Management of Fan Engagement in Motor Sports: A Case Study of Fan Engagement and Legitimacy of Players in The Bahrain Grand Prix

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Abstract

The objective of this research inquiry is to analyse the intricacies involved in the administration of fan engagement within the realm of motor sports, specifically focusing on the Bahrain Grand Prix. The study examines the independent variables of entertainment, integration, and social interaction, while the dependent variable focuses on the perception of legitimacy among players. This study additionally examines the mediating influence of fan engagement and the moderating effect of sports motivation. The chosen research methodology is quantitative in nature, and the survey strategy has been employed as the means of gathering data. The data was subjected to analysis using Smart-PLS and SPSS software. The findings of the study have demonstrated a noteworthy influence of entertainment on the level of fan engagement and the perception of legitimacy regarding sports players. The perception of sports players' legitimacy is significantly influenced by the level of fan engagement. Furthermore, the integration of various elements and the interaction between sports and fans have a substantial influence on the level of engagement exhibited by fans, as well as the perception of legitimacy surrounding sports players. Nevertheless, the moderation of sports motivation holds little significance, whereas the mediation of fan engagement carries substantial importance.

Keywords: Entertainment, Integration and Social Interaction, Legitimacy Perception, Fan Engagement, Sports Motivation.

1. Introduction

Motorsports have gained worldwide recognition due to their substantial fan base and exhilarating high-speed nature (Noble, 2023). These events have gained significant global viewership and have become widely observed as one-day occurrences (Bruneau, 2020). The active participation of audiences, who play a crucial role in generating the enthusiasm surrounding the races, is intrinsically connected to the overall success of motorsports events. Understanding the complex dynamics of fan engagement is of utmost importance, not only for the individuals involved but also for gaining valuable insights into the broader domains of sports management and event coordination.

This study intends to investigate the intricate correlation between fan engagement and players' perceived legitimacy by focusing on the Bahrain Grand Prix, a prominent event within the Formula One season. A significant milestone in the motorsport history of the Gulf Cooperation Council (GCC) was achieved in 2004, with Bahrain's inaugural hosting of the Formula One Grand Prix marking a pivotal moment (Amara & Bouandel, 2023). Entertainment, integration, and social interaction are a few important factors that affect how fans perceive motor sports (Hallmann, Zehrer, & Rietz, 2021; Jones & Byon, 2020; Luguetti, Goodyear, & André, 2019). This study aims to offer valuable insights into the intersection of entertainment, social interaction, and fan perceptions of player trustworthiness within high-profile motor sports events. It seeks to achieve this by analysing these components and deconstructing the intricate dynamics that fuel fan engagement.

The influence of fan involvement extends beyond the immediate effects of Entertainment, Integration, and Social Interaction. This relationship is further influenced by an important factor known as Sports Motivation. The role of this moderator is to facilitate the transmission of Entertainment, Integration, and Social Interaction, thereby influencing the levels of fan engagement. According to Khan, Nizami, and Parmar (2022), individuals' inclination to engage in sports is subject to the influence of diverse factors, encompassing personal preference, social context, and familial circumstances.

Fan engagement, acting as an intermediary, encompasses the emotional connection, loyalty, and active involvement of fans. The depiction illustrates the intricate association among the independent variables, the moderator variable of Sports Motivation, and the perceived legitimacy of players. The level of fan engagement plays a significant role in shaping the public's perception of the credibility of athletes within the realm of motor sports. This study examines the impact of

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Sports Motivation on Fan Engagement by investigating the varying levels of Entertainment, Integration, and Social Interaction. Consequently, this interaction influences the perception of the players' legitimacy. This study aims to provide a comprehensive understanding of the fundamental mechanisms that govern fan engagement strategies in the realm of motor sports, with a specific focus on the distinctive context of the Bahrain Grand Prix.

The primary objective of this study is to investigate the dynamics of fan engagement within the context of motor sports, with a specific emphasis on the Bahrain Grand Prix. This study aims to investigate the impact of Entertainment, Integration, and Social Interaction on fan engagement, which subsequently influences the perception of a player's legitimacy. Additionally, this research examines the moderating role of Sports Motivation in these relationships. This analysis aims to provide insights into the effective management of fan engagement strategies in motor sports, with a specific focus on understanding fan-player interactions within the context of the Bahrain Grand Prix.

This study enhances our comprehension of fan behaviour in motor sports through an examination of these characteristics while also providing valuable insights for sports marketers, event organisers, and policymakers. The aforementioned insights possess significant value, as they have the potential to enhance both the fan experience and the public's perception of the players' credibility. This study provides assurance that motor sports continue to uphold their vitality and allure in the contemporary realm of athletics.

2. Literature Review

2.1. Theoretical Framework

The Social Identity Theory (SIT) is a significant theoretical framework that aids in understanding how individuals construct their self-concept and develop a sense of belonging within various communities and social groups (Laffan, 2021; Morris & Webb, 2022; Scheepers & Ellemers, 2019). Social Identity Theory (SIT) states that individuals categorise themselves and others into social groups based on shared characteristics such as ethnicity, nationality, team affiliations, or fandom (Lianopoulos et al., 2021; Morris & Webb, 2022; Seaton et al., 2022). Social group memberships contribute to individuals' sense of identity, as evidenced by Social Identity Theory (SIT). This theory explains the occurrence of favouritism towards in-group members and bias against out-group members (Laffan, 2021; Tekeş, Erkuş, & Lajunen, 2019).

Fans create strong communities based on their support for specific teams. Identification with a group fosters a sense of belonging, connection, and loyalty, which in turn influences

fan engagement (Hirshon, 2020). Social identity theory (SIT) also explains individuals' efforts to enhance their self-esteem by emphasising the positive distinctions between their own social group and other groups (Demirden, 2021). Since fans perceive these associations as a reflection of their self-worth and social identity, this leads to increased enthusiasm and active engagement with their chosen entities (Mansfield, Delia, & Katz, 2020). Based on the theoretical background mentioned earlier, we will now discuss several direct and moderating hypotheses in the following sections. Figure 2.1 depicts the conceptual framework.
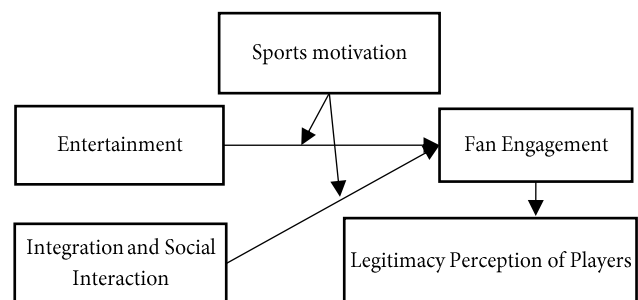
2.1. Conceptual Framework

2.1.1. Entertainment and Fan Engagement

Entertainment plays a crucial role in enhancing fan engagement (Annamalai et al., 2021; Yun, Rosenberger, & Sweeney, 2021). Individuals derive a significant aspect of their identity from the social networks they belong to, including sports organisations, fan communities, and pop culture fan clubs (Harasta, 2021; Lou, Jiao, & Koh, 2021). The role of entertainment is of utmost importance in augmenting fan engagement (Annamalai et al., 2021; Yun et al., 2021). Individuals derive a substantial component of their personal identity from the social networks to which they are affiliated, encompassing sports organisations, fan communities, and popular culture fan clubs. This phenomenon fosters a robust affective connection, motivating individuals to actively engage in, endorse, and advocate for their preferred form of entertainment (Hill, Canniford, & Eckhardt, 2022; Sandi & Triastuti, 2020). Consequently, entertainment serves as a potent tool for unifying diverse individuals under a shared interest and enhancing fan involvement (Annamalai et al., 2021). Hence, in the context of the above discussion, the following hypothesis is proposed:

H1: Entertainment has a positive impact on fan engagement.

2.1.2. Integration and Social Interaction and Fan Engagement

The promotion of integration and socialisation plays a crucial role in enhancing fan engagement across various

domains, including sports and entertainment (Annamalai et al., 2021; Santos et al., 2019). As fans integrate themselves within the organisational framework or fan community, their sense of identity and commitment intensify (Azzman & Manaf, 2019; Kumar, 2023). The phenomenon of social interaction fosters a dynamic and stimulating milieu wherein enthusiasts have the opportunity to engage with each other, exchange personal anecdotes, and collectively express support for their beloved sports teams, artists, and brands (Su et al., 2022; van der Hoeven et al., 2022). Fans have the ability to engage in discussions, debates, and communal celebrations through various online platforms, digital forums, and live gatherings. The engagement in question not only enhances the overall fan experience but also cultivates a committed and enthusiastic community of supporters who are more likely to sustain their involvement and loyalty in the long run (Johansson, 2021; Su et al., 2020). Hence, in the context of the above discussion, the following hypothesis is proposed:

H2: *Integration and social interaction have a positive impact on fan engagement.*

2.1.3. Fan Engagement and Legitimacy Perception of Players

Fan engagement plays a crucial role in influencing the public's perception of the legitimacy of participants (Robertson et al., 2023). According to the cognitive paradigm, individuals form their sense of identity through social affiliations, including sports groups. This applies to athletes as well (Gu & Xue, 2022; Uhrich, 2021). Fans reinforce the players' position within their in-group by interacting with them through various channels, such as attending games or following their activities on social networks (Edgar & Edgar, 2021). This validation enhances the player's reputation within the broader sports community (Norman, 2022). Players who enjoy high levels of popularity and fan engagement are perceived as more genuine and credible, thereby increasing their status in the eyes of both supporters and the general public (McDonald et al., 2022; Yun et al., 2021). Therefore, in the context of the above discussion, the following hypothesis is proposed:

H3: *Fan engagement has a positive impact on legitimacy perception of players.*

2.1.4. Moderation of Sports Motivation

Participation in athletic groups plays a significant role in shaping individuals' self-identity (Vella et al., 2021). The level of enjoyment that supporters derive from competitions plays a crucial role in their engagement, whether it is driven by subconscious or extrinsic motivations (Huettermann, Uhrich, & Koenigstorfer,

2022; Paek et al., 2021). Highly motivated fans demonstrate a willingness to invest their time, emotions, and resources in supporting their team, thereby enhancing the influence of entertainment on fan engagement. Low motivation diminishes the impact of amusement on fan engagement (Cho, Khoo, & Lee, 2019). When an individual is motivated to support their team, it leads to increased integration and social interaction (Vanduhe, Nat, & Hasan, 2020). Highly motivated supporters are more inclined to actively engage in community activities and interact with other individuals who share their enthusiasm (Annamalai et al., 2021). This heightened social interaction strengthens their engagement in athletics and associated activities. Individuals with lower motivation exhibit reduced levels of cooperation and proactive communication with other fans, resulting in decreased fan engagement (Chan-Olmsted & Xiao, 2019). This study addresses a significant gap in the existing literature. Previous research has explored fan engagement in various sports, but there is a noticeable lack of comprehensive investigation specifically focused on motorsports. This study seeks to examine the unique challenges and opportunities related to sustaining fan engagement in the fast-paced and exhilarating world of auto racing. Moreover, this research study examines managerial and marketing strategies in the motorsports sector, focusing on tactics, technologies, and best practises. Additionally, this study considers the evolving dynamics of fan interaction in the digital era, offering a comprehensive understanding of how motorsports organisations effectively engage with their fan base. This research contributes to the development of a more advanced and tailored approach to fan engagement, filling a significant void in current academic discussions. Hence, in the context of the above discussion, the following hypotheses are proposed:

H4: *Sports motivation moderates the relationship between entertainment and fan engagement.*

H5: *Sports motivation moderates the relationship between integration and social interaction and fan engagement.*

3. Methods

3.1. Research Design

This study is intended to evaluate the management of fan engagement in the context of motor sports. The researcher evaluated how players perceive legitimacy by examining the influence of entertainment, integration, and social interaction. The quantitative research design has been implemented based on the positivist research philosophy (Bloomfield & Fisher, 2019). The positivist philosophy holds

that knowledge can be acquired through empirical measurements and objective observations. The deductive research approach has been implemented in accordance with the positivist research philosophy. This research methodology involves the formulation of a theory, generalisation, or hypothesis by the researcher, which is subsequently tested through the collection of data or observations (Asenahabi, 2019). The researcher has chosen to use quantitative research methodology to assess the cause-and-effect relationship among variables. Additionally, the researcher sought to obtain quantitative results in the form of numerical figures and values, thereby altering the study's methodology to be quantitative in nature. The assessment of fan engagement mediation and sports motivation moderation has been considered within the framework.

3.2. Data Collection and Analysis

The researcher employed a survey strategy to gather data from the participants, considering the nature of the study. The questionnaires were divided into three sections: an introduction, demographics, and a section containing questions pertaining to the variable's item. The researcher distributed 300 questionnaires to the participants. The researcher screened and eliminated the inappropriately filled questionnaires from the distributed questionnaires. The number of questionnaires finalised for data analysis was 250. The researcher utilised SPSS and Smart PLS to employ various data analysis techniques. Smart PLS has received huge appreciation in social science research due to its robust predictive nature (Ahmed et al., 2022). The researcher evaluated the construct's validity by examining both discriminant and convergent validity. The researcher assessed model fitness and then conducted a structural equation modelling test to evaluate the hypothesised relationship between variables.

3.4. Measurement of Variables

All variables were assessed using a five-point Likert scale. Table 1 presents the variables, number of items, and sources.

Table 3.1

Measurement of Variables.

Variable	Number of Items	Sources
Entertainment	4	(Vale & Fernandes, 2018)
Integration and social interaction	4	(Vale & Fernandes, 2018)
Sports motivation	18	(Pelletier et al., 2013)
Fan engagement	12	(Vale & Fernandes, 2018)
Legitimacy perception of players	5	(Alexiou & Wiggins, 2018)

4. Analysis

4.1. Reliability Analysis

Convergent validity is crucial in research as it assesses the extent to which a test accurately measures the intended variable (Carlson & Herdman, 2012). The term "convergent validity" describes how closely an analysis matches other tests that measure the same variable in terms of accuracy. Convergent validity is assessed using two indicators: composite reliability and average variance extracted (Ab Hamid, Sami, & Sidek, 2017). Composite reliability assesses the internal consistency of the factors within a measurement scale for a specific construct, similar to Cronbach's alpha (Hajjar, 2018). The average variance extracted is used to evaluate the mean value of the squared loadings of indicators associated with a specific variable. The minimum acceptable value for Cronbach's alpha and composite reliability is 0.7. The AVE cut-off value is 0.5 (Shrestha, 2021). Table 4.1 presents the reliability results, which indicate the presence of reliability within the current dataset.

Table 4.1

Reliability Analysis.

	Cronbach's Alpha	Composite Reliability (Rho_A)	Composite Reliability (Rho_C)	Average Variance Extracted (AVE)
ENT	0.92	0.923	0.944	0.807
FEN	0.942	0.946	0.95	0.614
ISI	0.901	0.926	0.929	0.767
LP	0.989	0.989	0.991	0.957
SM	0.998	0.998	0.998	0.961

"ENT= Entertainment, FEN= Fan engagement, ISI= Integration and sports interaction, LP= Legitimacy perception of sports players, SM= Sports motivation."

4.2. Validity Analysis

The researcher utilised the Fornell-Larcker criterion (1981) to assess the validity of the dataset. Based on this criterion, discriminant validity is established when the latent variable contributes a greater amount of variance to its indicators compared to the variance shared with other variables in the same study model (Shiu et al., 2011).

Table 4.2

Validity Analysis.

	ENT	FEN	ISI	LP	SM
ENT	0.899				
FEN	0.56	0.783			
ISI	0.513	0.533	0.876		
LP	0.469	0.612	0.448	0.978	
SM	0.511	0.459	0.391	0.451	0.98

"ENT= Entertainment, FEN= Fan engagement, ISI= Integration and sports interaction, LP= Legitimacy perception of sports players, SM= Sports motivation."

4.3. Factor Loadings

The researcher used a rotated component matrix to analyse the factor loadings of the items in the measurement scales. Items with a value exceeding 0.4 are considered statistically significant. Table 4.3 presents the number of items used to measure each construct: ENT (4 items), FEN (12 items), ISI (4 items), LP (5 items), and SM (18 items).

Table 4.3

Factor loadings.

	ENT	FEN	ISI	LP	SM
ENT1	0.931				
ENT2	0.865				
ENT3	0.889				
ENT4	0.908				
FEN1		0.773			
FEN10		0.724			
FEN11		0.748			
FEN12		0.725			
FEN2		0.817			
FEN3		0.842			
FEN4		0.82			
FEN5		0.848			
FEN6		0.805			
FEN7		0.75			
FEN8		0.728			
FEN9		0.805			
ISI1			0.899		
ISI2			0.846		
ISI3			0.871		
ISI4			0.887		
LP1				0.984	
LP2				0.98	
LP3				0.972	
LP4				0.973	
LP5				0.983	
SM1					0.911
SM10					0.993
SM11					0.979
SM12					0.985
SM13					0.994
SM14					0.986
SM15					0.99
SM16					0.984
SM17					0.981
SM18					0.983
SM2					0.954
SM3					0.991
SM4					0.983
SM5					0.984
SM6					0.982
SM7					0.991
SM8					0.982
SM9					0.989

"ENT= Entertainment, FEN= Fan engagement, ISI= Integration and sports interaction, LP= Legitimacy perception of sports players, SM= Sports motivation."
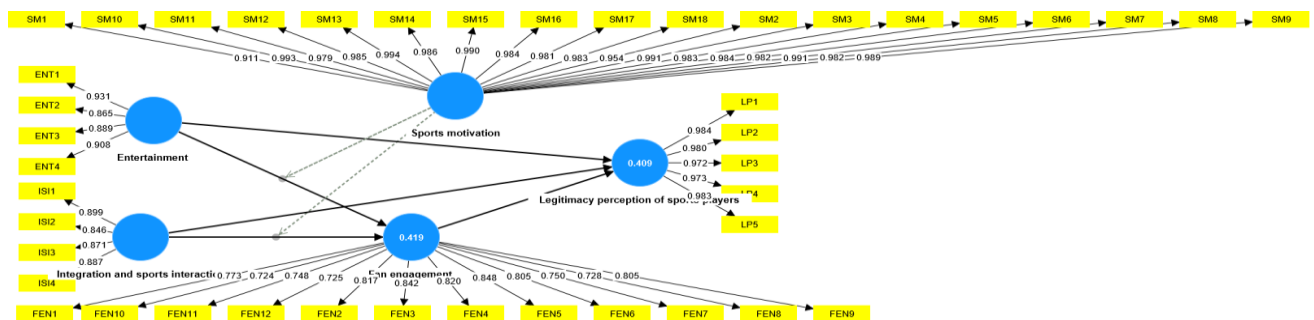

***Figure 4.1.** Measurement Model.*

4.4. Model Fitness

Various indicators were used to assess the fitness of the model, as presented in Table 4.4. The results indicate that the model used in this study is a good fit.

Table 4.4

Model Fitness.

	Saturated Model	Estimated Model
SRMR	0.053	0.063
d_ULS	2.684	3.753
d_G	2.669	2.675
Chi-square	2826.297	2837.463
NFI	0.876	0.876

4.5. Direct Effects

The direct effect analysis revealed that entertainment has a statistically significant and positive influence on both fan engagement (p = 0) and the perception of sports players' legitimacy (p = 0.05). Fan engagement has a significant impact on the perception of legitimacy among sports players (p = 0). The integration of sports and fan interaction has been found to have a significant impact on fan engagement (p = 0) and the perception of legitimacy among sports players (p = 0.08). Furthermore, it is worth noting that sports motivation has a statistically significant and positive effect on fan engagement (p = 0.008). In addition, the influence of sports motivation on the relationship between entertainment and fan engagement (p = 0.85), as well as between integration and social interaction and fan engagement, is found to be statistically insignificant (p=0.96).

Table 4.5

Direct Effects.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ENT -> FEN	0.317	0.318	0.079	4.036	0
ENT -> LP	0.144	0.138	0.076	1.886	0.059
FEN -> LP	0.465	0.47	0.075	6.232	0
ISI -> FEN	0.3	0.302	0.064	4.678	0
ISI -> LP	0.128	0.127	0.073	1.739	0.082
SM -> FEN	0.186	0.185	0.07	2.644	0.008
SM x ISI -> FEN	0.015	0.011	0.08	0.184	0.854
SM x ISI -> FEN	-0.003	0	0.071	0.04	0.968

"ENT= Entertainment, FEN= Fan engagement, ISI= Integration and sports interaction, LP= Legitimacy perception of sports players, SM= Sports motivation."

4.6. Indirect Effects

This study examined the moderating role of fan engagement. The mediation analysis results in Table 4.6 indicate that fan engagement mediates the relationship between integration and legitimacy perception (p=0), as well as between entertainment and legitimacy perception of sports players (p=0.001).

Table 4.6

Indirect Effects.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ISI -> FEN -> LP	0.139	0.142	0.038	3.619	0
EN -> FEN -> LP	0.147	0.149	0.042	3.482	0.001

"ENT= Entertainment, FEN= Fan engagement, ISI= Integration and sports interaction, LP= Legitimacy perception of sports players, SM= Sports motivation."

5. Discussion

This study examines the intersection of entertainment, integration and sports interaction, sports motivation, fan engagement, and fans' perceptions of sports players' legitimacy in the context of the Bahrain Grand Prix. It explores the influence of entertainment on fans' perceptions of sports players' credibility and its impact on fan attitudes. This study examines the intricacies of sports interaction and integration, uncovering various factors that impact fans' perceptions of legitimacy. Further research is required to thoroughly examine the factors that influence fans' motivations and their connection to different aspects of motor sports involvement, in order to better understand the unanticipated discoveries regarding the moderating impact of sports motivation. This study examines how fan engagement influences fans' perceptions of sports players and the overall legitimacy of motor sports events. It highlights the importance of fan engagement in shaping these dynamics.

This study found a significant positive correlation between entertainment and fans' perceptions of sports players' legitimacy in the Bahrain Grand Prix. This finding underscores the crucial role of entertainment in shaping individuals' perceptions of athletes' legitimacy. Motor sports events that are engaging and fascinating have a clear influence on fans' trust in the authenticity of athletes, highlighting the significant impact of entertainment value on fan attitudes (Finn, 2021).

However, the effects of integration and sports interaction on fans' perceptions of legitimacy were not found to be statistically significant. Although initially ambiguous, these findings underscore the intricacies involved in individuals' evaluation of the credibility of sports athletes. This suggests that factors beyond integration and engagement may also play a role in shaping fans' perceptions of players' authenticity. Various factors, including media representation, cultural context, and individual fan backgrounds, can significantly influence fan perceptions, in addition to direct interactions (Cayolla & Loureiro, 2021).

The findings regarding the potential moderating effect of sports motivation were unexpected. The impact of sports motivation and entertainment interactions, as well as sports motivation and integration interactions, on fan involvement was found to be insignificant. The anticipated influence of sports motivation on entertainment and integration interactions was not observed, indicating the intricate nature of fans' motivations. It implies that fan engagement is influenced by various factors, including social, cultural, and environmental aspects, in addition to individual sports motivation (Liu, 2022). These findings challenge prevailing beliefs and indicate that fans' motivations for motor sports events are influenced by a broader array of factors.

The study found a significant relationship between integration and sports interaction, fan engagement, and the legitimacy view of sports players when considering the mediating role of fan engagement. This emphasises the significant influence of fans' immersive experiences and active participation in motor sports events. A notable correlation was found between entertainment, fan engagement, and players' perceptions of legitimacy. This study highlights the significance of entertainment-oriented elements in fostering fan engagement, which subsequently influences their perceptions of sports players' credibility. These findings emphasise the significant role of fan engagement in mediating the intricate relationship between fans' experiences, their perceptions of sports participants, and the overall legitimacy of motor sports events. This study provides insights into the various factors that influence fan perceptions and the perceived legitimacy of players in the context of the Bahrain Grand Prix.

6. Implications

This study significantly influences the management of fan engagement in motor sports. This study highlights the significance of interactive and immersive experiences in relation to fan engagement and player legitimacy perceptions. It specifically emphasises the impact of integration, sports interaction, and entertainment. In order to enhance experiences and cultivate favourable player perceptions, it is imperative for event organisers to prioritise meaningful interactions between fans and players. The study suggests that fan participation is primarily influenced by broader societal and cultural factors rather than individual motivations. Comprehending the diverse effects enables the development of inclusive events that accommodate different fan motivations. Successfully engaging fans requires a skillful balance of interactive experiences and entertainment that appeals to a diverse range of preferences. Ongoing research is crucial for event organisers to adapt plans, meet evolving audience demands, and develop interactive activities in order to achieve sustained success for their events.

7. Conclusion

This study highlights the multifaceted factors that influence fan engagement in motor sports, emphasising the significance of cultural and social influences, as well as individual motivations. The study highlighted the crucial link between fan engagement and player perceptions, suggesting that organisers should create diverse and captivating experiences for audience members. The findings offer valuable recommendations for enhancing fan experiences and fostering stronger fan-player connections at motor sports events. Implementing these suggestions could enable organisations to enhance their engagement strategies. The study's findings suggest that event organisers can enhance engagement by diversifying fan interactions through the integration of virtual reality, social media, and immersive technologies. In addition, implementing tailored interaction strategies that take into account the diversity of fans, including factors like age, gender, and culture, can result in heightened engagement and interest among event participants. In addition, organisers should collaborate with technology companies, social media platforms, and sports organisations to enhance fan engagement by sharing expertise and enhancing the utilisation of modern technologies and social media strategies.

8. Limitations and Future Research Recommendations

This study is limited by its narrow focus on a specific motor sports event, which may restrict the applicability of the data to other sporting contexts. Self-reported data is prone to bias and inaccuracy. Additionally, the study did not examine demographic factors such as age, gender, or cultural background, which could potentially impact fan engagement. To overcome these limitations, future research should consider expanding the scope of the study to encompass a broader selection of motor sports events

and incorporate a wider range of demographic variables to facilitate a more comprehensive analysis. Utilising a range of methodologies, such as qualitative interviews and observations, can yield comprehensive insights into audience engagement. Additionally, there is potential for future research examining the influence of emerging technologies, such as virtual reality experiences and social media interactions, on fan engagement in motor sports. This research has the potential to benefit both researchers and event organisers.

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