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Interactive Learning Environment on Policy Design Against Racism

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Document description: This deliverable presents an Interactive Learning Environment (ILE) developed on the System Dynamics methodology. The model provides a structured way to explore how racist incidents emerge, spread, and can be countered through targeted interventions at multiple levels. It identifies the key variables, feedback loops, and policy levers that affect the system, translating them into an accessible interface that allows experimentation without prior technical expertise.

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Abbreviations

System Dynamics (SD)
Causal Loop Diagram (CLD)
Graphical User Interface (GUI)
Interactive Learning Environment (ILE)

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Executive Summary

Racism in football remains a persistent and evolving challenge. Despite decades of initiatives, its manifestations adapt to new contexts, always moving between overt and structural expressions. Traditional approaches often treat incidents as isolated events or moral, individual failures, thus neglecting the deeper feedbacks that allow discrimination to reproduce itself within institutions and fan cultures. To address such complexity, it is necessary to view racism not as a static condition but as a dynamic system, one that takes into account individual behaviour, governance, and social context.

This deliverable presents an Interactive Learning Environment (ILE) developed on the System Dynamics methodology. The model provides a structured way to explore how racist incidents emerge, spread, and can be countered through targeted interventions at multiple levels. It identifies the key variables, feedback loops, and policy levers that affect the system, translating them into an accessible interface that allows experimentation without prior technical expertise.

The simulation assumes three main types of stakeholders: fans, football club managers, and association managers. Each of those stakeholders can take different decisions and have different objectives: (1) Fans influence exposure and social pressure through their attendance and willingness to report incidents (2) Club managers can determine the intensity of internal measures, such as steward training, education, counter-narratives, and transparency, all of which entail financial trade-offs, while (3) Associations set the tone for deterrence through enforcement, sanctions, and reputational incentives. The users can observe how these choices reinforce or counteract each other across time in a consequence-free environment.

Scenario experiments reveal that racism is rarely reduced by single, short-term actions. Deterrence can curb escalation temporarily, but long-term change requires trust, education, and visible commitment from institutions. Moreover, interventions can have both direct costs and indirect benefits: while training or campaigns increase expenditure, they also improve reputation, attendance, and ultimately reduce cumulative financial losses. The model thus frames racism as a systemic phenomenon and provides insights on how to increase resilience and institutional sustainability.

The ILE is intended as a learning and dialogue tool designed primarily for policymakers, educators, football governance professionals, and researchers. It facilitates cross-sector dialogue by translating academic insights into accessible, scenario-based interactions that encourage reflection on institutional strategies and ethical responsibilities. It transforms abstract debates into systemic dynamics that can be understood by non-technical users, hence allowing them to test how different strategies interact under conditions of non-linearity and delay.

Introduction

Racism is a complex phenomenon that is characterized by various dimensions, manifestations and different people perceive it in a different way. As in society, racism in football in not a new problem. There have been periods when it has seemed to vanish and periods where racist incidents tarnish the cultural impact of the sport (Armenia et al., 2019). While the first official recognition that racism in football is a major problem occurred in the 1970s (Cashmore and Cleland, 2014), it remains persistent until today in all European countries (Kassimeris, 2009).

More recent analyses extend these understandings into the digital era. Kassimeris, Lawrence, and Pipini (2022) argue that racism in football must now be seen as both an offline and online phenomenon, where social media interactions, fan networks, and institutional reactions form a continuous ecosystem of representation and power. Their framework places racism not only in the stadium but also in the wider digital sphere that amplifies or normalizes racist discourse, thus providing an updated context for interpreting how discriminatory behaviours evolve.

To understand racism in football first requires identifying who its victims are. The term BAME (Black, Asian and Minority Ethnic) has been often used in public discourse and policy (Long et al., 2009) to describe non-white communities within national populations and while this characterization captures a broad spectrum of groups, defining racism itself remains more complex.

According to FIFA (2006), racism is discrimination based on skin colour as a visible characteristic of ethnic origin. Similarly, Macpherson (1999) describes racism as behaviour imposes disadvantages on individuals or groups due to their skin colour, culture, or ethnic background. In addition, Macpherson states that racism may manifest overtly through explicit acts or covertly through implicit attitudes or structural biases and both forms can be equally harmful.

Apart from those definitions, others have been proposed such as those of Long (2000) or Llopis-Goig (2013); the common element of all these definitions is that they focus on the individual. Yet, racism operates also at a structure level. As Macpherson (1999) assessed institutional racism as the collective failure of an organization to provide appropriate services to people due to their colour, culture and/or ethnic origin. This type of racism is also more covert and difficult to detect as it is embedded in processes, attitudes and frameworks through unwitting prejudices, ignorance or stereotyping.

Especially in football, the problem of defining racism might be one of the causes that allow it to resurface despite the decades of initiatives. Racist incidents are framed as isolated and spontaneous acts that are attributed to individual prejudices or an effort to affect the opponent or in general as harmless jokes (Müller, Van Zoonen and De Roode, 2007).

This “color-blind” ideology however, denies any structural cause of discrimination (Burdsey, 2014).

Apart from the complexity of the problem itself, the visibility of football further complicates the issue. The sport’s global media exposure can embolden fans who believe that racist behaviour does not have any consequences. At the same time, the success of minority

players can create a false image of inclusion, suggesting that football has moved beyond racism (Bradbury, 2017). This illusion of progress reinforces complacency and sustains the myth that racism is sporadic or individual.

Building upon these earlier definitions, more recent research (Kassimeris et al., 2022) reframes racism as a multi-layered process that operates across physical and digital spaces. It combines structural, cultural, and technological dimensions, from the governance of clubs to the algorithms that mediate fan interactions online. This broader definition underscores that racism is not a finite or isolated act but a continuously reproduced social system affected by and affecting institutions, media systems, and community dynamics.

Consequently, racism is an inherently complex and multi-dimensional phenomenon. It entails different causes, manifestations and can mean different things to different people. As a result, and in combination to its abstract nature, it is difficult to capture racism through simple metrics or indicators.

Addressing racism requires the interaction of multiple stakeholders, taking into account different elements and actions and a continuous monitoring of the context under which it is manifested. Hence, any methodological approach to understanding and combating racism must be capable of capturing dynamic relationships within a complex system.

Systems Thinking and System Dynamics are suitable candidates for such an effort. The methodology views problems from a systemic (or holistic) point of view, focusing on how a system's structure affects its behavior over time (Sterman et al., 2015). The aim is not to describe outcomes but rather to understand the mechanisms that give rise to those outcomes and assist policy makers in designing policies while minimizing unintended consequences (Myrovali et al., 2018).

The purpose of the current deliverable is to present a System Dynamics (SD) model that examines the phenomenon of racism in football and can assist in designing policies to counter it. The Graphical User Interface of the model can be found on: https://exchange.iseesystems.com/public/georgios-tsaples/briswa-20-interactive-learning-environment-on-policy-design-against-racism

The rest of the deliverable is structured as follows: The next section is focused on providing an overview of the methodology of System Dynamics, while the theoretical background and Causal Loop Diagram (CLD) of the model is presented in the section after that. The next two sections are focused on presenting the user interface of the model and how to use it and an array of different simulation scenarios with explanations. The final section concludes the deliverable and offers ideas and avenues for future use of the interface.

System Dynamics Essentials

A model can be defined as a simple representation of reality that can be used to assist policy makers, analysts or stakeholders to understand and explore a particular aspect of that world in a consequence-free environment (Pidd,1997). A useful model in addition, should offer the possibility to explore how its behavior could evolve over time and under different conditions (Meadows et al., 1974; Duggan 2016).

Many traditional modeling approaches rely on simplified assumptions that reduce complex phenomena to linear relationships or equilibria that fail to account for human behavior, unpredictable elements, the effect of delays (Tsaples and Armenia, 2016) or unintended consequences (Forrester, 2003).

To overcome these limitations, there is a need for holistic policy models that entail both the structure of a system and the interaction among its elements, including behavioral aspects or dimensions that are not easily quantifiable. System Dynamics is such a methodology.

A system is an interconnected set of elements that is coherently organized in a way that achieves a purpose. Thus, from the definition, it can be assumed that the main characteristics of a system are three:

- Elements: the entities which make up the system, they represent its fundamental constituents
- Interconnections: the relationships that link elements between each other. The structure of relationships defines a system as well as its elements: the nature of the system football team doesn't vary even if all the members are changed. If instead interconnections are modified (for example rules are distorted), the nature of the football team changes.
- Purpose: the objective which associates all the elements. Without a purpose, a system loses its identity (Meadows, 2008)

System Dynamics has two main branches: The qualitative part with the development of Causal Loop Diagrams (CLDs) that serve to illustrate mental models and what are the elements and interconnections of a system and the quantitative part, where the CLD is translated in a series of equations and the model is simulated and experimented upon.

A Causal Loop Diagram (CLD) is a combination of causal links between elements of the system under study; it can be seen as a mapping diagram that visualises how the elements of the system interact with each other and how the behaviour of one elements affects the behavior of another. A CLD consists of variables (systemic elements) and arrows/edges (causal relations) that connect the various variables. For example, in Figure 1 below, variable A affects variable B.

Figure 1 Causal Link between two variables

The arrow/edge that connects two variables does not only provide information about which variables affect other variables, but also what kind of impact this causal relationship represents. In typical System Dynamics notation, a causal link can be of two types:

- Positive. It is marked as + and it means that the two variables change in the same direction. For example, if variable A increases then variable B also increases. Or if variable A decreases then variable B also decreases.
- Negative. It is marked as – and it means that the two variables change in opposite directions. For example, if variable A increases then variable B decreases. Or if variable A decreases then variable B increases.

Apart from the polarity of the arrow (indication of the direction of change), the causal relationship can also illustrate if this change happens instantaneously or after a delay. Time delays are an important aspect of all real-life systems and of course of System Dynamics. At its core, a time delay indicates that the beginning of an action does not coincide with the time of the manifestation of the consequences of that action. For example, the action of turning on a fire to boil water is sooner than the event of the water boiling. Or if we consider governmental policies: if for example, a government increases the income tax of its citizens, the country's revenues will not increase instantly; rather an amount of time will pass before the effects of the increase are seen.
In CLDs, a time delay is indicated with two parallel lines, vertical to the causal link (Figure 2).

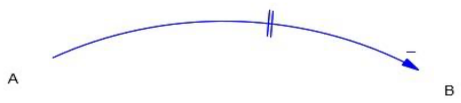

Figure 2 Causal Relationship with a time delay

In the specific example, if variable A increases, the variable B will decrease but after some time t.
One of the most important aspects of System Dynamics (and Systems Thinking in general) are feedback loops. Feedback loops are closed cycles of interconnected variables (Figure 3).

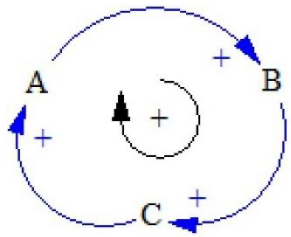

Figure 3 Example of feedback loop

Similar to causal links, feedback loops can be of two kinds: (a) positive and (b) negative. The feedback loop of Figure 3 is an example of a positive feedback loop.
Positive /Reinforcing Feedback Loops: Assume the positive feedback loop of Figure 3. If variable A increases, then variable B will also increase (positive causal link). The increase of variable B will cause an increase in variable C (positive causal link between B and C). The increase of variable C however will cause an increase in the variable A (positive link between C and A), which will enhance the initial increase of A.
Positive feedback loops can also be formed with negative causal links. For example, in Figure 4 assume an initial increase of variable A.

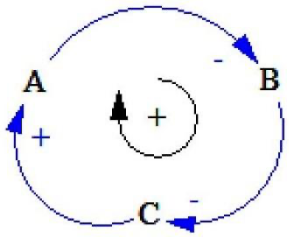

Figure 4 Positive feedback loop with negative links

The increase of variable A will cause a decrease of variable B (negative causal link, which means opposite directions of change). The decrease of variable B will cause an increase in variable C (negative causal link between B and C, which means opposite directions of change for the two variables). Finally, the increase of variable C will cause an increase in variable A (positive causal link, which means similar directions of change) which will enhance the initial increase of A, thus the feedback loop is positive.
The presence of positive feedback loops in systems means that there will probably be an exponential increase or exponential decrease of the behavior of the system, which is not always a good sign for the system's operation. For example, during the COVID-19 pandemic, the system of people who were infected with the virus during a wave increased exponentially.
Negative feedback loop
A negative/balancing feedback loop is form when all links are negative (or when their number is odd). For example, in Figure 5 there is an illustration of two potential negative feedback loops.

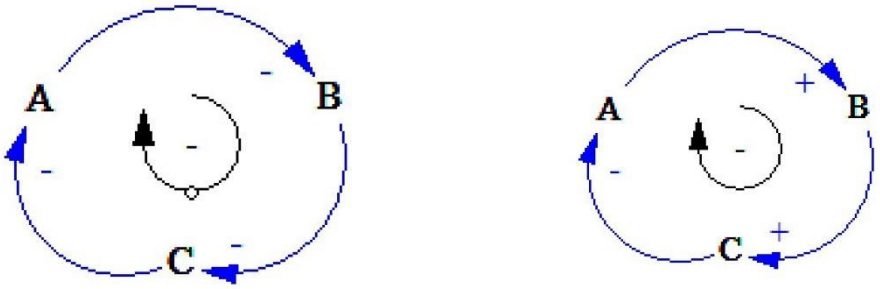

Figure 5 Examples of negative feedback loops

For example, the loop on the left has the following behavior: an initial increase in variable A will cause a decrease in variable B (negative causal link, opposite directions of change between the two variables). The decrease of B will cause an increase in variable C (negative causal link, opposite directions of change between the two variables), which will cause a decrease in variable A (negative causal link, opposite directions of change between the two variables). The final decrease of variable A might be bigger than the initial increase, thus canceling its original, intended effect.
Consequently, a negative feedback loop brings the system to an equilibrium and for that reason they are also called Balancing loops. One typical example of a negative loop is the interaction between a person and their thermostat: if they feel cold they will increase the temperature in the thermostat until the environment reaches a certain temperature. However, if the temperature goes above the desired limit, then the person will feel heat and will lower the temperature in the thermostat until an equilibrium is reached.
These simple structures have been used extensively in the literature to represent and model complex systems.
However, as it was mentioned above, a Causal Loop Diagram is only a graphical representation of the system under study and cannot be simulated. To simulate such a model, there is the need to transform it in a quantitative System Dynamics model. The main elements of a quantitative model are stocks and flows (Figure 6).

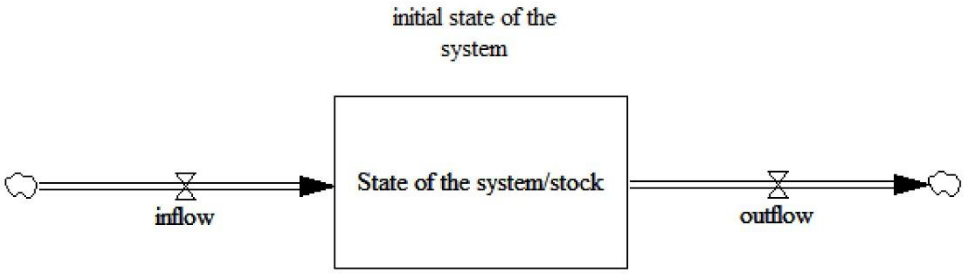

Figure 6 Typical Stock and Flow diagram

A stock represents the state of the system, which increases by the inflow and decreases by the outflow. A stock and its flows can be regarded as a bathtub: the water in a bathtub increases when we open the faucet and decreases when we open the drain. If for example we close the drain and open the faucet, the level of water in the bathtub will increase faster. If consequently, we close also the faucet, the water in the bathtub will not be zero; it will have the latest level (value) that reached before we closed the faucet.
This behavior is represented mathematically with the following equation:

$$State\ of\ the\ system(t) = initialstate\ of\ the\ system(t0) + \int_{t0}^{t} \big(inflow(s) - outflow(s)\big)ds$$

System Dynamics allows for the possibility to experiment with simulation models through Graphical User Interfaces (GUIs) and Interactive Learning Environments (ILEs) that allow a user to experiment with a model without having any mathematical knowledge, apart from an understanding of Systemic Thinking.

Model Structure

To develop the model structure, a search on the literature was made to analyze either the phenomenon of racism and its causes or if System Dynamics models exist that capture any of its aspects.
The table below summarizes key causal relationships and their source.

Table 1 Summary of causal relationships identified in the literature

CLD Variable / Theme	Causal Relationship	Source
Racist Incidents	**→ Cumulative Club Costs**	Cleland & Cashmore (2014): weak deterrence through minimal fines; BRISWA 2.0 Deliverablable 3.1: clubs sanctioned for racist acts in sport venues.
Racist Incidents	**→ Reputation (–)**	Holland (1995): racist episodes tarnish image of football stadiums; BRISWA 2.0 Deliverablable 3.1: institutional denial of racism damages credibility.
Reputation	**→Attendance (+)**	Armenia et al. (2019): positive reputation draws attendance; BRISWA 2.0 Deliverablable 3.1: inclusive sport culture enhances participation.
Attendance	**→ New Fans Inflow (+)**	Armenia et al. (2019): higher public engagement promotes inclusion; BRISWA 2.0 Deliverablable 3.1: inclusive events attract new participants.
Share of Radicalized	**→ Incident Generation (+)**	Armenia et al. (2019): racist behavior imitates and spreads; Cleland & Cashmore (2014): unchallenged racist acts propagate.

Exposure Index	**→ Radicalization Rate (+)**	Udjari (2021): exposure to discrimination increases prejudice; Armenia et al. (2019): reinforcement from repeated racist experiences.
Radicalization Rate	**→ Pre-radicalized Fans (+)**	Armenia et al. (2019): socio-political instability increases populist/racist leanings
Pre-radicalized Fans	**→ Radicalized Fans (+)**	Armenia et al. (2019): escalation loop from pre-radicalized to radicals; Udjari (2021): social tension and polarization increase prejudice.
Disillusionment	**→ Reintegration to Fandom (+)**	Gullett et al. (2022): healing and perspective transformation can reintegrate; BRISWA 2.0 Deliverablable 3.1: training on diversity aids reintegration.
Education Intensity	**→ Trust Index (+)**	Udjari (2021): education improves trust and reduces discrimination
Transparency Index	**→ Trust Index (+)**	Reynolds (2021): legitimacy and openness improve trust; BRISWA 2.0 Deliverablable 3.1: transparency of enforcement increases institutional trust.
Trust Index	**→Disillusionment (–)**	Udjari (2021): reduced alienation when trust rises; BRISWA 2.0 Deliverablable 3.1: inclusive governance mitigates resentment.
Societal Racism	**→ Radicalized Fans (+)**	Brown et al. (2025): systemic racism acts as attractor; BRISWA 2.0 Deliverablable 3.1: structural racism normalizes exclusion.
Societal Racism	**→ Deterrence Index (–)**	Cleland & Cashmore (2014): weak institutional deterrence due to normalization;
Steward Training	**→ Deterrence Index (+)**	Cleland & Cashmore (2014): steward inaction perpetuates racism;
Sanction Visibility	**→ Deterrence Index (+)**	Cleland & Cashmore (2014): minimal fines lack effect; visible sanctions increase deterrence.
Enforcement Intensity	**→ Deterrence Index (+)**	Holland (1995): weak enforcement of Football Offences Act reduced control
Counter Narratives Intensity	**→Exposure Index (–)**	Udjari (2021): inclusive narratives reduce discrimination; Armenia et al. (2019): anti-racism campaigns counter exposure.
Reputation (–)	**→ New Fans Inflow (–)**	Armenia et al. (2019): negative reputation deters engagement
Cumulative Club Costs	**→ Deterrence Index (+)**	Cleland & Cashmore (2014): significant penalties incentivize change
Representation Index	**→ Trust Index (+)**	Reynolds (2021): legitimacy through inclusion
Reintegration to Fandom	**→ Neutral Fans (+)**	Gullett et al. (2022): healing loops restore participation

Based on the relationships that were discovered in the literature the model structured was determined by the development of the CLD. Based on the knowledge gained by the previous deliverables of the project, it was decided that football would be used as an analogy for the model. Consequently, the simulation model attempts to provide insights about racism in football and how it can be mitigated. It should be noted however, that the relationships described are theoretical and exploratory, representing patterns identified in the literature rather than empirically validated laws

Firstly, three types of fans are defined: Normal fans, pre-radicalized and radicalized fans. The radicalized are considered the perpetrators of racist acts. This is a typical chain of stocks in system dynamics: Normal fans are transformed to pre-radicalized according to a radicalization rate, who in turn escalate and become radicals. The number of those radical fans increases the share of radicalized fans compared to the total number of fans, which in turn increases the extent to which all fans can be exposed to radicalization (through an exposure index) thus creating a positive feedback loop (R1, Figure 7).

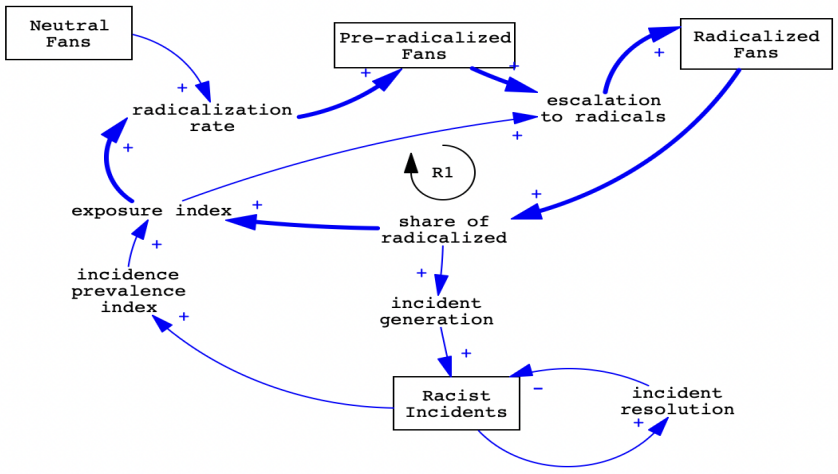

Figure 7 Radicalization Positive Loop

The share of the radicalized fans does not only expose all fans to more radicalism, it is directly responsible for the generation of racist incidents. The extend to which these incidents are visible (through the incidence prevalence index) further increases the exposure index which creates even more radicalized fans (R2, Figure 8).

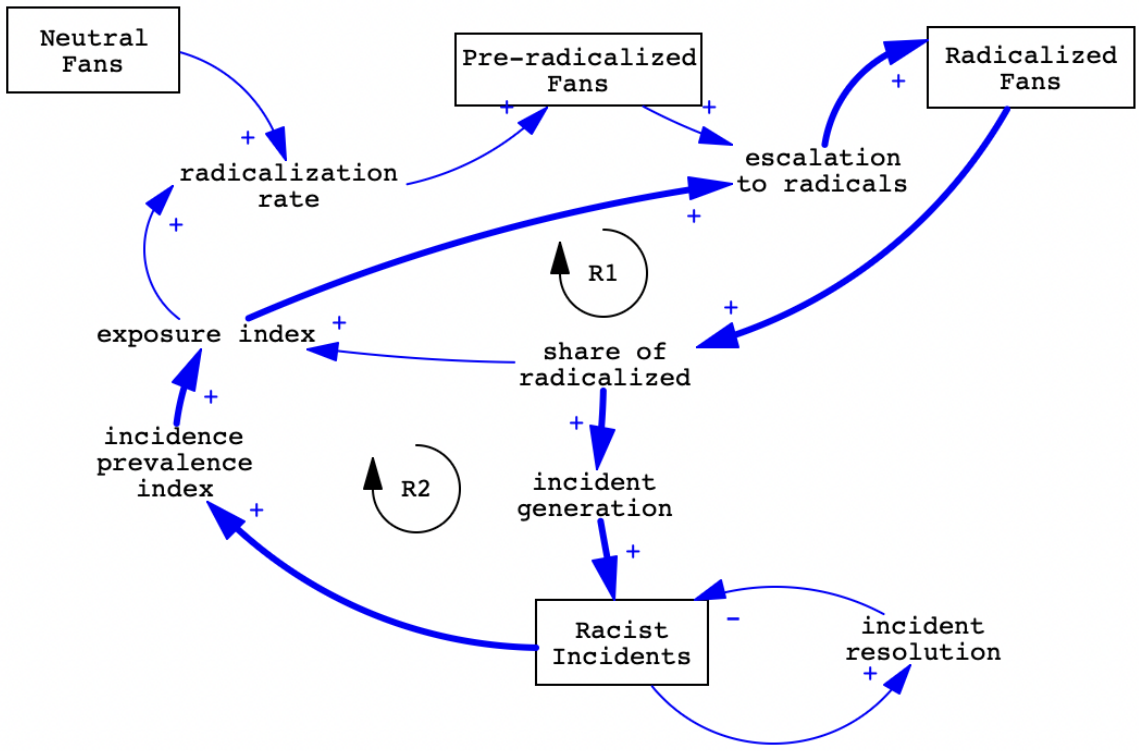

Figure 8 Racism increases radicalization loop

The feedback loops R1 and R2 are not responsible only for the increase in the number of radicalized fans. If properly addressed they could act as a mechanism to reduce the number of those radicals. To achieve such a transformation, a football club could train stewards to detect and stop racist behavior, while higher authorities could increase the intensity of enforcement mechanisms or establish not only large sanctions but also make those sanctions visible. All these elements would increase the deterrence index which in general decreases the number of radicalized fans (Figure 9). Thus, the positive feedback loop R1 which can be responsible for the big increase of radicalized fans, if appropriately deterred could lead to significant reduction of such fans, through deterrence.

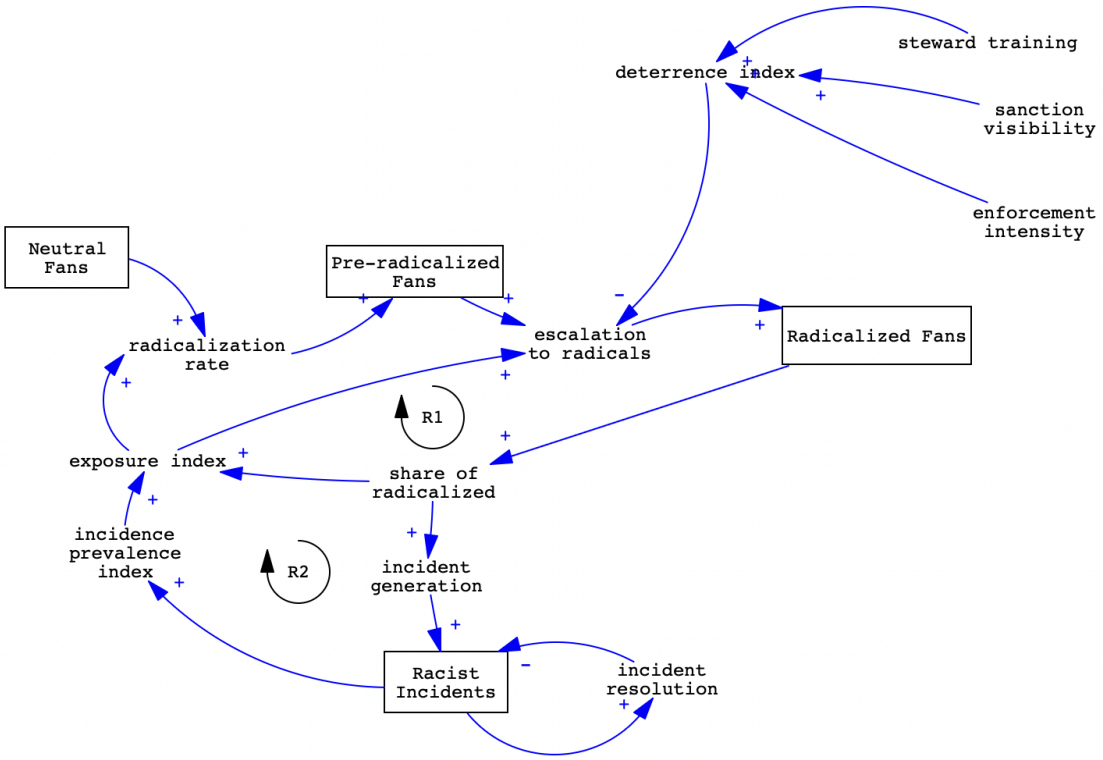

Figure 9 Different pathways for the R1 positive loop

Deterrence is not the only policy that could be applied. If football clubs or associations increase their transparency, the level of education to players and fans and their then the overall trust towards the club increases which acts as a catalyst so that the flow of the chain reverses: radicalized fans become pre-radicalized who in turn revert to normalcy (Loops R3 and R4) thus reducing the overall number of racist incidents (Figure 10).

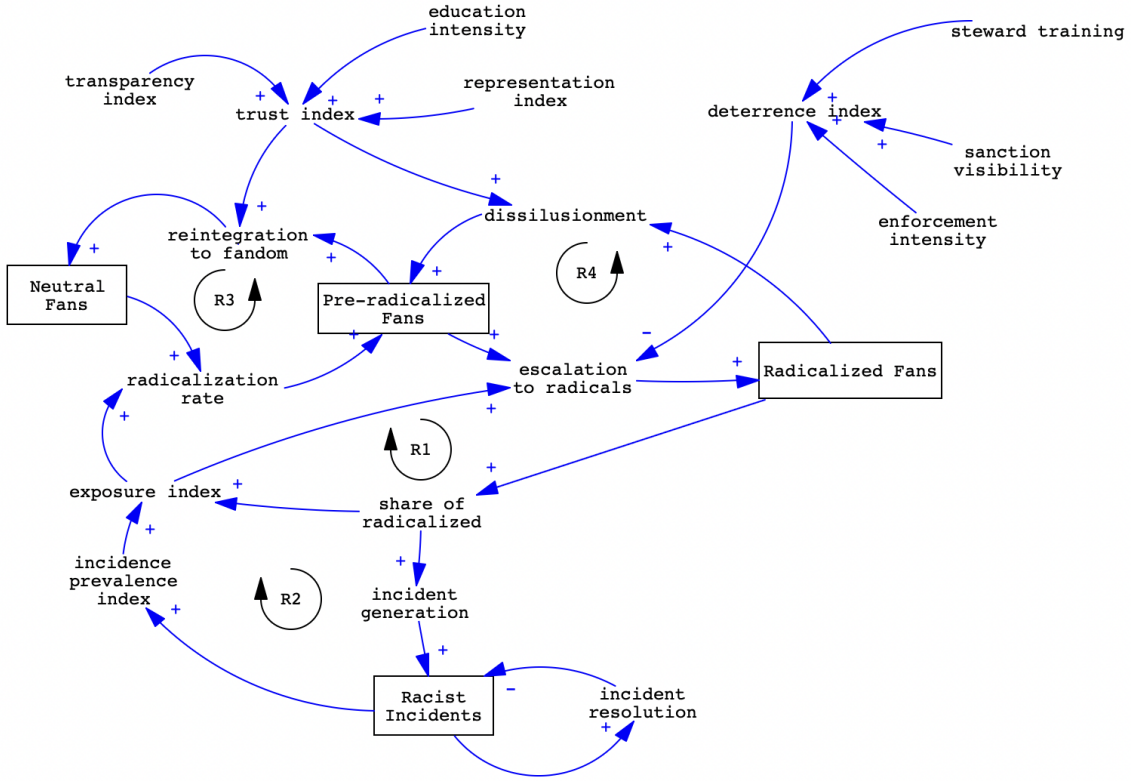

Figure 10 The effect of trust on the radicalization process

Trust and representation are not only responsible for reversing the effect of the fans' chain but they are also responsible for the attendance to the football fields. The lower the representation the lower the reputation of the club which reduces the attendance which reduces the number of racist incidents, which after a delay increases the reputation of the club, thus creating a balancing loop (Figure 11).

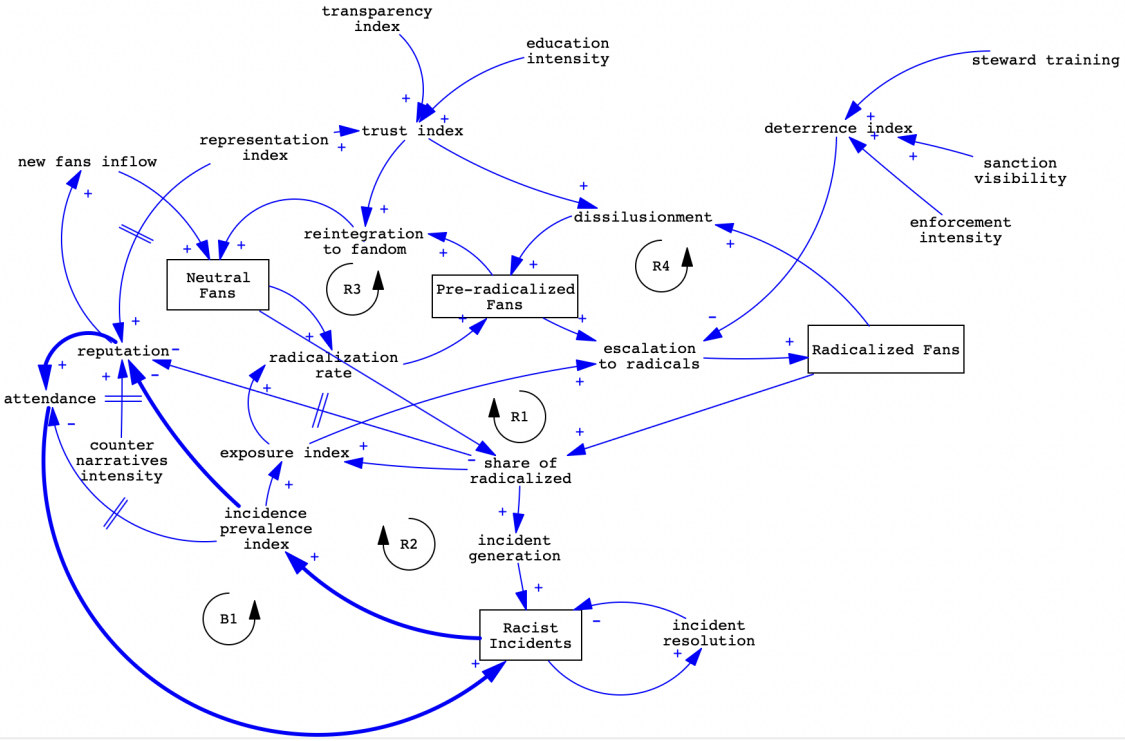

Figure 11 The effect of reputation

In addition, the reputation of the club does not only affect attendance directly, but it can also increase the number of new fans for the club. As the new fans increase the number of neutral fans, the share of radicalized falls, which reduces the number of racist incidents further increasing the reputation of the club (Figure 12).

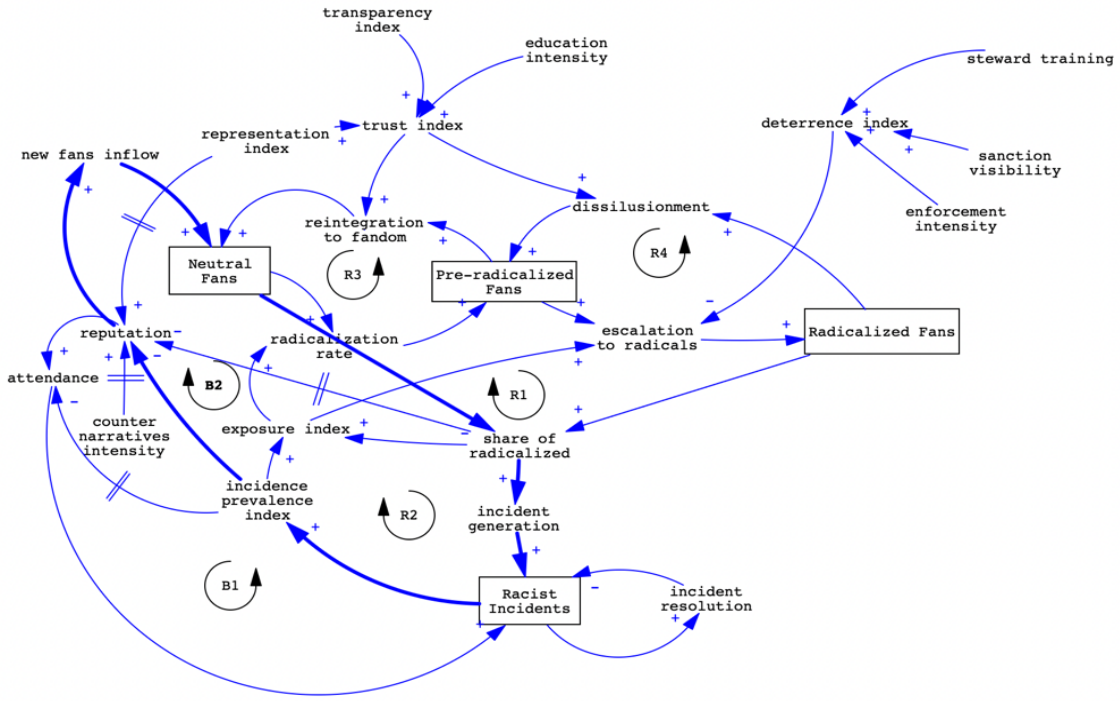

Figure 12 Effect of reputation on new fans

This is translated for reduced costs for the clubs, as bigger attendance will decrease the costs that will increase from all the previous policies (education, stewards, etc.). The reduced costs incentivize the clubs to invest in such measures as they will increase the deterrence index, which as was explained before can be a mechanism to reduce the overall number of racist incidents (Figure 13). Consequently, deterring and reducing racism in the fields can have concrete financial gains for the clubs.

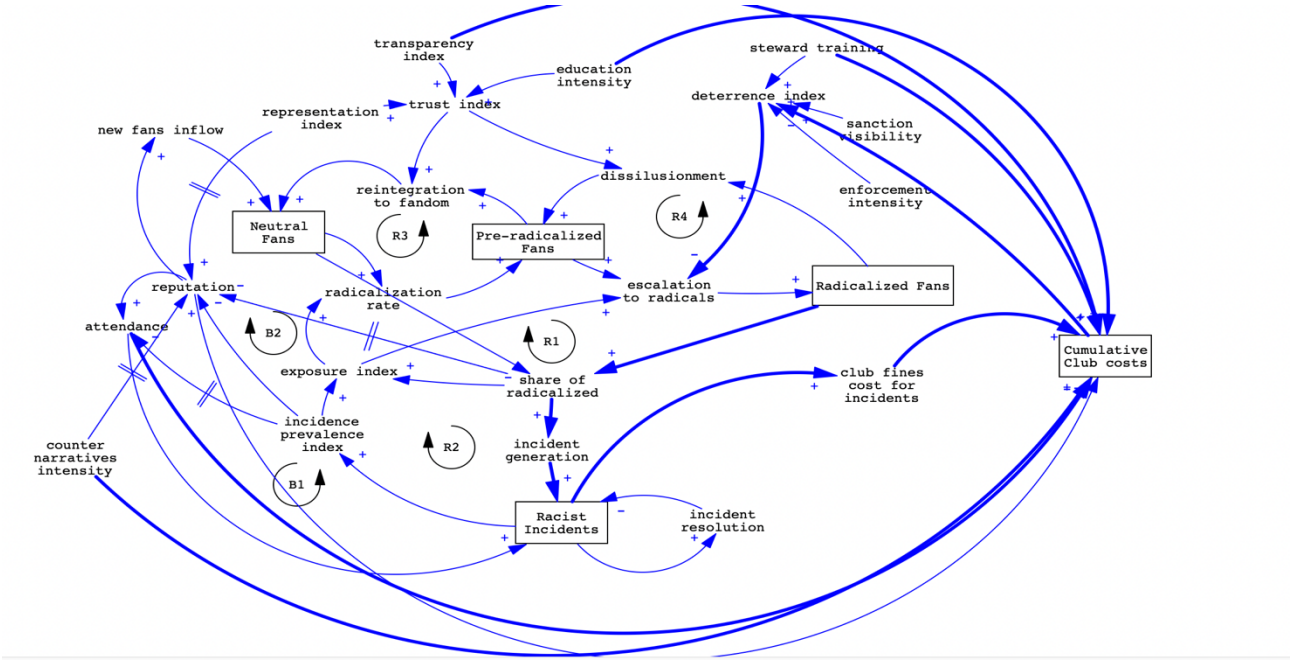

Figure 13 Costs and Racist Incidents

In conclusion, this simple structure despite the many generalizations contains nested feedback loops that represent the complexity of the phenomenon of racism. However, through that simplicity and complex nature, clear mechanisms emerge that illustrate how racist incidents can be reduced and this can be financially beneficial for the club.
It is important to note that while the causal structure appears sequential, it should not be interpreted as suggesting that racism can be controlled through linear processes. The relationships illustrated represent hypothesized systemic interactions that aim to support reflection and policy exploration rather than prescriptive or deterministic mechanisms. Racism remains a dynamic and adaptive system, continuously reshaped by cultural, institutional, and technological forces.
The complete CLD of the model is depicted on Figure 14.

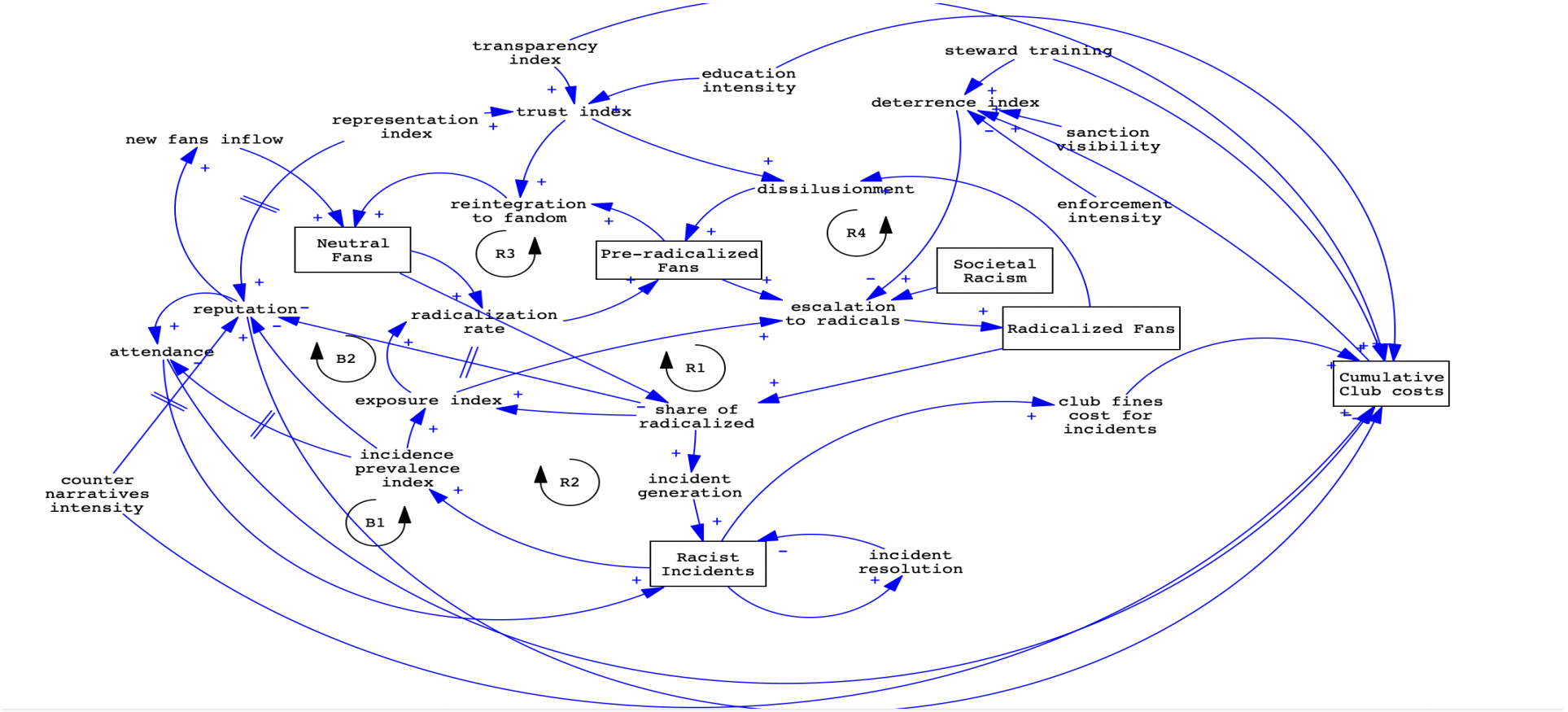

Figure 14 Complete Causal Loop Diagram of the BRISWA 2.0 Simulation model

User Interface

The GUI of the simulation model can be found on:
https://exchange.iseesystems.com/public/georgios-tsaples/briswa-20-interactive-learning-environment-on-policy-design-against-racism

The model assumes three principal types of stakeholders, each with distinct intervention points and outcomes of interest:

1. Fans

Fans represent the base layer of the system. Their decisions directly influence attendance levels, exposure to racism, and the rate at which incidents are reported.

Fans can decide:

- whether to attend a game or boycott it based on the perceived reputation and safety of the environment;
- whether to report racist incidents when they occur.

Their behaviour not only affects the visibility of racism but also generates feedback that pressures clubs and associations to respond more effectively (Figure 15).

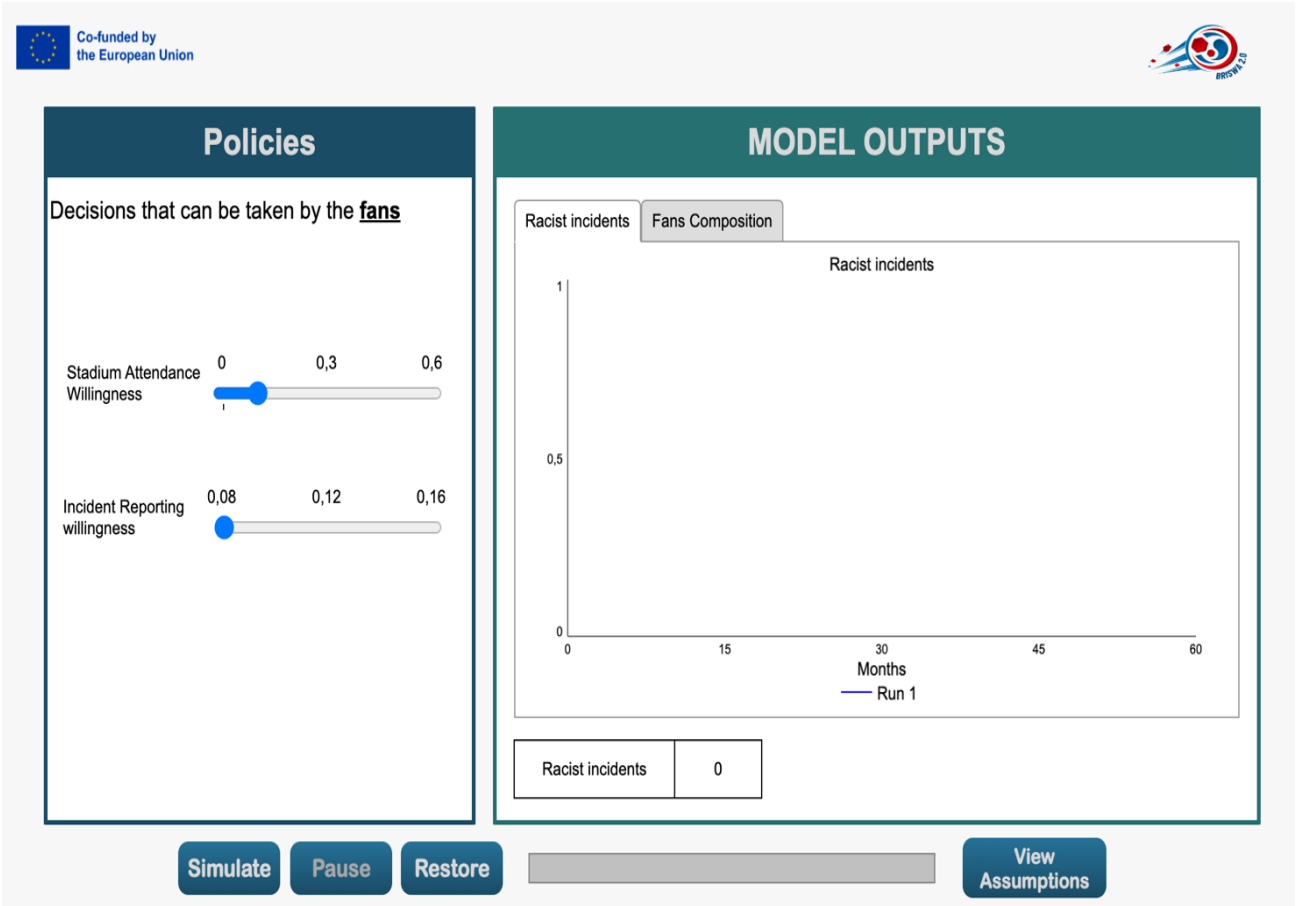

Figure 15 The main page for the decisions and results for the fans

2. Football Club Managers

Clubs act as the primary institutional actors in the model. They are responsible for implementing direct interventions that influence fan behaviour and reputation.
Club managers can decide to:

- train stewards to handle and prevent racist behaviour,
- organize counter-narrative campaigns,
- enforce education programmes for fans and players, and
- improve transparency to enhance public trust.

Each intervention carries an associated cost, contributing to the cumulative monthly expenditure of the club.
Managers must therefore balance their financial sustainability with their reputational goals and fan attendance levels.
High costs may undermine profitability, while insufficient investment risks escalating incidents and damaging the club's public image (Figure 16).

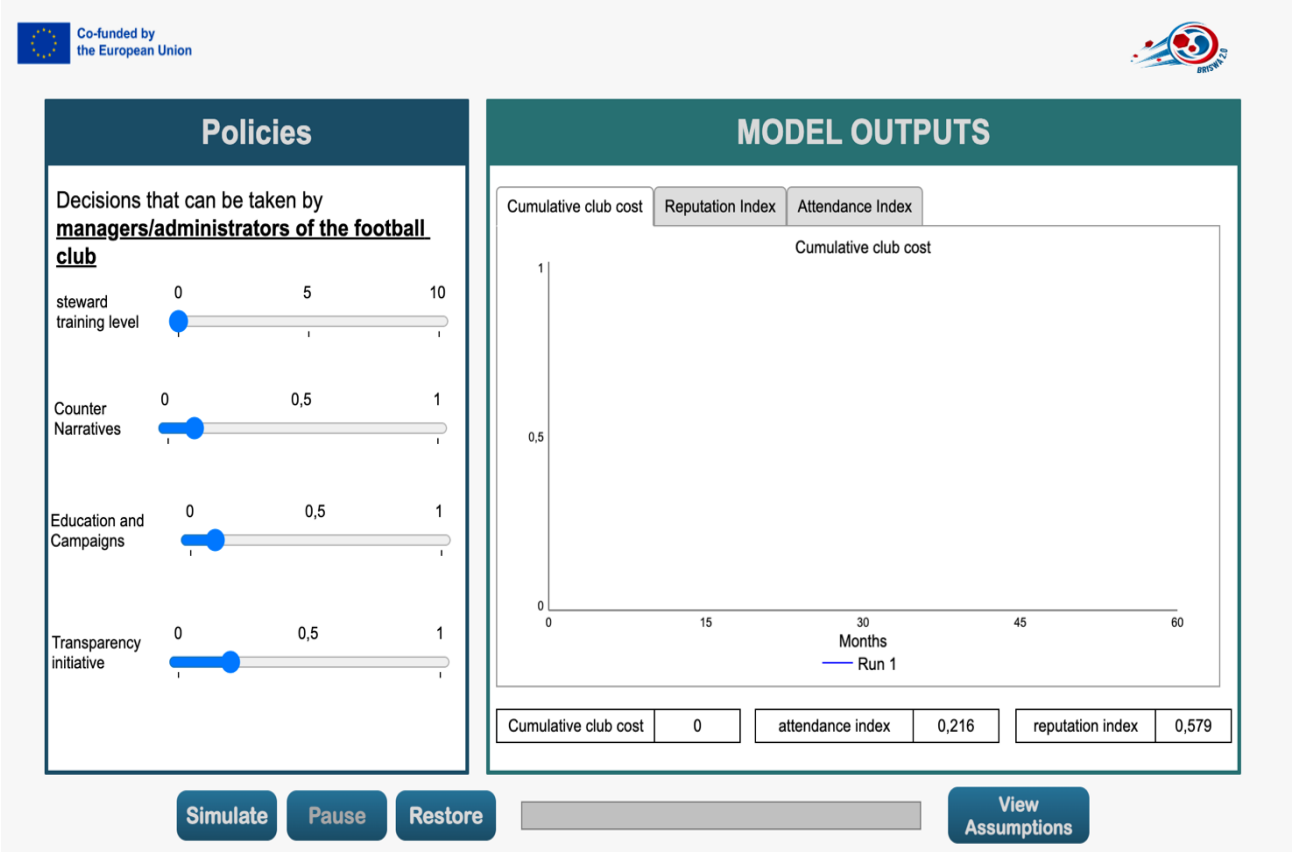

Figure 16 The main page for the decisions and results for the football club

3. Association Managers

At the regulatory level, association managers determine the strength and visibility of institutional enforcement.
They can decide to:

- increase enforcement intensity,
- make sanctions more visible to deter misconduct,

- impose financial penalties on clubs for losing sponsorships due to reputational damage, and
- set the fine per racist incident.

These decisions influence the deterrence index, which in turn shapes the likelihood of future incidents.
From the association's perspective, the reputation of individual clubs serves as a proxy for the reputation of the league as a whole, meaning that club-level outcomes have systemic implications for the credibility and social standing of the entire football ecosystem.

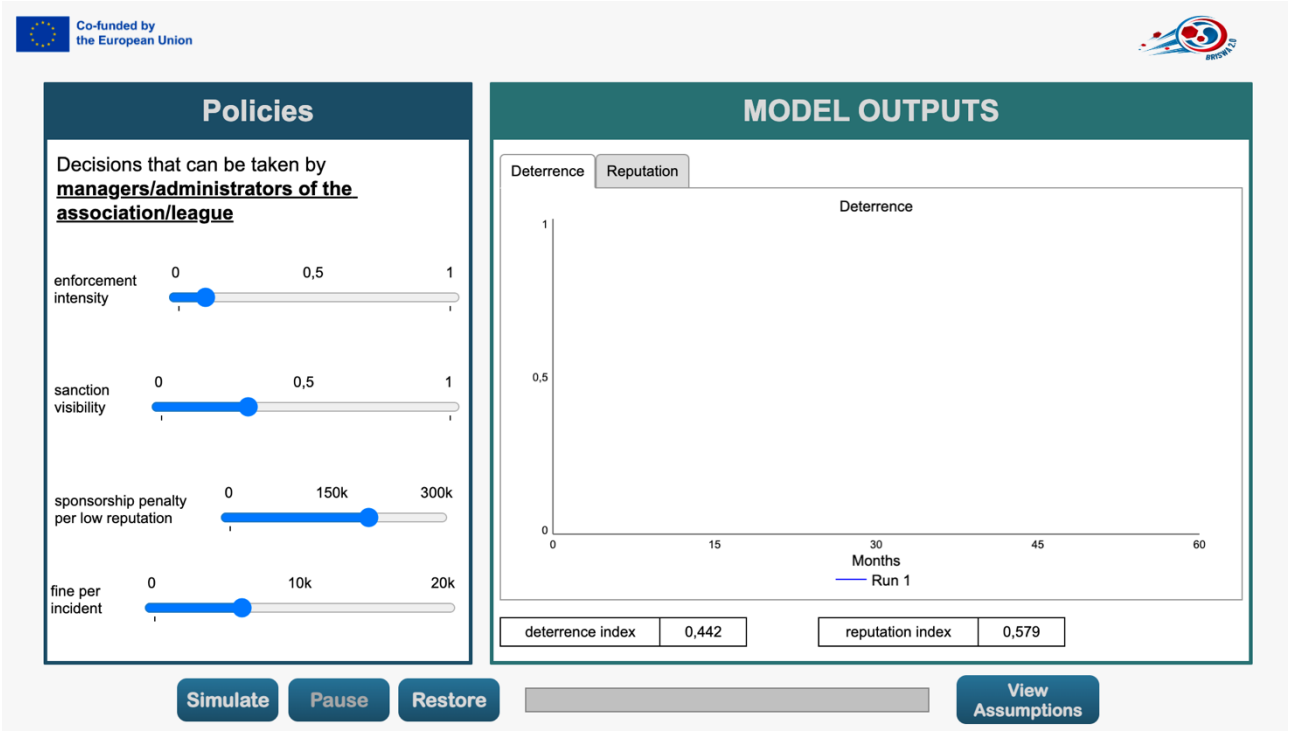

Figure 17 The main page for the decisions and results for the association

To start the simulation a user can press the Simulate button. At any point they can Pause the simulation, change any of the sliders available and by pressing the Simulate Button again they can see how their interventions change the results.
By allowing the simulation to run to its end, the user could either press the Restore button and every slider will return to its original value, while the graphs become empty. However, if they wish to test different scenarios, the could press Simulate again at the end of a simulation and comparative graphs will start to be generated.

Scenarios

In the basic scenario (with the original values of the sliders/policies) the number of racist incidents increases and reaches a steady point around the middle of the simulation time where it stabilizes at 88 incidents per month (Figure 18).

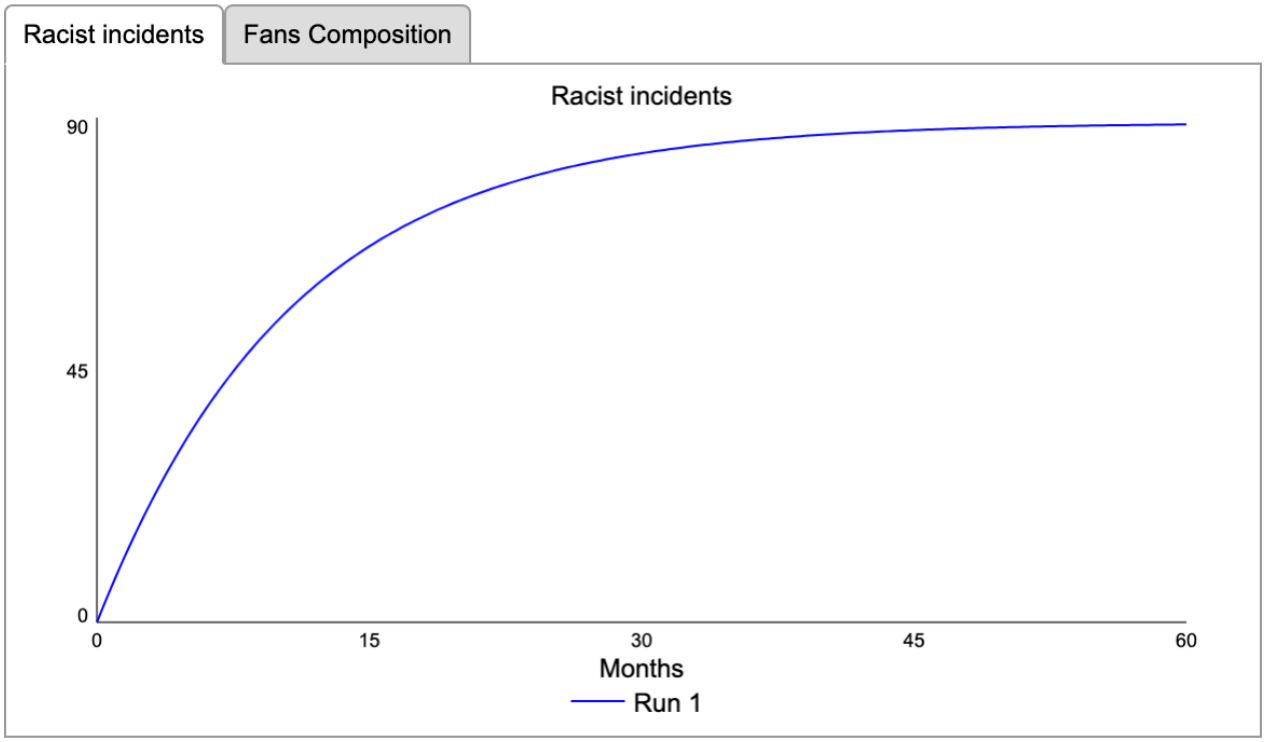

Figure 18 Racist Incidents for the basic scenario

However, if all three types of stakeholders intervene **after** the simulation begins, it can be observed that the number of racist incidents decreases before it stabilizes at around 83 incidents per month (run 2 of Figure 19). If the same policies are applied from the start of the simulation time, the number of racist incidents at the end of the simulation time is the same as Run, but overall it is steady and higher for the majority of the simulation time. Consequently, not only the level of the policy, but its timing and consistency also matter (Run 3, Figure 19).

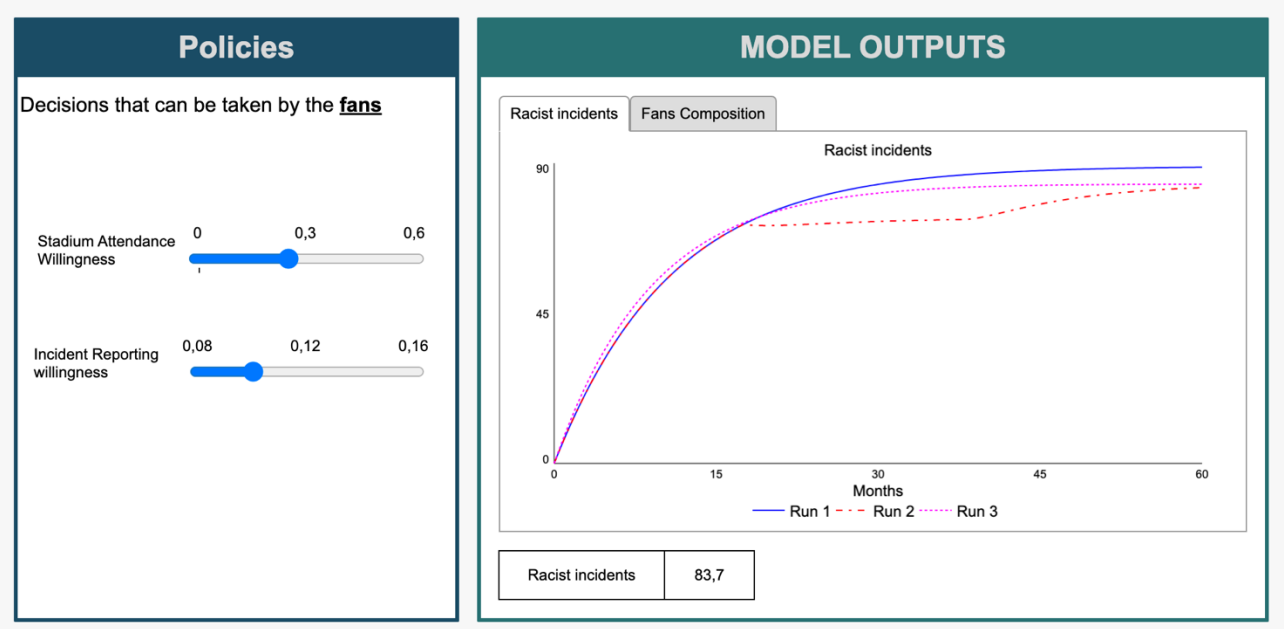

Figure 19 Racist incidents for various scenarios

As it was mentioned before, each intervention is accompanied by a cost and it can be observed, that as expected the costs will rise. However, the increase is not that different than the basic scenario because the reduced number of racist incidents increases the reputation of the club (Figure 21) which increases the attendance to the stadium which in turn reduces the cumulative costs (Figure 20).

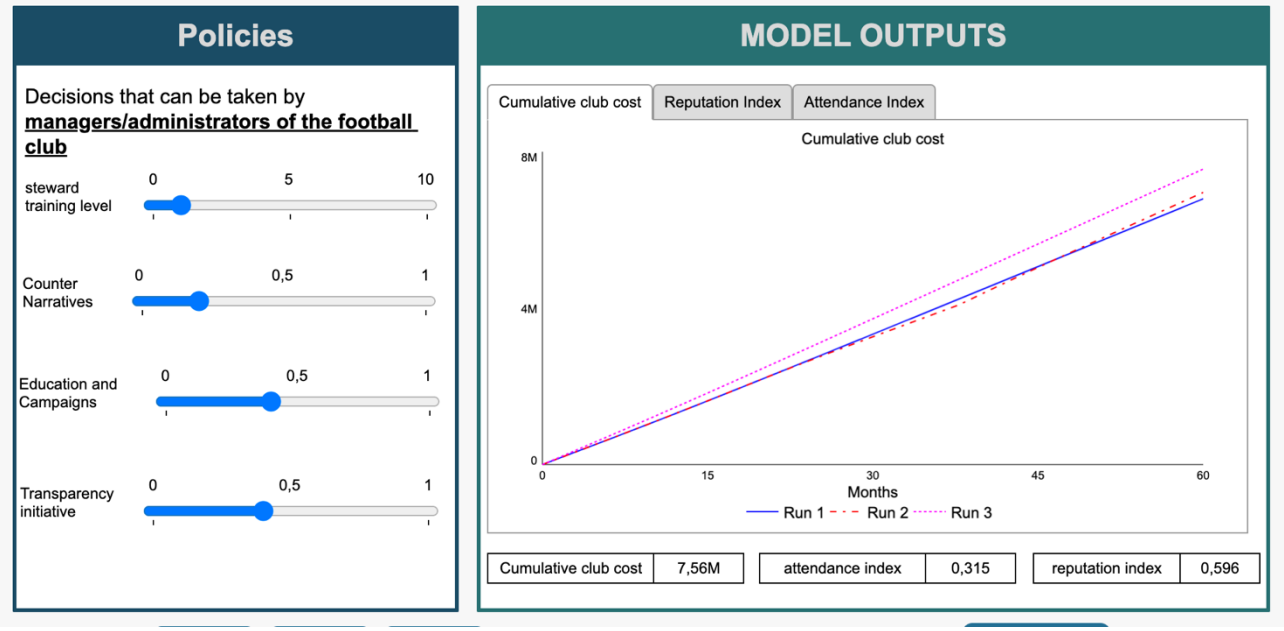

Figure 20 Effect on club's cumulative costs for the various scenarios

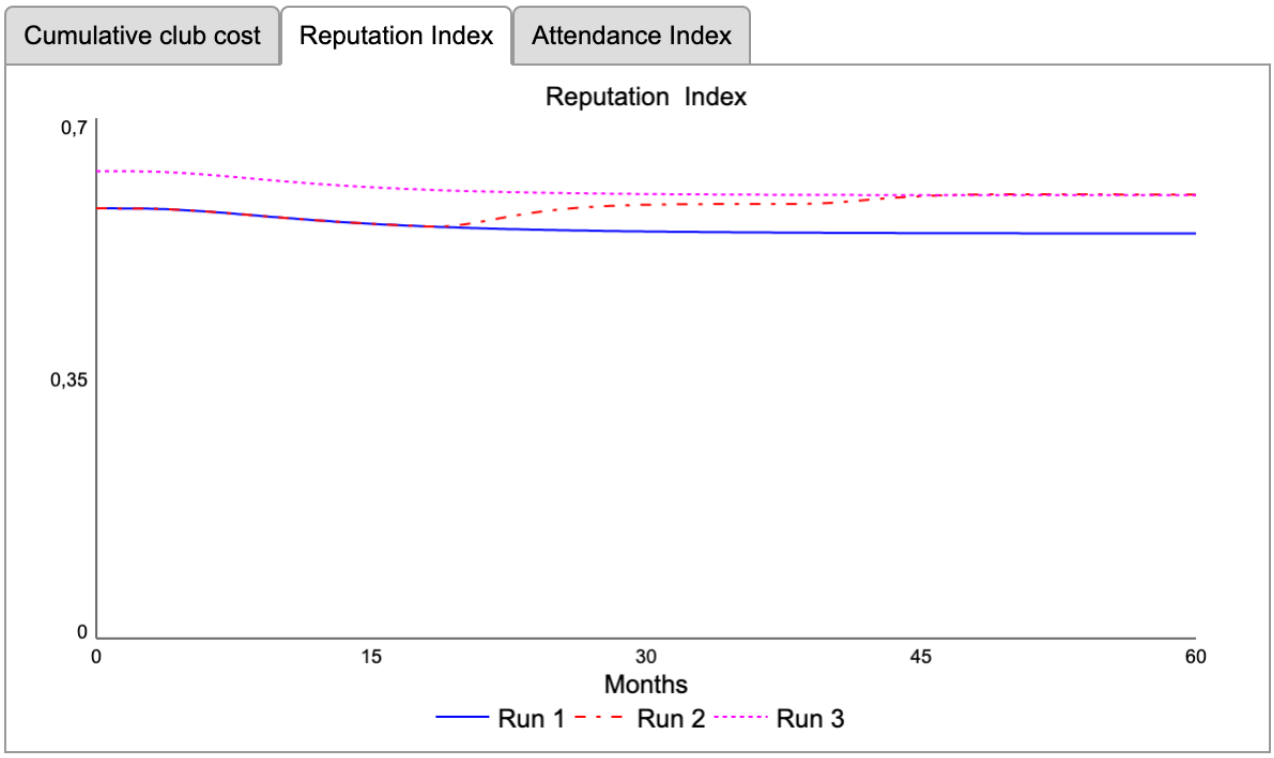

Figure 21 Effect on the reputation of the club for the various scenarios

As a result, the ILE captures the complex and multi-perspective nature of racism in football and provides the opportunity to fans to understand how their simple decisions can affect the phenomenon, to club managers how the balancing of costs and reputation requires multiple decisions across time and to associations how the cooperation with other stakeholders and a policy of zero tolerance for racism could have a positive impact over time.

Conclusions

The model developed within the BRISWA 2.0 context illustrates how racism in football cannot be addressed through isolated measures, because it is a complex phenomenon that is sustained by feedback loops that connect individual attitudes, institutional decisions, and wider social conditions. The advantage of the simulation model that was developed is that by representing these causal links explicitly, it allows users to see how small, timely interventions can change systemic trajectories that would otherwise reinforce discriminatory behaviour.

However, these relationships are drawn primarily from observational and case-based research and should therefore be viewed as plausible pathways rather than proven causal mechanisms. The model's feedback loops express theoretical hypotheses about system behaviour, meant to inform policy dialogue and further empirical testing, not to assert definitive cause and effect relationships.

The scenarios that were tested in the ILE offered valuable insights by illustrating that deterrence and education might in general be treated as separate measures, however, they are most effective when combined. Enforcement alone can slow escalation and reduce the overall number of racist incidents, but it is not capable alone to transform the underlying attitudes that sustain racism. Education and trust-building might take longer to show results, yet their effects accumulate, reversing the radicalization chain and gradually restoring balance.

The strength and direction of these mechanisms are likely to vary depending on contextual factors such as club size, fan demographics, local history, media visibility, and national regulatory environments. Moreover, the current evidence base suffers from data gaps, particularly the absence of large-scale longitudinal datasets capable of tracking changes in fan behaviour, incident prevalence, and institutional responses over time.

The model hence demonstrates that policies need both immediacy in order to address incidents, and depth (or time) to reshape the conditions that produce them.

Equally important is the model's capacity to reveal the trade-offs faced by different stakeholders. Club managers must weigh the financial cost of interventions against the reputational and social costs of allowing racism to be manifested in the stadiums. Associations must decide whether to rely on punitive visibility or foster collaboration and learning. Fans, too, are not passive recipients but active participants whose choices to attend, engage, or report can shift the overall behaviour of the system. The effects and decisions of these different perspectives underlines the fact that racism is not an external crisis to be managed but a systemic condition that requires distributed responsibility. The model therefore serves not to replace moral reasoning with simulation but to reinforce it with structured reflection and shared understanding.

In essence, the model serves not to replace moral reasoning with simulation but to reinforce it with structured reflection and shared understanding, hence the interactive learning environment functions as more than a technical tool. It is a narrative and educational instrument that exposes how intentions translate into outcomes within a dynamic context. The experimentation for investigating different scenarios in a consequence-free environment,

allows users to move from abstract awareness to structural understanding. Thus it allows them to see racism not as an accumulation of acts but as an evolving system that responds to policy design.
Future work could extend this model to include cross-club interactions, comparative contexts, or the influence of media and digital environments. However, even in its current form, the simulation provides a foundation for dialogue between researchers, educators, and practitioners. Finally, it can act as an educational tool that gives concrete context to the abstract nature of racism.

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