Information Asymmetry and Digital Infrastructure in Indian Fencing: Impacts on Stakeholder Engagement and Athlete Visibility

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ABSTRACT

The expansion of fencing in India has increased the requirement for effective digital communication and information dissemination systems. Potential challenges include information asymmetry, fragmented communication channels, and limited athlete visibility. This study considers how information quality and accessibility inside the Indian fencing ecosystem affect stakeholder engagement, institutional trust, and the public visibility of emerging athletes. A quantitative descriptive-correlational methodology was employed, utilizing a structured digital survey administered to 17 stakeholders in the Indian fencing community, including active fencers (59%) and parents (41%). The survey measured information quality, system reliability, communication channel usage, stakeholder engagement, and perceptions of athlete visibility using Likert-scale and categorical-response items. The results show a predominant reliance on informal communication networks, with 88.24% of respondents identifying WhatsApp groups as their most reliable source of information, while only 5.88% primarily used the official Fencing Association of India (FAI) website. Information timeliness received a low mean score of 2.47 out of 5, and 50% of respondents cited academic planning conflicts as a key barrier to tournament participation. Although 94.12% of stakeholders reported daily social media use and expressed strong support for increased federation social media activity (M = 4.88/5), 70.59% rarely or never shared fencing-related content. This trend demonstrates a lack of accessible, high-quality digital assets and athlete-centered media. The analysis shows that information asymmetry and insufficient digital infrastructure give rise to reduced stakeholder engagement, reliance on informal communication systems, and limited athlete visibility. Improving the timeliness, accessibility, and quality of official information and media dissemination may promote greater participation, transparency, and professionalization of fencing in India. Keywords: information asymmetry; sports governance; digital infrastructure; stakeholder engagement; athlete visibility; fencing; India; sports communication.

The global pandemic in 2020 has demonstrated the immense potential of digital media in the communication and information-sharing domains, connecting fans and athletes to their sports in meaningful ways. Moreover, it serves as a layer of engagement that excites fans while professionalizing the respective sport.

Fencing in India is currently experiencing rapid growth and increasing international visibility, driven by achievements such as Bhavani Devi's on the international stage, which have inspired youth fencers. However, major challenges remain in key communication and administrative infrastructure, which lag in supporting the sport and delay athletic progression. Even as the profile of sports is growing in the domestic ecosystem, information asymmetry is prevalent, directly hindering broader stakeholder engagement and the professionalization of fencing in India.

This study identifies a critical failure in the dissemination of essential data and information, including but not limited to competition calendars, real-time results, and national rankings. The preliminary survey has demonstrated an institutional trust gap, as a result of which key stakeholders, such as Parents, athletes, and coaches, bypass official communication channels because of their perceived unreliability. For instance, despite the existence of an official Fencing Association of India (FAI) website, 80% of the surveyed stakeholders identified informal Coach or Club WhatsApp groups as their most reliable source of information. Furthermore, official website usage remains alarmingly low, with a majority of respondents checking it only when prompted by a coach or, in many cases, "never/rarely."

Due to the systematic reliance on these shadow channels, informational silos are created, benefiting elite athletes who have a foot in the door while raising barriers to entry for stakeholders not directly involved with the FAI, specifically potential sponsors and guardians of young fencers. This results in less recognition and direct engagement among non-fencers, making it harder for newcomers to learn about the ecosystem quickly and comprehensively. While elite athletes may benefit from occasional mainstream media coverage, young fencers competing through the District State Organization (DSO), ISSO, or National-level top-16 brackets remain invisible because their performance data are neither searchable nor publicly archived, and, in the rare cases they are, they are often not cataloged in an accessible manner.

This investigation posits that the current quality of information, characterized by high latency and low accessibility, prevents these athletes from building the professional digital identity necessary to attract commercial sponsorship and develop their athletic identity, thereby hindering their future professionalization and the development of their personal brand. There is a stark contrast between the current static information

delivery and stakeholder demand; respondents gave a near-unanimous 5/5 rating regarding the importance of professional-looking tournament media and the need for the FAI to utilize social media platforms such as Instagram and YouTube more aggressively. By examining these friction points, this study aims to determine the extent to which the reliability and mode of information dissemination affect stakeholder engagement and the public's visibility of upcoming athletes.

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The Sports Informational Infrastructure (SII) is a multidimensional sociotechnical system that serves as the structural backbone of athletic governance and scaling of sports.

In the context of sports systems science, SII is defined as the integrated framework of Logistical Intelligence that encompasses competition temporalities, venues, and administrative protocols, and Performance Intelligence, which includes granular athlete metrics, historical rankings, and longitudinal performance data (Smith & Stewart, 2010; PwC India, 2024).

This study claims that, for fencing, a niche sport, to professionalize the industry, the SII serves as a high-fidelity source of Information for all stakeholders.

However, in the Indian ecosystem, this infrastructure is fragmented. Currently, the indigenous Indian fencing landscape is characterized by considerable Institutional Fragmentation, particularly in the disconnect among the School Games Federation of India (SGFI), District Sports Offices (DSO), and the Fencing Association of India (FAI).

This separation stifles the sport's "Net Benefits," as defined by the DeLone and McLean Information Systems Success Model (2003). According to this model, organizational growth is directly dependent on Information Quality (IQ); when timeliness and accuracy are compromised, the "Intention to Use" official systems collapses, creating an institutional vacuum. The "Information Vacuum" in Indian fencing can be classified academically as a simultaneous failure of system quality and information quality (DeLone & McLean, 2003).

When official portals fail to provide timely data, stakeholders do not simply stop seeking information; instead, they develop "Feral Information Systems" (Behrens, 2009). These are informal, shadow IT workarounds, most notably WhatsApp groups that emerge as a functional response to the boundary of chaos in fragmented sports governance (Stacey, 1996; Afolayan & Ogunlade, 2021).

The concept of information silos forms a critical barrier to organizational efficiency, occurring when data are segregated within particular departments or systems, thus impeding interdepartmental cooperation and comprehensive situational awareness (Jeleel-Ojuade, 2024; Metso et al., 2019). Within the management literature, these silos are defined as psychological boundaries that create compartmentalization and differentiation (Waal et al., 2019). In sports ecosystems, these barriers appear as dispersed data repositories, where specific groups often inadvertently restrict access to knowledge. This results in poor information exchange, operational problems, and the perceived isolation of athletes and coaches from the wider organizational structure (Jeleel-Ojuade, 2024; Jeske & Olson, 2024), which is being exemplified in the current fencing ecosystem in India .

While these groups function as Complex Adaptive Systems (CAS) that provide emergent logistical relief through self-organization (Ramos-Villagrasa et al., 2012), they inadvertently consolidate information asymmetry by bypassing formal channels. Because these signals are private and unverified, they fail to contribute to the 'Institutional Memory' required for longitudinal governance (Walsh & Ungson, 1991). This investigation's data supports this, showing an 80% reliance on WhatsApp for reliable information, a reliance that effectively 'hides' upcoming fencers from the general market. As performance statistics (DSO and National Top 16 results) remain siloed, the ecosystem fails to provide the integrated longitudinal data indispensable for effective talent identification and development (Till & Baker, 2020).

From a socio-economic perspective, the professionalization of fencing poses a fundamental challenge to Signaling Theory (Spence, 1973). In a market plagued by information asymmetry, stakeholders (sponsors, media, and parents) require credible "signals" to assess the value of their investments. The absence of centralized rankings and real-time results creates a "Market for Lemons" (Akerlof, 1970).

When a prospective sponsor cannot verify an athlete's rank or see high-quality media content, the "perceived risk" of investment increases. Thus, the current lack of information quality in Indian fencing is not a communication failure; it is an economic barrier that prevents fencers from becoming marketable assets.

According to Signaling Theory, improved information disclosure through online platforms helps reduce information asymmetry by conveying organizational credibility to external stakeholders (Hidayati et al., 2025; Li, 2025). By increasing the "fluidity" of information, digital transformation enhances organizations' market visibility, strengthens external monitoring, and promotes information sharing, thereby improving overall transparency (Fang & Ju, 2024).

Digitalization, through the "internet + sport" pathway, has transformed sports engagement into a socialized, digitized, and personal experience (Zhong et al., 2022). Empirical evidence indicates that organizations' use of the internet to promote sports significantly increases the sports population by 7.1%, with the effects most pronounced among middle-aged groups and those with higher education (Zhong et al., 2022).

The transition of a stakeholder from a neutral observer to an active, "allegiant" fan is mapped through the Psychological Continuum Model (PCM) (Funk & James, 2001, 2025). The model determines four stages: Awareness, Attraction, Attachment, and Allegiance. A high-quality informational infrastructure acts as an "engagement elevator" between these phases.

The transition from 'Attraction' to 'Allegiance' is predicated on the consistent delivery of high-quality information cues, specifically granular statistics, professional highlights, and compelling athlete narratives (Funk & James, 2025). These items function as 'Points of Attachment' (Trail et al., 2003) that foster the deep psychological internalization required for long-term fan loyalty.

A sport's digital presence and the reliability of the information it provides are the primary drivers of Specific Consumer Knowledge, the fan's perception and understanding of an organization's mission. High SCK is positively associated with perceived service quality, which, in turn, drives psychological involvement (Hu et al., 2022).

In Indian fencing, the lack of a centralized database means that there is no historical narrative. If a fan does not know that a fencer has won 10 consecutive regional matches (because the DSO data are missing), the "Narrative" dies. Without the narrative, the fan remains at the "Awareness" stage and never reaches the "Allegiance" required to make the sport attractive to broadcasters such as Star Sports or Viacom18 (Paul et al., 2023).

The rapid development of web platforms in the sporting ecosystem has fundamentally restructured the mechanisms of fan engagement and sponsorship activation, redirecting the focus from passive visibility to interactive value creation (Segovia & Kennett, 2022). By using online environments as laboratories for behavioral and sentiment analyses, sports organizations can quantify sponsorship effectiveness with granular precision. These data-driven protocols facilitate the consolidation of virtual communities, which, in turn, drives commercial efficiency and long-term sales trajectories (Segovia & Kennett, 2022).

Through the digital media uprising, athletic value is now an institutionalized paradigm engagement. As Westerbeek and Schaik (2025) argue, social media engagement metrics have become central to determining an athlete's endorsement potential, often having a weight equivalent to their technical on-field performance. Consequently, in the absence of a formalized SII to provide the "raw material" for this engagement, such as real-time stats and high-quality media, athletes remain commercially invisible regardless of their competitive merit (Westerbeek & Schaik, 2025).

The professionalization of digital presence is apparent in global cases, such as the Polish top league, where club Instagram usage grew from nine to 15 (out of 16) clubs in two years, with top clubs like Legia Warsaw increasing posts from 732 to 995 in a 7-month period to preserve engagement (Siguencia et al.,2017). Fans seek gratification from these channels, utilizing them for informational surveillance of players and statistics (Lewis et al., 2017). Underpinning this participation is content quality, which takes precedence over frequency (Desai,2025).

To counter silos and asymmetry, Competitive Intelligence (CI) is the systematic process of acquiring and distributing information (Abdennaceur, 2023). CI is not simply information gathering; it is the primary driver of participatory management, where stakeholders from all levels collaborate in the decision-making process (Abdennaceur, 2023). The embedding of CI into high-performance pathways directly influences "preparation currency," diminishing environmental uncertainty and fostering systemic innovation (Abdennaceur, 2023). Empirical evidence from the Directorate of Youth and Sports indicates a moderate positive correlation ($r=0.333$) between CI and management efficacy, with CI accounting for about 11.1% of the total variance in management quality ($F=4.733$, $p=0.036$) (Abdennaceur, 2023). When coaches and athletes participate in decisions informed by objective CI data, institutional motivation increases, stimulating a climate in which "efficient new leaders" emerge (Abdennaceur, 2023). Research indicates that CI-informed personalized training guidance is responsible for approximately 32.43% of the total effect of Internet use on general participation rates (Abdennaceur, 2023).

The institutional framework for sports in India has evolved since the establishment of bodies such as the All-India Council of Sports in 1954 (Clarke & Mondal, 2022). The National Sports Policies (1984, 2011) and the National Education Policy 2020 affirm the government's recognition of sports as vital to human capital development (Kumari & Bhalla, 2021).

However, although these advancements exist, significant problems endure. For instance, Indian football, despite initiatives such as the Indian Super League, continues to face institutional barriers and societal resistance to adopting data-driven

approaches (Nanavati & Rangaswamy, 2025). There is observed underemployment of staff with expertise in applied data analytics, and perceptions of analytical proficiency differ substantially across national federations (Lolli et al., 2024). Even in parts like North East India, systemic challenges such as a lack of infrastructure impede sports development (Rahma et al., 2025).

The requirement for high-quality SII is additionally strengthened by the National Sports Governance Act (2025), which designates National Sports Federations (NSFs) as "Public Authorities" under the Right to Information (RTI) framework. This act mandates the creation of digital registries for athletes and coaches, effectively making transparency a legal requirement for eligibility for government funding (Vidhi Legal 2025).

Methodolodgy

This study adopted a quantitative descriptive-correlational research design to examine the structural wholeness of information flow within the Indian fencing ecosystem. The chief aim was to evaluate the relationship between Information Quality (IQ), defined by distinctness and timeliness, and System Usage, specifically the employment of official versus "feral" communication channels. Via quantifying the current "Information Vacuum," this design provides a statistical baseline for assessing the effects of informational latency on stakeholder faith and athlete visibility.

This study focused on the primary stakeholders in the Indian fencing community, using purposive sampling to collect data from those directly engaged in the competitive circuit.

- This study analyzed data from 17 respondents, representing a cross-section of the domestic ecosystem.
- The cohort consisted of Active Fencers/Students (59%) and parents of active fencers(41%).
- A significant portion of the sample (35%) comprises long-term stakeholders with over 3 years of experience, 41% have 1–3 years of experience, and 24% are new entrants with less than a year in the sport.
- Participants represented various key Indian fencing hubs, including Maharashtra (Mumbai), Haryana (Gurugram), Delhi, and Telangana (Hyderabad).

The primary instrument for data collection was the **"Information Systems in Indian Fencing Survey,"** a structured digital questionnaire designed to correspond to the DeLone and McLean (2003) model. The survey was divided into three modules.

- ***Module 1:*** Stakeholder Demographics & Participation: Captured background data, including the state of training and the number of official Fencing Association of India (FAI) recognized tournaments attended in the last 12 months.
- ***Module 2:*** Communication, Outreach & System Reliability: This module utilized 5-point Likert scales to measure the Clarity of official information (rules, dates, venues) and the Timeliness of dissemination. It specifically identified reliable sources of information, contrasting the official FAI website with State Associations, WhatsApp groups, and word-of-mouth.
- ***Module 3:*** Engagement & Psychological Attachment: Based on the Psychological Continuum Model (PCM), this section measured the impact of digital media on interest levels, the importance of professional-looking tournament media, and the FAI organization's demand for increased social media activity (Instagram/ YouTube).

The following variables were measured to test the system friction in the fencing informational infrastructure.

Figure 1 :

Variable Category	Survey Measurement	Theoretical Construct
Information Quality (IQ)	Clarity of rules/dates and timeliness of sharing (1–5 scale).	System Success (DeLone & McLean, 2003).
System Reliability	Choice of "Reliable Source" (Website vs. WhatsApp).	Feral Information Systems (Behrens, 2009).
Psychological Involvement	Interest generated by watching fencing highlights (1–5 scale).	Attraction Stage (PCM Model).
Commercial Potential	Importance of professional photos/videos (1–5 scale).	Signaling Theory (Spence 1973).

Data were collected electronically, with strict adherence to voluntary participation and anonymity. Analysis was conducted using descriptive statistics to identify failures. The reliability of official information channels was assessed by comparing the frequency of use of the official website with the perceived reliability of Coach/Club WhatsApp groups. This study compared high interest scores for digital content (videos/highlights) with the actual frequency of sharing that content, as well as the information received by key stakeholders, such as parents.

Results and Data Analysis

The study utilized a descriptive quantitative approach to evaluate the digital communication infrastructure of the Indian fencing ecosystem (N=17). The analysis focuses on three core dimensions: Institutional Trust Architecture, Temporal Participation Barriers, and Digital Signaling Capacity.

In a professionalized sporting context, the official website should function as the primary signaling node. However, the data reveals a systemic bypass of official ICT infrastructure.

Table 1: *Distribution of Perceived Information Reliability and Channel Engagement*

Dissemination Channel	Primary Reliability Hub (n)	Reliability (%)	Routine Website Check Frequency (%)	Mandatory/ Prompted Usage (%)
Official FAI Website	1	5.88%	35.29%	58.82%
WhatsApp/Social Groups	15	88.24%	0.00%	11.76%
Peer Networks	1	5.88%	N/A	N/A

The data indicate a high degree of Institutional Trust Atrophy. While 88.24% of stakeholders identify informal WhatsApp groups as their primary source of vital infrastructure, the official website is a "passive repository," with 58.82% of users accessing it only at external compulsion. This is in accordance with Behrens' (2009) theory on Feral Information Systems (FIS): when official platforms fail to provide the Information Velocity required by stakeholders, a parallel, informal infrastructure emerges. For the professionalization of Indian fencing, this implies that although a digital presence exists, the mode of delivery does not meet the community's reliability standards, bringing about a fragmented information ecology.

Moreover, participation in competitive sports depends on logistical lead time. This section analyzes how the "Information Timing" variable interacts with the socio-educational realities of the fencers.

Table 2 : *Impact of Information Timeliness on Participation Barriers*

Metric	Mean Score (M)	Standard Deviation (SD)	Primary Participation Barrier	Prevalence (%)
Information Timeliness	2.47	1.12	Academic/School Conflicts	50.00%
Information Clarity	3.41	1.06	Traveling & Logistics	36.36%
User Readiness	3.19	1.05	Equipment & Finance	13.64%

A significant Latency-Attrition Correlation is observed. With a mean timeliness score of only 2.47/5.00, the dissemination of information is perceived as receptive rather than proactive. This late data arrival creates a "Structural Filter": 50% of contributors are unable to participate due to academic scheduling clashes. Drawing on the DeLone and McLean (2003) Information Systems Success Model, "Service Quality" (timeliness) is directly tied to "User Impact." In this ecosystem, dissemination is currently a bottleneck; the lack of lead time prevents student-athletes from managing the rigid "Sport-School Nexus" (Butlig et al., 2023), effectively capping the pool of professional participants.

To achieve public professionalization, a sport must move stakeholders from "Passive Awareness" to "Active Advocacy." The data contrasts stakeholder digital capacity with their actual sharing behavior.

Table 3 : *Stakeholder Digital Capacity vs. Organic Visibility Signaling*

Variable	Metric Value	Visibility Indicator	Impact on Public Image
Daily Social Media Usage	94.12%	High Infrastructure Capacity	Untapped Potential
Fencing Content Sharing	70.59% (Rarely/Never)	Low Signaling Frequency	Invisible Athlete Narrative
Demand for Pro-Media	3.94 (M)	High Asset Requirement	Content Poverty
FAI Social Media Mandate	4.88 (M)	Universal Stakeholder Desire	Strategic Gap

The research shows a signaling paradox (Spence, 1973). While stakeholders demonstrate near-universal daily digital presence (94.12%) and a mandate for FAI social media growth (4.88/5.00), they do not organically share fencing content. This indicates that the mode of current content is insufficient to serve as "Digital Capital." Stakeholders want to signal their involvement but lack high-quality assets to do so. This stalls the athlete's journey at the "Attraction" phase of the Psychological Continuum Model (PCM). Without professional, shareable media, emerging athletes remain invisible to potential sponsors and the extended public, hindering the sport's transition to a professionalized, commercial entity.

Discussion

The findings of this study provide a critical evaluation of digital correspondence infrastructure within the Indian fencing ecosystem. By synthesizing statistical data with well-known theoretical frameworks, this section investigates the significance of the identified "Information Vacuum," the systemic reliance on "Feral Systems," and the resulting barriers to athlete visibility and connection.

The most significant finding of this research is the disconnect between information clarity (M=3.41) and timeliness (M=2.47). While the FAI successfully produces clear regulatory content, the failure to disseminate it with sufficient lead time creates a "Temporal Shock" that is strongly related to participation in the program.

The data show that 50.0% of stakeholders cite academic conflicts as a primary barrier. When seen through the lens of Butlig et al. (2023), who argue that student-athlete success is contingent on environmental predictability, the FAI's late dissemination acts as a structural barrier. It excludes athletes who cannot deal with the rigid requirements of the Indian schooling system on short notice. This is in accordance with the DeLone and McLean (2003) IS Success Model, where "Information Quality" isn't merely about accuracy but "Currency" and "Timeliness." Without these, the system fails to produce the intended "Individual Impact" (participation).

The near-total reliance on WhatsApp/Social Groups (88.2%) over official platforms (5.8%) shows a migration to what Behrens (2009) defines as "Feral Information Systems." These systems emerge when official ICT infrastructure is perceived as rigid, slow, or untrustworthy.

This study confirms that in the absence of a reliable official "Signal," stakeholders have built a parallel community-led infrastructure. While FIS provides the necessary speed, it lacks the institutional authority and "Digital Capital" required for formal growth. The fact that 58.8% of users only visit the official website under "External

Compulsion" suggests that the FAI's primary digital touchpoint has become a tool for administrative compliance rather than a hub for engagement or attention.

The results show a "Signaling Failure" (Spence, 1973). Despite a high appetite for professional media (M=3.94) and a 94.1% daily social media usage rate, actual sharing behavior is stagnant (70.6% Rarely/Never).

This suggests that the "Mode" of dissemination is missing the necessary assets for modern fan engagement. According to the PCM, fans and athletes require Digital Capital (top-quality visual content) to move from the attraction stage to Allegiance and Advocacy. Currently, emerging athletes remain invisible because the federation provides no professional signaling tools for the community to raise their voices.

While the findings grant a vital view of the fencing ecosystem, several limitations ought to be acknowledged.

- With N=17, this study is an exploratory pilot. While the data show clear trends, they lack the statistical power to generalize to the entirety of India's diverse fencing landscape. The geographic concentration in states like Haryana could distort the "Logistical Barrier" data compared to more remote regions.
- The use of self-reported survey data introduces "recency bias," where respondents may rate timeliness based on the most recent tournament rather than a three-year average. Furthermore, the survey did not include qualitative interviews, which are necessary to understand the emotional impact of missing a tournament due to late information, a nuance that Likert scales often flatten.
- The sample primarily consisted of active participants. This creates a "Survivorship Bias"; the study does not capture the data of those who have already dropped out of the sport due to these information failures. Their data are arguably the most critical to comprehend attrition.
- Future studies should adopt a "Dual-Perspective" approach, interviewing both FAI administrators (the senders) and athletes (the receivers) to identify where exactly the "Information Bottleneck" occurs. Additionally, longitudinal studies are needed to determine whether an increase in content velocity directly leads to higher participation rates in specific age categories.

The meaning of these results lies in the revelation that Indian fencing is currently in a state of "Information Survival." Reliance on informal networks (WhatsApp) compensates for official system failures but limits the sport's scalability. To improve stakeholder engagement and athlete visibility, the FAI must transition from a "Compliance-Based" dissemination model to an "Engagement-Based" dissemination model. This requires prioritizing temporal reliability and allocating resources to high-

quality Shareable Capital to bridge the gap between the athlete's effort and public recognition.

To address the core research objective of improving stakeholder engagement and athlete visibility, the following recommendations are made: Whereas foundational digital systems currently exist, they require considerable structural refinement, more frequent updates, and higher-quality data integration.

Recomendation

The study shows that the Fencing Association of India (FAI) already possesses a digital infrastructure (Website and Social Media); however, these platforms currently lack the accessibility and timeliness required for effectiveness.

The current clarity of information (M=3.41) is undermined by poor timeliness (M=2.47). The system exists but is "static." The FAI must transition to an active Dynamic Calendar updated in real time. This "Fixed Signal" serves as the primary tool for 50.0% of stakeholders facing academic barriers, providing them with the lead time needed to plan and commit. To move away from the 88.24% reliance on WhatsApp, the official website must be the primary channel for dissemination. Information should be updated weekly during the off-season and daily during the tournament cycle. Based on an accessible system that disseminates vital information in a convenient format to stakeholders.

The Signaling Paradox identified in the data, where 94.1% of users are daily social media consumers but 70.6% are not "sharers," highlights a deficiency in the quality and quantity of the data provided, not the lack of a platform.

Professional Media as a Growth Signal: To meet the demand for professional media (M=3.94), the FAI must treat every tournament as a content-generation hub. High-quality imagery and video highlights serve as signals (Spence, 1973) that athletes and fans can use to advocate for the sport. Athlete Visibility Loop: By frequently posting and tagging upcoming athletes, the FAI provides the community with "Digital Capital." When an athlete shares a professional highlight, they move from the Attraction stage to the Allegiance stage of the Psychological Continuum Model (PCM), essentially acting as a decentralized marketing arm for the federation.

The study shows a "Compliance Gap": 58.8% of users visit the website only when forced. To correct this, the website must transition from a PDF repository to a User-Centric Dashboard.

- The system should track and clearly display the athlete rankings, performance statistics, and qualification paths. This data must be accessible to all stakeholders, coaches, parents, and athletes without requiring a login "gate," to ensure total transparency.
- Every upcoming tournament should have a dedicated "Event Hub" on the website containing live links to the results, venue map,s and entry lists. This centralized accessibility reduces the organizational friction that currently accounts for 36.36% of the participation barriers.

To satisfy the near-universal demand for better social media use (M=4.88), the FAI must implement a rigorous posting schedule that focuses on accessibility and promotion. The prerequisite is high relevance in the posting, as well as uploading engaging content aligned with digital trends to capture the target audience's attention.

This research finds that the "Professionalization of Growth" in Indian fencing depends on the convergence of these variables: a legally compliant, unified database that breaks informational silos, a signaling strategy that uses professional media to attract investment, and a PCM-aligned engagement strategy. By dealing with the Information Asymmetry identified in this study, the ecosystem can transition from a reactive "Shadow System" to a forward-looking, data-driven Sports Intelligence Ecosystem (Dašić, 2026; Ram Mohan, 2025).

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