., 2021; Veuthey, 2014). Evidence-based policing and technological advances also often lead to greater results (Weisburd et al., 2023), so further research on “what works” across sports with escalating levels of investigations and sanctions is needed to help identify practical ways to tackle match fixing. Current preventative measures center around education and awareness campaigns focused on recognizing the issue, resisting incentives, and reporting attempts (Moriconi, 2024). Unfortunately, evidence seems to show that prevention campaigns are largely ineffective, with athletes still continuing to be involved in competition manipulation despite education efforts (Moriconi & De Cima, 2020). The novel findings in relation to increasing sanctions in esports could provide a contemporary avenue of investigation. Despite their growing regulatory system, esports may provide a heightened opportunity for competition manipulation by the anonymity of players behind avatars, and the player-controlled philosophy in the origins of the games which resists institutionalization and organizational oversight (Kanellopoulos & Giossos, 2024). Stakeholders also need to be aware that the disproportionate spread of data may be influenced by any differences in media exposure and the under-reporting of some sports due to concerns associated with loss of trust associated with investigations and sanctions (Van Der Hoeven et al., 2020).

When evaluating investigations according to Macolin Convention manipulation types (Table 5), significant increases were seen in Type 1 and Type 3. Type 1 manipulations were already the highest type reported in 2018 and but also demonstrated a gradual increase in subsequent years. The spike in Type 3 in 2022 and 2023 should be closely monitored, as this indicates an increase in the use of external means (Diaconu, 2023) such as tampering with equipment vital to staging an event or competition (e.g. changing the temperature) which could have wider-reaching safety consequences. Overall, it is unlikely that the number

of investigations has increased simply because overall player population sizes have increased, as professional leagues generally maintain consistent player numbers (compared with increasing player participation at grass-roots community level, particularly post-COVID 19). Therefore, the trends may represent actual increases in manipulation activity, or a stronger commitment by sport governing bodies to more refined detection and subsequently more accurate and overt reporting. Type 2 manipulations remained consistently low but with a small increase in 2021, which may be related to changes in sports competitions due to COVID 19 (Europol, 2023; Manoli et al., 2022) or, for example, in sports where player identity is more easily falsified such as esports (Zerafa et al., 2021).

Considering the instigator of manipulation data, there has been a shift away over time from opportunistic manipulations to people exploitation power or influence (Table 6). This is likely due to the increased attention on those individuals who, in the past, might have felt they would be more likely to succeed in deliberately manipulating the expected outcome of sports competitions (Caneppele et al., 2020). This trend is somewhat unexpected given the momentum gathering in the media regarding individual cases into competition manipulation but is understandable given the tendency to identify isolated offenders rather than explore the cultures that help construct these behaviors (Sheppard-Marks et al., 2020). The results highlight the importance to focus on individuals and groups in positions responsible for finances and contracts in addition to people in governance positions or those who are directly involved in executing the manipulation. Researchers are calling for more empirical studies to further investigate the potentially flawed narrative surrounding competition manipulation (Moriconi, 2024; Tak et al., 2022). A greater understanding of the social and psychological processes around this offence, and the instigators involved, will help

inform policies and interventions, ultimately enhancing their effectiveness (Stallings & Ward, 2017).

Conclusion

In this study, patterns and trends were identified across world regions, sports, manipulation types, and instigators of manipulations. Results showed an increase in investigations and sanctions year-on-year, with Europe consistently having the highest numbers annually. The majority of investigations and sanctions were consistently across the sports of football, cricket and tennis, and also an emerging trend in sanctions in esports. Investigation types have mostly been due to direct interference of a sports competition or use of external means. The instigator of manipulation trends shifted from opportunistic types to the exploitation of power or influence.

This study was the first to apply the Macolin Convention typology in the analysis of a global dataset. The typology was an effective classification framework, and we encourage future researchers to build upon this and contribute to the generation of uniform statistical information. Advancing knowledge in this matter can help sport management professionals better understand risk factors and emerging threats in relation to competition manipulation in sport. Knowing where manipulations are most frequent can help professionals target their respective efforts where risks are highest. The shift from opportunistic manipulation to exploitation of power or influence also suggests a trend towards methods that are more sophisticated and embedded within sports governance and financial structures. To address these risks effectively professionals should focus on enhancing regulatory frameworks, increasing transparency, and improving surveillance and detection systems. In addition, investing in education and training for stakeholders can help raise awareness about manipulation tactics and strengthen prevention efforts, ultimately

helping to strengthen capacity to minimize the influence of criminal networks seeking to exploit sports competitions for financial gain.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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