

The Legitimacy of Implementing The Concept of Sustainable Development In The Motorsports Industry As Assessed By Formula 1 Fans: A Quantitative Research*

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Abstract

For the purposes of this study, a survey was conducted with the main objective of assessing the level of awareness and acceptance of the idea of sustainable development among Formula 1 fans in the context of the motorsports industry. A survey was used as the research method. The survey was conducted from January to February 2025 among F1 racing fans, using a questionnaire embedded in Microsoft Forms. It was sent to members of a group created on Facebook, bringing together Polish F1 fans. A total of 296 people took part in the survey. The synthesis of qualitative material obtained through open-ended questions was conducted using content analysis and semantic clustering. The survey shows that more than half of the respondents declared their familiarity with the concept of sustainable development. It was most often defined in accordance with the classic approach proposed in the Brundtland Report. The degree of acceptance of ESG activities varied. More than half of the respondents denied the sense of the motorsport industry's involvement in Governance. As for "Social" and "Environmental," the shares of negative votes were 46% and 34%, respectively.

Keywords: motorsport industry, Formula 1, sustainable development/ ESG, F1 fans

Introduction

For decades, the motorsport industry has been associated with speed, modern technology, and intense emotions. At the same time, it remains one of the most energy-intensive and emission-heavy sports. Competition on tracks around the world involves intensive fuel consumption, frequent air travel, and a high environmental footprint. The organization of racing series also generates numerous social problems. As an elite sport dominated by men and people from wealthy countries, motorsport faces the challenge of ensuring equality, diversity, and accessibility. Other significant issues include the safety of competitors, their mental health in the face of increasing media pressure, and a lack of transparency in decision-making and regulation, particularly in the context of refereeing and the interpretation of rules.

In recent years, at the center of the global debate on sustainable development, motorsport has begun to change. There is now an increasing emphasis on reducing emissions, developing alternative fuels, energy efficiency, combating discrimination against women, protecting human rights, and increasing the transparency of the decision-making process. These are just some of the wide range of activities undertaken in the areas of ESG (Environmental, Social, Governance).

Fans are undoubtedly among the key stakeholders in the industry under analysis. They are the ones who give meaning to advertising contracts and the involvement of large automotive and oil companies in the organization

of racing series. Due to their significant influence, they can act as a catalyst for change in the industry towards sustainable development. An interesting area of research is therefore to identify the extent to which fans are familiar with and accept the idea of sustainable development and what kind of commitment they expect from entities in the motorsports industry.

A study was conducted with the main objective of assessing the level of awareness and acceptance of the concept of sustainable development/ESG among Formula 1 fans in the context of the motorsport industry. The research questions sought to answer were as follows:

Q1: How do F1 fans define sustainable development?

Q2: What irregularities do F1 fans perceive in the context of the impact of motorsport industry entities on the environment, society, and corporate governance (ESG)?

Q3: How do F1 fans view the need for the motorsport industry to engage in environmental, social, and corporate governance issues?

Q4: What actions, in the opinion of F1 fans, should be taken in the context of the sustainability of motorsport entities?

The motorsports industry and sustainable development

History and significance of the motorsports industry

Motor sport (also known as motorsport or motosport) is a field of sport involving competition in land vehicles powered by internal combustion engines, jet engines, turbine engines, rocket engines, or electric motors (Lipinski, 1987). It is divided into four disciplines: karting, motorcycle racing, car racing, and speedway racing. The first car races began in the 1890s. These were inter-city (sometimes international) races organized on public roads that were not adapted to car traffic, let alone car racing. The last race organized in this form was the Italian Mille Miglia, which ran until 1957. Another important step in the development of the motorsports industry was the founding in 1904 of the International Association of Automobile Clubs Reconnus, which later evolved into the International Automobile Federation (FIA - Fédération Internationale de l'Automobile) (Cofaigh, 2022). In the same year, the International Federation of Motorcycle Clubs was founded, which later evolved into the International Motorcycling Federation (FIM - Fédération Internationale Motocycliste).

After the end of World War I, the development of the motorsports industry gained momentum due to support from new totalitarian regimes (fascism and nazism). In Italy, during the interwar period, the automotive industry (including the local motorsports industry) was classified as strategically important for national defense. Supporting the Italian motorsports industry benefited the authorities, as technologically advanced racing cars were used for propaganda purposes to communicate the rapid pace of Italy's industrialization (Aversa, Schreiter, Guerrini, 2023). A similar situation occurred in Germany, where the successes of the Mercedes racing team were used for propaganda purposes. The development of motorsports was halted by the outbreak of global armed conflict. After the end of World War II, motorsports entered a new phase of development, and in 1950, a new Grand Prix racing series called Formula 1 was created (Jenkins, 2010).

Leading entities in the motorsports industry include: FIA, FIM, Formula One World, Championship Limited, Mercedes-Benz Group AG, Ferrari NV, McLaren Racing, Red Bull GmbH, Williams Group, National Association for Stock Car Auto Racing LLC, and Porsche Penske Motorsport.

According to Business Research Insights, the motorsports industry was worth \$7.9 billion in 2024 and is projected to grow to \$18.76 billion by 2033. (Business Research Insights, 2024). Research conducted by EY-Parthenon on behalf of the International Automobile Federation showed that the motorsports industry generated €59.8 billion in direct gross revenue and €99.4 billion in indirect gross revenue. In 2019, the motorsports industry contributed to the creation of 1.5 million jobs (EY Parthenon, 2021).

Sustainable development in the motorsports industry – manifestations, problems, and controversies

The two largest sports federations overseeing events in the motorsports industry have shown a clear interest in the concept of sustainable development. An example of this is the disclosure of non-financial information on the environment, society, and corporate governance by FIM and FIA. In its non-financial report the FIM (2023) announces the establishment of an International Commission for Sustainable Development as an internal body of the FIM, the creation of a sustainable development (SD) strategy for 2021-25 and an environmental code (FIM, 2021). During events held under the auspices of the FIM, specially trained employees, known as Environmental Stewards, monitor compliance with the provisions of this code. The website of the foundation created by the FIM (<https://www.fim-foundation.com>) informs us that it is implementing the KiSS (Keeping it 'Shiny and Sustainable') and Ride Green Cup initiatives. KiSS is a program aimed at supporting motorcycle event organizers (race tracks, championships, etc.) in integrating environmental, educational, and social activities. The Ride Green Cup, on the other hand, is an annual competition aimed mainly at young riders and teams in motocross championships (e.g., the FIM Junior Motocross World Championship). Its goal is to raise environmental awareness.

In its sustainability report, the FIA (2023) lists its sustainability activities, such as:

- an 8.3% reduction in its carbon footprint per employee compared to 2019,
- the introduction of the ISO 14001:2015 standard,
- the award of EDGE (Economic Dividends for Gender Equality) certification,
- creating an academy for young drivers in Central Asia and the Caucasus,
- creating the "Arrive & Drive" program, which allows FIA members to participate in low-cost karting competitions,
- introducing guidelines for the participation of people with disabilities in karting races.

Formula 1, as the most prestigious and technologically advanced racing series in the world, announced an ambitious plan in 2019 to achieve carbon neutrality by 2030. This strategy includes several key pillars. The first is the introduction of fully sustainable synthetic fuel (known as e-fuels), which is produced by combining carbon dioxide captured from the atmosphere with hydrogen produced using renewable energy. The second pillar is the development of hybrid powertrains, which have been used in F1 cars since 2014. The third pillar is logistics – Formula 1 announces the optimization of equipment and personnel transport through the use of sustainable means of transport and modern regional centers, reducing the number of long-distance trips.

Despite noticeable progress in implementing the idea of sustainable development, the industry continues to face many problems and challenges. The FIM and FIA documentation, information can be found on the difficulties in achieving the goals defined in the SD strategy. In the case of the FIA, despite an 8.3% reduction in its carbon footprint per employee compared to 2019, the overall level of CO₂ equivalent emissions in tons was higher in 2023 by 2,209.94 t compared to 2019, which was taken as the base year (FIA, 2023). The FIM reports that despite the appointment of an Environmental Steward, environmental procedures are not being implemented in some off-road racing series (FIM, 2023).

Another problem in implementing the ZR concept is accusations of greenwashing. This involves primarily disclosing solutions that have a positive impact on the natural environment while downplaying and concealing problematic issues related to, among other things, transportation (Sturm, Andrews, Miller, Bustad, 2024).

Researchers point to the suboptimal scheduling of the racing calendar (Ross, 2020). Planning races in distant locations forces teams and equipment to travel around the world, which is costly and time-consuming.

Since the beginning of motorsports, women have been marginalized. Hans Næss and Anne Tjønndal note that women were discriminated against despite their participation in Formula 1 series in the 1950s and their good results in the Monte Carlo Rally in the 1960s, 1970s, and 1980s. (Næss, Tjønndal, 2021). In order to increase women's involvement in motorsports, the FIA Women in Motorsport Commission was established in 2009. In addition, initiatives such as Girls on Track (in the Formula E racing series) and a separate racing series for women, the W Series, have been created. However, there is still much to be done in terms of gender equality.

Controversy surrounds the organization of events under the patronage of the FIA or FIM in countries that openly violate human rights (Amnesty International, 2024). For the FIA, this includes the Saudi Arabian Grand Prix as part of the F1 Championship, and for the FIM, the Qatar Grand Prix as part of the MotoGP Championship. Both racing series are considered the most prestigious track racing series, and their organization in countries that violate

human rights provokes accusations of sportswashing, understood as “the practice of using connections to sport, usually by organizing an event or owning a club [...], to improve a tarnished moral reputation caused by being a perpetrator of injustice” (Bergkvist, Skeiseid, 2024).

Doubts accompany the choice of sponsors for racing series. In the FIA-sponsored F1 Championships, the global sponsor is the Saudi Arabian Oil Group, commonly known as Aramco. The corporation has been accused of greenwashing (Euronews Green, 2024). In the case of the FIM, one of the sponsors of the MotoGP Championship is Petroliaam Nasional Berhad, better known as Petronas. This company is accused of co-financing war crimes in Sudan (European Coalition on Oil in Sudan, 2010).

In the area of management, one of the controversies associated with the implementation of the ZR concept is the lack of transparency in the decision-making process. An example of this is the secrecy surrounding the Concorde Agreement, which regulates the distribution of advertising revenue and prize money for championship winners.

Materials and Methods

A survey was adopted as the research method. The survey was conducted from January to February 2025 among F1 racing fans using an online questionnaire. The form itself, embedded in the Microsoft Forms platform, was sent to members of a Facebook group of Polish F1 fans. The questionnaire contained both closed and open questions, grouped in pairs. There were 10 questions in total. The synthesis of the qualitative material obtained through the open-ended questions was carried out using content analysis and semantic clustering. This approach made it possible to identify a limited number of thematic clusters. The number of respondents answering the open-ended questions varied depending on the question.

Description of the research sample

A total of 296 respondents took part in the survey, of whom 68% were men and 32% were women. When divided into age groups, the characteristics of the research sample are as follows: 9% of respondents were under 18 years of age; 53% of respondents were between 18 and 25 years old; 32% of respondents were between 26 and 35 years old; 5% of respondents were between 36 and 45 years old; and 1% were between 46 and 55 years old. There were no respondents over 56 years of age in the research group.

9% of respondents have primary education; 1% of respondents have vocational education; 41% of respondents have secondary education; 27% of respondents have first-cycle higher education (engineer or bachelor's degree); 21% of respondents have a second-cycle higher education degree (master's degree); 1% of respondents have an education that cannot be assigned to any of the above categories.

Results

The first two questions concerned fans' knowledge of the concept of sustainable development. The survey shows that most respondents (63%) had encountered the term “sustainable development.” In the next open-ended question, these respondents were asked to define the concept themselves. A total of 184 definitions of SD were received. Content analysis and semantic clustering were used to analyze them. This resulted in eight main clusters (semantic groups) of SD concepts (Table 1).

Table 1: Respondents' definitions of the term “sustainable development” (N=184)

Cluster	Description and characteristics	Estimated share (%)
Classic approach of the Brundtland Commission – the needs of present and future generations	Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.	27
Environmental approach	Emphasis on environmental protection, reduction of pollution, CO ₂ emissions, use of renewable energy sources, “being eco-friendly.”	22
Holistic/three-pillar approach (economy–society–environment)	References to the integration of three dimensions: economic, social, and environmental.	15

F1/sports analogies – level playing field in competition	Responses referring to Formula 1: budget limits, technological equality, balancing car performance.	12
Socially inclusive / equal opportunities	Emphasis on the inclusion of all social groups, equal opportunities.	10
Management / business (ESG, CSR, responsible management)	Understanding sustainable development as a company management strategy, caring for both profits and having a positive impact on society and the environment.	8
General / metaphorical / balance	Concepts such as “balance,” “even development,” “centering,” “stability.” Often intuitive, without reference to the environment.	6

Source: own study based on research

An analysis of the semantic groups included in Table 1 shows that the classic approach to SD proposed in the 1987 Brundtland Report entitled “Our Common Future” by the World Commission on Environment and Development dominates. This refers to development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (27%). Slightly less popular was the environmental approach, which emphasized environmental protection, reduction of pollution and CO₂ emissions, use of renewable energy sources, and “being eco-friendly” (22%). A holistic approach to SDG, referring to the integration of economic, social, and environmental dimensions, appeared in 15% of the definitions.

Questions 3 and 4 were used to identify irregularities related to the impact of automotive industry entities on the environment, society, and corporate governance (for the purposes of the study, it was assumed that this is a system that ensures transparent, responsible, and ethical company management).

When asked in question 3 whether they could identify such irregularities (with the options “yes” or “no”), 84% of respondents answered in the affirmative. These respondents were then asked in question 4 to provide specific examples. Forty-one people responded. As with the analysis of the definition of CR, these were subjected to content analysis and semantic grouping. This resulted in eight main clusters of irregularities, which were assigned to categories E, S, and G (Table 2).

Table 2: Irregularities related to the implementation of the ZR concept in the motorsports industry (N=41)

ESG Categories	Area	Description	Estimated share (%)
E – Environmental 20%	Ecology and sustainable development (environmental hypocrisy)	Criticism of “pseudo-ecology” in F1, CO ₂ emissions, logistics, the racing calendar, inefficient hybrid drives, and “show” activities.	20
S – Social 39%	Morality and ethics in sport	Nepotism, pay drivers, immoral behavior (e.g., sex scandals), abuse of position.	12
	Politics and human rights	Organization of races in countries that violate human rights, censorship, restrictions on drivers' freedom of speech.	10
	Ideology, image, and social policy	Issues surrounding BLM, LGBT, celebrity ecology (Vettel, Hamilton), excessive politicization of the sport.	7
	Labor issues and financial inequality	Overworked team members, lack of equal opportunities for drivers from lower social classes, differences in budgets.	6
	Safety and health	Fatal accidents, danger, encouraging risk-taking, lack of safety standards.	4
G – Governance 41%	Fairness in sport, refereeing	Inconsistent decisions by stewards, favouritism towards teams, manipulation of results, scandals such as Abu Dhabi 2021 and Crashgate. This also applies to the interpretation of regulations and controversial decisions by the FIA.	33

	Technical and regulatory disputes	Engine changes (V8, hybrids), DAS system, reverse grid, budget caps, tyre suppliers.	8
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Source: own study based on research

The data in Table 2 show that irregularities classified as “Governance” had the relatively largest share among the three categories identified – 41%. Respondents' statements were assigned to areas referred to as “Fairness in sport and refereeing” and “Technical and regulatory disputes.” Fans pointed to, among other things, inconsistent decisions by stewards, favoritism towards certain teams, manipulation of results, scandals such as Abu Dhabi 2021¹, Crashgate², the DAS system³, and reverse grid⁴.

In the “Social” category (39% of all reported irregularities), the respondents' statements were classified into five main areas: Morality and ethics in sport, Politics and human rights, Ideology, image and social policy, Labor issues and financial inequalities, Safety and health. Among other things, attention was drawn to nepotism and pay drivers. “Pay drivers” are drivers who bring money from sponsors (or their own) to the team in order to get a seat in the cockpit, rather than being hired solely on the basis of their talent. Teams with smaller budgets often need additional funding, which is why they hire such drivers. Examples include Nikita Mazepin (Haas, sponsored by his father's company Uralkali) and Lance Stroll (Aston Martin, whose father Lawrence Stroll owns the team). This practice is often criticized because it can block places for talented drivers who do not have financial support. There have also been references to BLM (Black Lives Matter), a social movement against racism and discrimination against black people. The most famous BLM spokesperson in the world of F1 is Lewis Hamilton, who promotes racial equality and encourages change in the sport. Another topic that was raised was inclusivity and equal treatment of people of different sexual orientations. When organizing races in countries where the rights of LGBT (Lesbian, Gay, Bisexual, and Transgender) people are restricted (e.g., Saudi Arabia, Qatar), this topic provokes much discussion.

In the “Environmental” category (20% of all reported irregularities), fans pointed to the phenomenon of environmental hypocrisy. In the context of official declarations made by federations to gradually reduce CO2 emissions, respondents raised doubts about actions such as race calendar planning and the use of hybrid drives.

The next set of questions concerned the legitimacy of actions taken by entities associated with motorsport in the areas of the natural environment (questions 5 and 6), society (questions 7 and 8), and governance (questions 9 and 10).

In response to question 5 on the legitimacy of environmental measures, 34% of respondents rejected the validity of such measures, citing the industry's negligible impact on global warming or denying the existence of global warming altogether. In contrast, 66% of fans emphasized the legitimacy of such actions. In response to question 6, respondents proposed specific solutions in this area. The statements of 196 people were analyzed in terms of content and semantic grouping. As a result, six main areas of action were identified (Fig. 1).

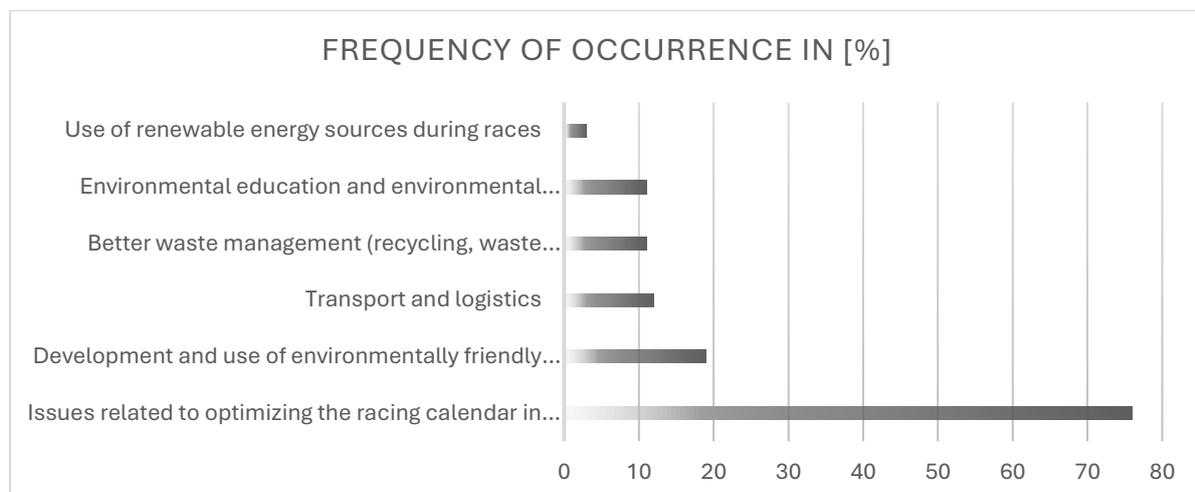


Fig. 1 Environmental measures proposed by respondents (N=196)

Source: own study based on research

The most frequently suggested measures in the area of the natural environment concerned optimizing the racing calendar in order to reduce carbon dioxide emissions – 76% of respondents. The next measures suggested by respondents related to the development and use of environmentally friendly fuels and engines – 19%. Optimization of transport routes and logistics, unrelated to the optimization of the calendar, was indicated by 12% of respondents. Further down the list were improvements in waste management and environmental education activities – 11% each. Only 3% of respondents indicated the need to use renewable energy sources during races.

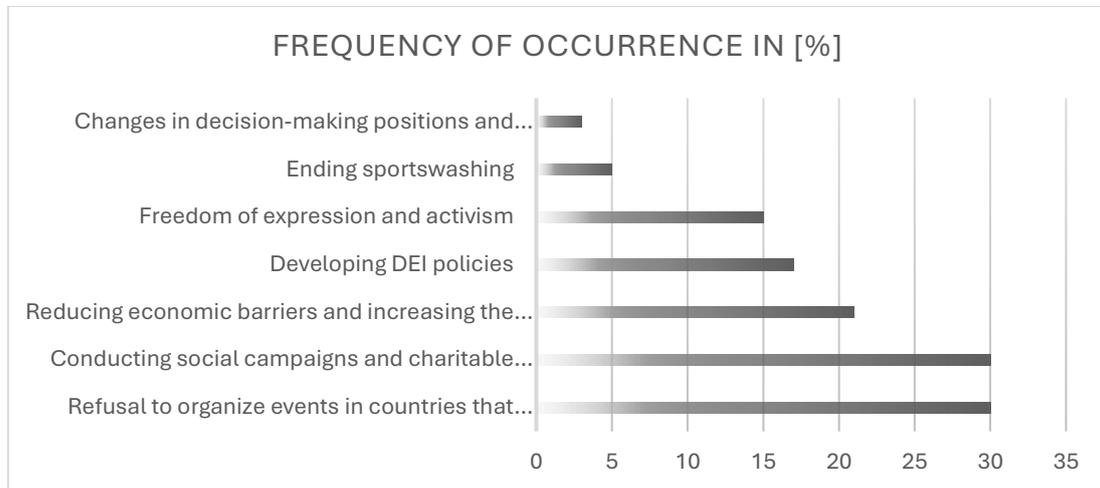


Fig. 2 Social activities proposed by respondents (N=158)

Source: own study based on research

Question 7 concerned the need for F1 to take action in the social sphere. 46% of respondents denied the sense of taking action in this area or expressed a lack of interest in this aspect of ESG. 54% of respondents confirmed this need. In response to question no. 8, respondents (158 people) proposed specific solutions. Their statements were subjected to content analysis and semantic grouping. As a result, seven main areas of action were identified (Fig. 2). The most frequently proposed actions were: refraining from organizing events in countries that violate human rights (30%) and conducting social campaigns and charitable activities (30%). Further down the list were proposals such as reducing economic barriers and increasing the number of races (21%), developing DEI policies (17%), and freedom of expression and social activism (15%). The least popular suggestions were changes in decision-making positions and increasing the accountability of decision-makers (3%).

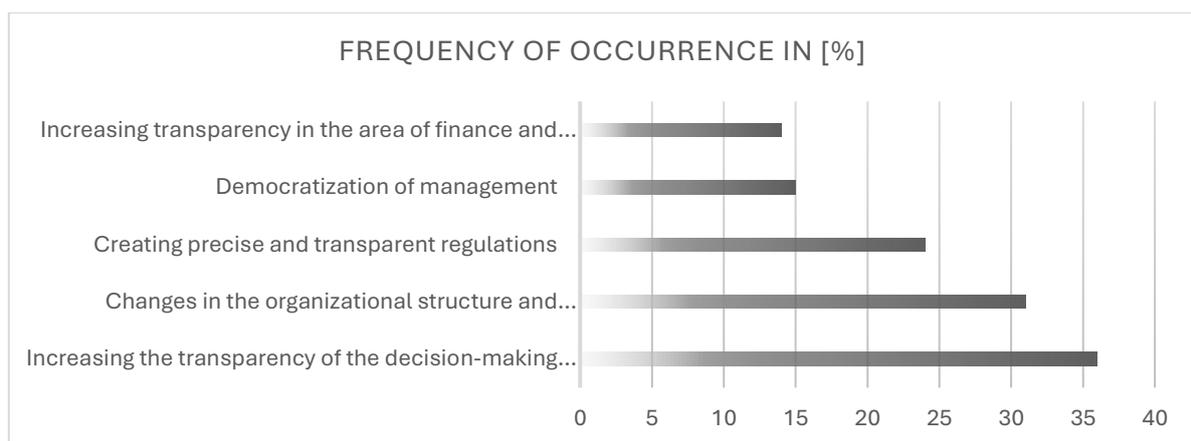


Fig. 3 Governance activities proposed by respondents (N=136)

Source: own study based on research

An analysis of respondents' answers to question 9 on the need for action in the area of governance showed that 54% of respondents denied the sense of such actions or expressed a lack of interest in this aspect of ESG. 44% of respondents emphasized the need to take action and proposed specific solutions in this area (question 10).

Qualitative content analysis with elements of semantic grouping was applied to 136 statements. On this basis, five main clusters (areas of governance activities) were identified (Fig. 3). The most frequently proposed action by respondents in the area of corporate governance was to increase the transparency of decisions (36%). This was followed by changes in the organizational structure and management positions (31%) and the creation of precise and transparent rules for managing the organization (24%). The least number of responses concerned increasing transparency in finance and combating corruption (14%).

Conclusions

The research provided answers to the questions posed in the introduction and enabled the main objective of the article to be achieved. Based on the analysis of the empirical material collected, the following conclusions were drawn:

Firstly (P1), more than half of the respondents declared that they were familiar with the concept of sustainable development. It was most often defined in accordance with the classic approach proposed in the Brundtland Report.

Secondly (P2), the study confirmed reports in the literature about irregularities in the implementation of the ESG concept in the motorsports industry [Sturm, D., Andrews, D. L., Miller, T., & Bustad, J., 2024]. Over 80% of respondents had little knowledge of these irregularities. Relatively speaking, the most frequently indicated irregularities concerned governance, and more specifically the area of “fairness in sport and refereeing.” One in five of the irregularities identified were environmental in nature and related to “greenwashing/sportwashing.” In third place were irregularities in the area of “Morality and ethics in sport” (the “Social” category).

Thirdly (P3), in the context of the sustainable development of the motorsport industry, it may be worrying that more than half of the respondents deny the sense of the industry's involvement in Governance. As for “Social” and “Environmental”, the shares of opposing votes were 46% and 34%, respectively.

Fourthly (P4), it is clear that environmental activities are the least controversial for F1 fans. Among the proposed pro-environmental measures, the most frequently mentioned was the optimization of the racing calendar in terms of CO2 emissions. Undoubtedly, the introduction of a calendar in which races are arranged according to geographical location – for example, grouping rounds in Asia, the Americas, or the Middle East – will reduce costs, facilitate logistics, and reduce the industry's negative impact on the environment. The proposals submitted in the “Social” category revealed the high importance respondents attach to respect for human rights, social campaigns, and charitable activities. Respondents recognized the need to increase the transparency of the decision-making process and to make changes in the organizational structure and management positions (Governance category).

Limitations of the study

The main limitations of the study include:

- lack of representativeness of the sample – the study covered only members of one Facebook group, bringing together Polish F1 fans, which does not allow for generalizing the results to the entire population of F1 fans (neither in Poland, nor globally).
- geographical and cultural limitations – the study only concerned Polish fans, and attitudes towards ESG may vary significantly between countries with different environmental traditions and levels of automotive industry development.
- Time frame – the survey was conducted over a short period of time (January–February 2025), which does not allow for capturing changes in opinion over time, e.g., in response to current events in the world of F1 (regulatory changes, ESG promotion activities by teams, etc.).

It is worth considering conducting comparative studies among F1 fans from different countries to identify cultural differences in attitudes towards ESG, or additionally to identify the opinions of representatives of teams, sponsors, organizers, and F1 authorities in the context of implementing sustainable development principles.

Footnotes

¹ The Abu Dhabi 2021 scandal refers to the controversial end of the 2021 season at the Abu Dhabi Grand Prix, which decided the world championship between Lewis Hamilton and Max Verstappen.

² Crashgate - the 2008 Singapore Grand Prix scandal in which Renault deliberately caused an accident to help its driver Fernando Alonso win the race.

³ Dual Axis Steering (DAS) - an innovative system developed by Mercedes in the 2020 season, allowing the driver to change the toe angle of the front wheels by pulling or pushing the steering wheel; the FIA ruled that the system was legal in 2020, but it has been banned from the 2021 season onwards.

⁴ Reverse grid - means a reversed starting order in a race; the fastest drivers from qualifying start at the back and the slower ones at the front; the aim is to provide a more exciting spectacle with more overtaking.

References

- Amnesty International. (2024). The State of the World's Human Rights: April 2024. [Online]. [September 2, 2024]. Available: <https://www.amnesty.org/en/documents/pol10/7200/2024/en/>.
- Aversa, P., Schreiter, K. and Guerrini, F. (2023), 'The birth of a business icon through cultural branding: Ferrari and the Prancing Horse, 1923–1947,' *Enterprise & Society*, 24(1), 28-58.
- Bergkvist, L. and Skeiseid, H. (2024), 'Sportswashing: exploiting sports to clean the dirty laundry,' *International Journal of Advertising*, 43(6), 1091–1109.
- Business Research Insights (2025), Motorsport Market Overview. [Online] [June 1, 2025]. Available: <https://www.businessresearchinsights.com/market-reports/motorsports-market-108693>
- Cofaigh, É. Ó. (2022), *A Vehicle for Change: Popular Representations of the Automobile in 20th-Century France*. Liverpool University Press, Liverpool.
- Euronews Green. (2024), Sportswashing: Saudi Aramco accused of 'misleading' F1 fans with advanced fuel adverts. [Online]. [September 2, 2024]. Available: <https://www.euronews.com/green/2024/02/21/climate-campaigners-want-regulators-to-show-f1-and-aramco-the-red-light-after-misleading-f>.
- European Coalition on Oil in Sudan. (2010), Unpaid debt - The Legacy of Lundin, Petronas and OMV in Block 5A, Sudan 1997–2003. [Online]. [September 2, 2024]. Available: https://www.ecosonline.org/reports/2010/UNPAID_DEBT_fullreportweb.pdf.
- EY Parthenon, (2021). A report on the Global Contribution of Motor Sport to Economy and Community Development. [Online]. FIA. [September 1, 2024]. Available: <https://www.fia.com/multimedia/publication/report-global-contribution-motor-sport-economy-and-community-development>.
- FIA. (2023). FIA Sustainability and D&I Report 2023. [Online]. [September 2, 2024]. Available: <https://www.fia.com/sustainability-report>.
- FIM. (2021). Sustainability Strategy 2021-2025 The Future in Pole Position. [Online]. [September 2, 2024]. Available: <https://sustainability.fim-moto.com/1-1>.
- FIM. (2023). Sustainability Report 2023. [Online]. [September 2, 2024]. Available: https://www.fim-moto.com/fileadmin/user_upload/Campagnes/Ride-Green/SustainabilityWeek/2024/FIM_2023_sustainability_report.pdf.
- Jenkins, M. (2010) 'Technological discontinuities and competitive advantage: A historical perspective on Formula 1 motor racing 1950–2006,' *Journal of Management Studies*, 47(5), 884-910.
- Lipoński, W. (1987), *Humanistyczna Encyklopedia Sportu*, Wydawnictwo Sport i Turystyka, Warszawa.
- Næss, H. and Tjønnedal, A. (2021), *Innovation, Sustainability and Management in Motorsports: The Case of Formula E*, Palgrave Macmillan, Switzerland.
- Ross, H. (2020), 'Future sustainable practice for formula 1 logistics,' Doctoral dissertation, University of Strathclyde Glasgow, Scotland.
- Sturm, D., Andrews, D. L., Miller, T. and Bustad, J. (2024), 'Green light or black flag? Greenwashing environmental sustainability in Formula One and Formula E,' *Annals of Leisure Research*, 28(1), 116–135.

