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Development and Implementation of a Data-Driven Culture in the National Olympic Committee of I.R.Iran

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Abstract

This research addresses the critical need for fostering a data-driven culture within the National Olympic Committee (NOC) of Iran to enhance its strategic decision-making, resource allocation, and overall operational effectiveness in the increasingly technology-reliant landscape of modern sports. Despite acknowledging the importance of data, the Iranian NOC, like many sports organizations, faces significant challenges in systematically leveraging data due to an underdeveloped data-centric culture, a lack of standardized processes, and resistance to change. This study aims to develop a comprehensive framework for the establishment and institutionalization of such a culture within the Iranian NOC.

The primary objective was to identify and design the necessary managerial and organizational structures, mechanisms, and processes required to build and sustain a data-driven environment that engages all key stakeholders, including NOC senior management, federation presidents/vice-presidents, elite coaches, and elite athletes. Subsidiary objectives focused on overcoming organizational resistance, optimizing resource allocation through data-informed strategies, and developing practical, user-friendly management dashboards.

A predominantly qualitative research methodology was employed, utilizing a limited mixed-methods approach. Data were collected through semi-structured interviews with 18 senior managers from the NOC and national sports federations, and questionnaires administered to 6 elite coaches and 26 elite athletes. Document analysis of strategic plans and relevant reports, along with comparative insights from global best practices, further informed the study. Thematic analysis was the primary method for analyzing qualitative data, allowing for the identification of core themes and patterns across stakeholder groups, while descriptive statistics were used for quantitative survey data.

Key findings reveal a consensus among all stakeholder groups on the strategic importance of data in modern sports management. However, a significant disparity exists between this recognition and the current state of data utilization. Major challenges identified include cultural resistance to change and traditional decision-making paradigms; technical limitations such as a lack of integrated infrastructure and data quality issues; structural problems including inter-institutional discoordination and unclear roles; human resource deficiencies related to data literacy and specialized expertise, compounded by livelihood concerns for coaches and athletes; and financial constraints. Resource allocation emerged as a particularly pervasive concern, with widespread calls for fairer, more transparent, and indicator-based systems. While managers acknowledged initial efforts towards data systems, end-users (coaches and athletes) perceived a substantial gap in practical application and their own involvement in data-related processes.

The research culminates in a series of actionable recommendations and a three-phased operational plan designed to guide the NOC of Iran through this transformation by the end of 1407 SH (~March 2029). Recommendations emphasize establishing a central Data Governance and Digital Transformation Steering Council, implementing a comprehensive change management and multi-level data literacy training program, redesigning key processes (especially resource allocation and talent identification) to be data-driven, completing and integrating a National Sports Data Management System (NSDMS) with user-friendly dashboards, creating data-based incentive and support mechanisms, and strengthening cooperation and trust within the national sports ecosystem. A robust framework for monitoring, evaluation, and control is also proposed to ensure accountability and adaptive management.

This study concludes that the transition to a data-driven culture is not merely an option but a strategic imperative for the Iranian NOC. Successful implementation of the proposed framework is envisioned to enhance operational efficiency, improve competitive performance, and foster transparency and accountability, thereby contributing to the sustained excellence of Iranian sports. The findings and a detailed action plan offer a practical pathway for the NOC to navigate this complex but essential organizational evolution.

Résumé

Cette recherche aborde le besoin essentiel de promouvoir une culture axée sur les données au sein du Comité National Olympique (CNO) d'Iran afin d'améliorer sa prise de décision stratégique, son allocation de ressources et son efficacité opérationnelle globale dans le paysage de plus en plus dépendant de la technologie du sport moderne. Bien qu'il reconnaisse l'importance des données, le CNO iranien, comme de nombreuses organisations sportives, est confronté à des défis importants dans l'exploitation systématique des données en raison d'une culture data-centrique sous-développée, d'un manque de processus standardisés et d'une résistance au changement. Cette étude vise à développer un cadre complet pour l'établissement et l'institutionnalisation d'une telle culture au sein du CNO iranien.

L'objectif principal était d'identifier et de concevoir les structures, mécanismes et processus managériaux et organisationnels nécessaires pour construire et maintenir un environnement axé sur les données qui implique toutes les parties prenantes clés, y compris la haute direction du CNO, les présidents/vice-présidents des fédérations, les entraîneurs d'élite et les athlètes d'élite. Les objectifs subsidiaires se concentraient sur le dépassement de la résistance organisationnelle, l'optimisation de l'allocation des ressources grâce à des stratégies basées sur les données, et le développement de tableaux de bord de gestion pratiques et conviviaux.

Une méthodologie de recherche principalement qualitative a été employée, utilisant une approche mixte limitée. Les données ont été collectées par le biais d'entretiens semi-directifs avec 18 cadres supérieurs du CNO et des fédérations sportives nationales, et de questionnaires administrés à 6 entraîneurs d'élite et 26 athlètes d'élite. L'analyse documentaire des plans stratégiques et des rapports pertinents, ainsi que des informations comparatives issues des meilleures pratiques mondiales, ont enrichi l'étude. L'analyse thématique a été la principale méthode d'analyse des données qualitatives, permettant d'identifier les thèmes et les schémas centraux entre les groupes de parties prenantes, tandis que des statistiques descriptives ont été utilisées pour les données quantitatives des questionnaires.

Les principales conclusions révèlent un consensus parmi tous les groupes de parties prenantes sur l'importance stratégique des données dans la gestion sportive moderne. Cependant, une disparité significative existe entre cette reconnaissance et l'état actuel de l'utilisation des données. Les défis majeurs identifiés comprennent la résistance culturelle au changement et les paradigmes décisionnels traditionnels ; les limitations techniques telles que le manque d'infrastructures intégrées et les problèmes de qualité des données ; les problèmes structurels, y compris la coordination interinstitutionnelle insuffisante et les rôles mal définis ; les déficiences en ressources humaines liées à la littératie des données et à l'expertise spécialisée, aggravées par les préoccupations relatives aux moyens de subsistance des entraîneurs et des athlètes ; et les contraintes financières. L'allocation des ressources est apparue comme une préoccupation particulièrement omniprésente, avec des appels généralisés à des systèmes plus équitables, plus transparents et basés sur des indicateurs. Alors que les gestionnaires reconnaissaient les efforts initiaux en matière de systèmes de données, les utilisateurs finaux (entraîneurs et athlètes) percevaient un écart substantiel dans l'application pratique et leur propre implication dans les processus liés aux données.

La recherche aboutit à une série de recommandations concrètes et à un plan d'action en trois phases conçu pour guider le CNO d'Iran dans cette transformation d'ici la fin de 1407 SH (~mars 2029). Les recommandations mettent l'accent sur la création d'un Conseil de pilotage central de la gouvernance des données et de la transformation numérique, la mise en œuvre d'un programme complet de gestion du

changement et de formation à plusieurs niveaux sur la littératie des données, la refonte des processus clés (en particulier l'allocation des ressources et l'identification des talents) pour qu'ils soient axés sur les données, l'achèvement et l'intégration d'un Système national de gestion des données sportives (NSDMS) avec des tableaux de bord conviviaux, la création de mécanismes d'incitation et de soutien basés sur les données, et le renforcement de la coopération et de la confiance au sein de l'écosystème sportif national. Un cadre solide de suivi, d'évaluation et de contrôle est également proposé pour garantir la responsabilité et la gestion adaptative.

Cette étude conclut que la transition vers une culture axée sur les données n'est pas simplement une option mais un impératif stratégique pour le CNO iranien. La mise en œuvre réussie du cadre proposé devrait non seulement améliorer l'efficacité opérationnelle et les performances compétitives, mais aussi favoriser la transparence et la responsabilité, contribuant ainsi à l'excellence durable du sport iranien. Les résultats et un plan d'action détaillé offrent une voie pratique au CNO pour naviguer dans cette évolution organisationnelle complexe mais essentielle.

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I sincerely hope that this project, which is the fruit of everyone's kind efforts and support, will serve as a meaningful contribution to the National Olympic Committee of Iran, helping it grow and evolve under the umbrella of the International Olympic Committee. May we witness transformative changes in Iranian sports in the years to come.

Chapter 1: Introduction

1-1- Problem Statement and Significance of Research

In recent years, the astounding advancement of technology and the expansion of its application in organizational leadership have become undeniable. This is particularly evident in the increasing penetration of information management across all facets of managerial decision-making—including general assemblies, voting processes, various process management systems, information management dashboards, and organizational data mining. Consequently, it must be stated that digital governance in the sports domain, and especially within the National Olympic Committee (NOC), is of paramount importance.

In this context, "data" as a strategic asset plays a pivotal role in gaining a competitive advantage and achieving sustainable success. Leading sports organizations worldwide, by leveraging data-driven management systems, have been able to steer their decision-making from reliance on experience and intuitive judgments towards evidence-based approaches and precise analyses. The National Olympic Committee of Iran, as one of the key institutions and the primary custodian of championship sports and the Olympic movement in the country, despite valuable achievements in some sports disciplines, still faces numerous challenges in structural, managerial, and operational dimensions. Preliminary studies and the latest version of the National Olympic Committee's strategic plan have emphasized the necessity of creating databases, documentation, digital transformation, and the development of information infrastructure (digital twin). However, these actions have not yet been systematically organized, centralized, or led to sustainable cultural and procedural changes.

1-2- The Existing Challenge

The primary challenge facing the National Olympic Committee of Iran in this area is not merely a lack of data or technology. More importantly, it is the absence of a deep-rooted data-driven culture at various organizational levels and in interactions with sports federations. This is compounded by the lack of standardized and optimized processes for collecting, managing, analyzing, and utilizing data in decision-making, as well as prevalent organizational and human resistance to new changes. Decisions in many cases are still based on traditional procedures and individual experiences, which can lead to suboptimal resource allocation, weaknesses in talent identification and development, and ultimately, a failure to achieve the full potential of the country's championship sports.

This research, understanding these challenges and adopting a managerial and process-oriented approach, seeks to present a comprehensive framework for the "development and implementation of a data-driven culture in the National Olympic Committee of Iran." The ultimate goal is not merely the deployment of a technical system, but the creation of a sustainable transformation in organizational attitudes, behaviors, and processes. The aim is for data to become an integral part of strategic thinking and daily operations at all levels, from senior management to federations, coaches, and athletes. Along this path, attention to change management, engaging stakeholders, and designing mechanisms that facilitate participation and acceptance are of particular importance.

1-3- Research Objectives

Main Objective:

- To identify and design the necessary processes for establishing, developing, and institutionalizing a data-driven culture and effective data governance in the National Olympic Committee of Iran.

Sub-Objectives:

- To overcome organizational challenges to ensure the implementation of changes among all stakeholders.
- To optimize resource allocation in line with the organization's new strategies and with appropriate management.
- To develop practical and user-friendly management dashboards with easy access to all data for faster decision-making.

1-4- Research Questions

Main Research Question:

- What managerial and organizational structures, mechanisms, and processes are needed to establish and institutionalize data governance and a data-driven culture in the National Olympic Committee of Iran, in a way that engages key stakeholders at various organizational levels and ensures their participation?

Subsidiary Research Questions:

1. What factors play a role in overcoming organizational resistance and successfully implementing a data-driven culture in the National Olympic Committee of Iran?
2. How can financial, human, and technological resources be allocated in the National Olympic Committee of Iran to effectively support data governance and a data-driven culture?
3. What criteria and features should be present in the design of management dashboards for the National Olympic Committee to aid effective and timely decision-making?

1-5- Conclusion

This chapter has established the critical need for a data-driven transformation within the National Olympic Committee of Iran. It highlighted that despite recognizing the importance of data and digital infrastructure, the NOC grapples with a significant gap between strategic intent and practical implementation, primarily due to an underdeveloped data-driven culture and a lack of standardized processes. The research aims to address these deficiencies by proposing a framework that not only focuses on technical systems but also on fostering sustainable cultural and procedural shifts, ultimately enabling the NOC to leverage data for enhanced decision-making, optimized resource allocation, and the overall advancement of Iranian sports. The defined objectives and research questions will guide the subsequent investigation into achieving this crucial organizational evolution.

Chapter 2: Literature Review and Theoretical Foundations

2-1- Introduction

This chapter reviews the research literature and theoretical foundations related to the establishment of a data-driven management system and the development of a data-driven culture in sports organizations, with a special emphasis on National Olympic Committees (NOCs). The aim of this review is to create a conceptual framework for a better understanding of the challenges, opportunities, and requirements facing the National Olympic Committee of Iran on this path of transformation. The main topics of this chapter include definitions and dimensions of data-driven management and culture, the importance of data governance in sports organizations, common challenges in implementing these systems, and a review of global success stories. This review focuses on managerial, organizational, and cultural aspects and will serve as a basis for analyzing findings and presenting recommendations in subsequent chapters.

2-2- Data-Driven Management and Data-Driven Culture: Definitions and Dimensions

Data-Driven Management: Refers to an approach in organizational administration where decision-making at all levels is based on the precise analysis of data and objective evidence, rather than relying solely on intuition, experience, or personal opinions (Chen et al., 2023). This approach includes systematic processes for collecting, cleaning, storing, analyzing, interpreting, and utilizing data to achieve organizational goals, optimize performance, and gain a competitive advantage. In sports organizations, data-driven management can lead to improved athlete performance, optimal resource allocation, talent identification, increased fan engagement, and the development of new revenue streams (Memmert & Rein, 2023).

Data-Driven Culture: Beyond tools and technologies, this refers to a set of shared values, beliefs, norms, and behaviors within an organization that encourage and support the use of data in daily work processes and decision-making (Akhtar et al., 2023; Wamba & Queiroz, 2023). Creating such a culture requires commitment from organizational leaders, empowering employees through training and increasing data literacy, providing easy access to reliable data, and encouraging inquiry, experimentation, and learning through data. In the absence of a strong data-driven culture, even the most advanced technical systems will not achieve the necessary effectiveness (Mikalef et al., 2023; Vidgen et al., 2023). Cultural challenges such as resistance to change, information silos, and lack of trust in data are major obstacles to institutionalizing this culture.

2-3- Data Governance in Sports Organizations

Data Governance: Refers to a framework of rules, roles, responsibilities, processes, and standards that manage and control how data is collected, stored, used, secured, and its quality maintained within an organization (Al-Ruithe et al., 2023; Otto, 2023). In sports organizations, particularly institutions like National Olympic Committees that deal with a large volume of sensitive data related to athletes, federations, and financial resources, establishing an effective data governance system is critically important. The main objectives of data governance include ensuring data quality and integrity, complying with privacy and information security regulations (such as GDPR), managing data-related risks, and increasing the value of data as an organizational asset (Al-Ruithe et al., 2023). Weak data governance can lead to incorrect decisions, resource wastage, privacy breaches, and loss of stakeholder trust (Otto, 2023).

2-4- Key Challenges in Implementing a Data-Driven Management System in Sports

The establishment of a data-driven management system and the development of its associated culture in sports organizations are accompanied by numerous challenges mentioned in the research literature:

Resource Limitations and Optimal Allocation Challenges: As discussed in the analysis of Iran's championship sports situation, many sports organizations face financial and human resource limitations. This makes investment in technical infrastructure, employee training, and recruitment of data specialists difficult. Furthermore, traditional and non-transparent resource allocation processes themselves are an obstacle to moving towards data-driven decision-making (Reading & Scola, 2023; Parnell et al., 2023).

Lack of a Comprehensive Performance Monitoring and Evaluation System: Many sports organizations lack codified, indicator-based systems for monitoring and evaluating the performance of athletes, coaches, and sports programs. This complicates the measurement of an initiative's effectiveness and the identification of areas for improvement (Valero & Sepúlveda, 2023; Memmert & Perl, 2023).

Cultural and Organizational Resistance to Change: Transitioning from traditional, experience-based approaches to data-driven decision-making requires changes in attitudes, skills, and work processes. Resistance from individuals due to fear of losing power derived from information control, fear of increased transparency, or uncertainty about their abilities to work with data are common cultural challenges (Fadika & Tuffour, 2023; Akhtar et al., 2023).

Shortage of Data Literacy and Skills: Effective use of data requires employees and managers to possess an acceptable level of data literacy, including the ability to understand, analyze, interpret, and communicate using data. The lack of these skills in many sports organizations is a serious impediment (Svegin & Ulukan, 2023; Williams & Chinnaswamy, 2023).

Challenges Related to Data Quality, Integrity, and Security: Collecting accurate, reliable, and up-to-date data, integrating disparate data from various sources, and ensuring the security and confidentiality of sensitive data are significant technical and operational challenges (Al-Ruithe et al., 2023; Rein & Memmert, 2023).

2-5- Global Success Stories and Proposed Models

Reviewing the experiences of leading countries in championship sports and successful sports organizations shows that attention to data-centricity has been one of the key factors in their success. For instance, countries like Australia, by relying on performance data analysis and investing in smart systems for talent identification, development, and resource allocation, have achieved significant advancements in their priority sports (O'Connor et al., 2023; recent Sport Australia/AIS reports). Similarly, the International Olympic Committee (IOC), through initiatives such as new strategic agendas and the development of digital platforms for athletes and National Committees, emphasizes the importance of collecting, sharing, and ethically using data to improve performance and good governance in sports (IOC, 2023, with reference to specific recommendations from Olympic Agenda 2020+5).

Generally, successful global models for implementing a data-driven culture and system are based on several key pillars (Wamba & Queiroz, 2023; Vidgen et al., 2023):

- **Leadership Commitment and Active Top-Down Support:** Senior managers must clearly define and promote the vision of data-centricity and provide the necessary resources for its realization (von Briel et al., 2023).
- **Establishment of Appropriate and Transparent Data Structure and Governance:** Clearly defining roles, responsibilities, processes, and standards necessary for managing the data lifecycle (Al-Ruithe et al., 2023; Otto, 2023).
- **Smart Investment in Technical and Analytical Infrastructure:** Including integrated systems for data collection, storage, and advanced tools for data analysis and visualization (Sivarajah et al., 2023).
- **Comprehensive Empowerment of Human Resources:** Providing continuous and targeted training to enhance data literacy and analytical skills at all organizational levels (Svegin & Ulukan, 2023; Williams & Chinnaswamy, 2023).
- **Focus on Creating Tangible Value and Solving Real Organizational Problems:** Data-driven projects should align with the organization's strategic goals and lead to measurable results (Ghasemaghaei, 2023).
- **Adoption of a Gradual, Iterative, and Agile Approach:** Starting with pilot and manageable projects, learning from initial experiences, and then gradually expanding the scope of activities (PMI, 2023).
- **Promotion of a Culture of Collaboration, Knowledge Sharing, and Continuous Learning:** Breaking down information silos, encouraging data-based teamwork, and creating an environment where data is used for continuous learning and improvement (Akhtar et al., 2023; Wamba & Queiroz, 2023).

2-6- Conclusion

The literature review indicates that the transition to data-driven management and the creation of its associated culture is a complex and multifaceted process that requires simultaneous attention to technical, human, cultural, and structural dimensions. For the National Olympic Committee of Iran to succeed on this path, it must, while benefiting from global success stories, formulate and implement solutions tailored to its specific context and challenges. Focusing on "changing culture and processes" as the central axis can contribute to the greater sustainability and effectiveness of this transformation. The next chapter will describe the methodology of this research for a deeper investigation of this topic within the National Olympic Committee of Iran.

Chapter 3: Research Methodology

3-1- Introduction

This chapter details the methodology employed in this research to answer the research questions and achieve the defined objectives for "establishing and developing a data-driven culture in the National Olympic Committee of Iran." The research methodology is designed to enable an in-depth exploration of the perspectives, experiences, challenges, and perceived requirements of key stakeholders. This chapter will elaborate on the overall research approach, statistical population and sampling method, data collection methods and tools, data analysis process, and ethical considerations of the research.

3-2- Overall Research Approach

Given the exploratory and in-depth nature of the research questions, which focus on identifying "managerial structures and processes" for establishing and institutionalizing a data-driven culture, as well as understanding "how to overcome organizational obstacles and resistance," a qualitative research approach has been selected as the dominant approach for this study. The qualitative approach allows for an in-depth exploration of phenomena in their real-world context, understanding participants' experiences and perspectives from their own viewpoint, and identifying patterns and underlying meanings in textual and verbal data (Creswell & Poth, 2018). Although the primary focus is on qualitative methods, limited quantitative data (particularly in analyzing Likert scale responses from questionnaires distributed among coaches and athletes) has also been used to complement and support the qualitative findings. This limited mixed-methods approach contributes to richer analyses and provides a more comprehensive picture of the current situation.

3-3- Research Population and Sampling

The target population for this research includes all key stakeholders directly or indirectly involved with decision-making processes, resource allocation, performance management, and the development of championship sports within the National Olympic Committee of Iran and sports federations. These individuals were categorized into four main groups:

1. Presidents/Vice-Presidents of Sports Federations: This group includes decision-makers within the federations in the country's sports sector. (8 individuals were interviewed).
2. Senior Managers of the National Olympic Committee: This group includes key decision-makers and policymakers in the country's sports. (10 managers from the committee were interviewed).
3. Elite National Team Coaches: These individuals are at the forefront of program implementation and have direct contact with athletes. (6 elite coaches were surveyed via questionnaire).
4. Elite National Athletes: This group has first-hand experience of the impact of policies and processes on their performance, and their perspectives are crucial for identifying practical needs and challenges. (26 elite athletes were surveyed via questionnaire).

Sampling Method:

Given the qualitative nature of the research and the need to obtain in-depth and rich information from knowledgeable and experienced individuals, purposive sampling was used. In this method, participants were selected based on their knowledge, experience, organizational position, and ability to provide information relevant to the research questions. The aim was to achieve maximum diversity of perspectives while maintaining the depth of information. The sample size for each group was determined based on the principle of theoretical saturation and considering the practical limitations of the project.

3-4- Data Collection Methods and Tools

To collect data and answer the research questions, a combination of qualitative and limited quantitative methods was employed:

Semi-structured Interviews:

- **Objective:** To obtain in-depth information regarding the attitudes, beliefs, experiences, challenges, and suggestions of senior managers of the National Olympic Committee (10 individuals) and Presidents/Vice-Presidents of national federations (8 individuals) concerning the current situation, obstacles, and requirements for implementing a data-driven culture and system.
- **Tool:** An interview guide comprising a set of open-ended and guiding questions that allowed for flexibility and exploration of emerging themes.
- **Procedure:** Interviews were conducted face-to-face or online (depending on circumstances) and, with the interviewees' permission, were recorded.

Questionnaire:

- **Objective:** To gather the perspectives of a larger group of elite coaches (6 individuals) and elite athletes (26 individuals) on the current state of data use, challenges, needs, and the potential impact of data-centricity on performance and resource allocation.
- **Tool:** The questionnaire consisted of two parts:
    - Closed-ended questions (Likert scale): To measure attitudes and assess the current situation on defined scales.
    - Open-ended questions: To provide further explanations and express qualitative viewpoints.
- **Procedure:** Questionnaires were distributed and collected electronically.

Document Review and Comparative Case Studies:

- **Objective:** To review internal documents of the National Olympic Committee (such as the strategic plan), reports, and also to study the successful experiences of other National Olympic Committees or sports organizations in implementing data-driven systems (as some were mentioned in Chapter Two).

- **Tool:** Content analysis of existing documents and reports.

3-5- Data Analysis Process

The data analysis process in this research was primarily based on thematic analysis for qualitative data derived from interviews and open-ended questionnaire responses, which included the following stages:

1. **Familiarization with the data:** Verbatim transcription of interviews, repeated reading of interview transcripts and open-ended responses, and initial note-taking.
2. **Generating initial codes:** Systematically coding textual data line-by-line or section-by-section, focusing on preserving the participants' original meaning.
3. **Searching for themes (initial aggregation and grouping of codes):** Identifying similar or related codes and grouping them around broader concepts or categories.
4. **Reviewing themes (refining and integrating codes):** Carefully examining potential themes, merging similar themes, splitting broad themes, and discarding themes lacking sufficient support. At this stage, the process of integrating codes and themes identified from different participant groups was undertaken to achieve a unified list of core codes and final research themes.
5. **Defining and naming themes:** Precisely defining the essence of each final theme and assigning it a concise and descriptive name.
6. **Cross-group comparison:** Throughout the analysis process, and particularly after extracting the final themes, findings were compared across the four participant groups, and commonalities, differences, and group-specific characteristics were identified and analyzed.

For quantitative data from the Likert scale section of the questionnaires, descriptive statistics such as mean and frequency were used to summarize and present the results. These quantitative results were used to support and complement the qualitative findings.

3-6- Ethical Considerations

Throughout all stages of this research, the following ethical principles were considered:

- **Informed Consent:** Before any data collection, the research purpose, how information would be used, and the participants' right to withdraw at any time were fully explained, and verbal informed consent was obtained.
- **Confidentiality and Anonymity:** The identities of all participants and the information they provided were treated as confidential, and identifiers and assigned codes were used in reports instead of individuals' names. All raw data are stored in a secure location.
- **Avoidance of Harm:** Efforts were made to ensure that the research process did not cause any physical, psychological, or professional harm to the participants.
- **Integrity and Transparency:** Research findings have been reported honestly and without bias.

3-7- Methodological Limitations

The most significant methodological limitations of this research include:

- **Limited generalizability of qualitative findings:** Due to the qualitative nature of the research and the use of purposive sampling, the findings may not be fully generalizable to the entire target population. However, the primary aim of the research was to gain an in-depth understanding of the subject within the studied context.
- **Potential researcher bias:** As the primary instrument for collecting and analyzing qualitative data, the researcher might unintentionally be influenced by personal assumptions or experiences. To mitigate this bias, methods such as peer debriefing and continuous reflexivity were employed.
- **Time and resource constraints:** These limitations may have impacted the depth and breadth of data collection, particularly through time-consuming methods such as focus groups and extensive interactive workshops.

  Despite these limitations, efforts have been made to obtain reliable and useful findings to answer the research questions and achieve the project objectives by employing rigorous and valid methods.

3-8- Conclusion

This chapter has outlined the methodological framework designed to rigorously investigate the development and implementation of a data-driven culture within the NOC of Iran. By employing a predominantly qualitative approach, supplemented with limited quantitative data, the research sought to gain rich, contextual insights from diverse key stakeholders. The use of purposive sampling, semi-structured interviews, questionnaires, and document analysis facilitated comprehensive data collection. Thematic analysis was chosen as the primary analytical tool to identify core patterns and meanings. While acknowledging limitations such as generalizability and potential bias, the described methodology provides a robust foundation for addressing the research questions and achieving the study's objectives, ensuring that the findings presented in subsequent chapters are both credible and contextually relevant.

Chapter 4: Presentation and Analysis of Findings

4-1 Introduction

This chapter presents and analyzes the research findings. Given the exploratory nature of the research questions—focusing on identifying processes, overcoming organizational challenges, optimizing resource allocation, and developing management dashboards—a qualitative thematic analysis approach was employed. This allowed for an in-depth exploration of stakeholders' perspectives within Iran's elite sports ecosystem.

4-2 Data Preparation

All semi-structured interviews were transcribed verbatim. Questionnaire data, including quantitative (Likert scale) and qualitative (open-ended responses) sections, were compiled and organized for systematic review. All data were anonymized where necessary to ensure participant confidentiality, and respondent identifiers were used for tracking during the analysis phase.

4-3 Analysis of Group One: Presidents and Vice-Presidents of Federations

This section presents the key findings from the analysis of semi-structured interviews with 8 presidents and vice-presidents of Iranian sports federations. The analysis is based on identifying core codes, their relationships, and the extracted themes.

4-3-1 Selected Core Codes and Centrality (Group One)

Core Code (Group One)	Centrality	Brief Description
Resource Allocation: Process, Challenges, Optimization	High	Current process, problems (imbalance, limitation, currency), need for indicators and fairness.
Financial Resources and Procurement	High	Resources (governmental, internal, sponsor), challenge of budget shortage.
Role and Importance of Data in Sports Management	High	Awareness of data's importance for decision-making, planning, evaluation; existence of basic systems.
Structure, Role, and Interactions of NOC and Federations	Medium	Evaluation of NOC's role and support, communication methods, expectations (equipment, infrastructure, programs), NOC's limitations.
Challenges of Implementing Data-Drivenness	Medium	Resistance to change, lack of culture, difficulty in data collection and validation, shortage of analytical specialists.
Planning and Vision in Sports	Medium	Importance of planning (short/long-term), challenge of result-orientation, need for attention to sustainable development.
Human Resource Management in Sports	Medium	Importance of specialized personnel (financial, technical), challenge of skill shortage, use of elites.

Data-Driven Culture: Requirements and Promotion	Medium	Need for training, infrastructure (systems), attitude change, benchmarking.
Athlete Participation	Medium	Differing views (pro/con) on direct athlete participation in decision-making; existence of athletes' commission.
Data Infrastructure and Technology	Low	Mention of the need to improve facilities, halls, equipment, and use of technology (AI, video analysis).
Impact of External Factors	Low	Impact of sanctions, currency, sudden macro policies.
Performance Evaluation and Monitoring	Low	Criticism of medal-centricity, need for evaluation based on actual performance.
Transparency and Accountability	Low	Need for transparency in spending public funds.

4-3-2 Relationship Between Core Codes (Group One)

Analysis of the relationships between this group's core codes shows that **Resource Allocation** and **Financial Resources** are highly interconnected and central concepts, overshadowing almost all other aspects of federation management. **Planning** is presented as a basis for resource allocation but is itself affected by resource allocation challenges and the **Impact of External Factors**. The **Role and Importance of Data** are seen as a potential solution for improving resource allocation, planning, and performance evaluation. However, its implementation faces **Challenges of Implementing Data-Drivenness** (cultural, technical, human). Overcoming these requires promoting a **Data-Driven Culture** (including training, infrastructure, and data technology) and attention to managing specialized **Human Resources**. The **Structure, Role, and Interactions of NOC and Federations** also directly impact resource allocation and received support; improving these interactions can help address challenges. Perspectives on **Athlete Participation** are also influenced by managers' views on decision-making processes and the role of specialization.

4-3-3 Extracted Themes (Group One)

Based on the core codes and their relationships, the following main themes are identifiable for the first group:

- Theme 1: The central challenge of "Resource Allocation" and the necessity of transitioning to a fair and indicator-based system.
- Theme 2: Data-drivenness as a solution: Awareness of potential alongside implementation barriers.
- Theme 3: Interaction with the National Olympic Committee: Expectations of support versus limitations and criticisms.
- Theme 4: Planning and sustainable development: Tension between long-term vision and short-term result-oriented pressures.

- Theme 5: The role of management and human resources in leading federations.

4-3-4 Text Synthesis - Group One

Managers and vice-presidents of sports federations, as the primary executive arms of the country's championship sports, hold shared yet differing views on resource management, data utilization, and interaction with higher authorities.

1. **Resource Allocation: A Pervasive Challenge, Contradictory Solutions**
    - **Similarities:** Nearly all managers agreed on the inadequacy of financial resources from the Ministry of Sports and NOC, especially given inflation and exchange rates. They unanimously believed that timely and sufficient resource allocation directly impacts facilities, international participation, experienced staff, and athlete motivation. Most emphasized the need for objective, indicator-based resource allocation (performance, medal count, discipline importance) and documented plans, reducing reliance on personal relationships. The necessity of internal revenue generation and sponsorship was also highlighted by some.
    - **Contradictions and Specific Features:** The perceived structuredness of current allocation varied; some federations (e.g., football) claimed rule-based internal allocation, while others (e.g., archery) admitted to the significant role of personal decisions. The concept of "fairness" also differed: some prioritized performance and medals, others focused on needs, and some (e.g., weightlifting) stressed considering less-privileged provinces and criticized imbalances between high-income and medal-winning (but low-income) disciplines. Views on the Ministry/NOC's supervisory role in allocation also diverged. Equipment-intensive federations uniquely faced dual challenges from sanctions and currency fluctuations.
2. **Data-Driven Management: Awareness of Importance, Challenge in Execution**
    - **Similarities:** Almost all managers acknowledged the importance of data for accurate decision-making, better planning, fairer resource allocation, performance evaluation, and improved athlete results. Many federations had initiated basic information systems (membership, training, ranking), though maturity varied. Common challenges included a weak data-driven culture, resistance to change, difficulties in collecting reliable data, and a shortage of data analysis specialists. All stressed the need for appropriate technical infrastructure and training for all personnel.
    - **Contradictions and Specific Features:** The actual level of data use differed across federations. Attitudes towards data sharing varied, depending on data nature and federation policy. Some federations specifically noted the potential of artificial intelligence in data analysis.
3. **Interaction with the National Olympic Committee: Expectations and Evaluations**
    - **Similarities:** Most federations acknowledged the NOC's supportive role (financial, technical), though satisfaction levels varied. A need for more interaction, earlier

communication (especially pre-event), and greater transparency was commonly felt. Some criticized the NOC's medal-centric approach to support allocation.

- **Contradictions and Specific Features:** Satisfaction with NOC support was higher among Olympic and medal-winning federations. Expectations extended beyond financial aid to include technical, scientific, educational assistance, and infrastructure development. The football federation, for instance, found NOC facilities very limited for its needs.

4. **Sustainable Development, Human Resource Management, and Stakeholder Participation**
    - **Similarities:** The critical role of efficient and specialized human resources was emphasized. The importance of talent scouting and long-term planning was acknowledged, though often hindered by pressure for short-term results. Using elite athletes, coaches, and veterans in advisory or managerial roles was viewed positively.
    - **Contradictions:** Views on the extent and manner of direct participation of active athletes in macro-level decision-making differed among managers.

Overall Conclusion for Group One: Federation managers, while aware of the need to transform towards scientific and data-driven management, face serious challenges, especially in securing and fairly allocating financial resources, as well as cultural and infrastructural obstacles to the full implementation of data-drivenness. They have specific expectations from higher authorities (especially the National Olympic Committee) for more targeted support, creation of necessary infrastructure, and facilitation of communication. Although steps have been taken in using data and involving elites, achieving an integrated, transparent, and efficient system requires addressing the existing structural, cultural, and financial challenges in Iran's sports ecosystem.

4-4 Analysis of Group Two: Senior Managers of the National Olympic Committee

This section is dedicated to analyzing the findings from semi-structured interviews with 10 senior managers and executive board members of the National Olympic Committee of Iran.

4-4-1 Selected Core Codes and Centrality (Group Two)

Core Code (Group Two)	Centrality	Brief Description
Role and Importance of Data in Sports Management	Very High	Necessity of data for decision-making, planning, situational awareness, resource allocation, evaluation.
Data-Driven Culture: Requirements and Promotion	Very High	Need for culture building, requirements (training, infrastructure, support), promotion strategies.
Challenges of Implementing Data-Drivenness	High	Resistance to change, traditional culture, lack of skills/knowledge, security, cumbersome regulations.
Structure, Role, and Interactions of NOC and Federations	High	NOC's position (international, NGO, independent), Ministry's role, interaction with federations, structural challenges (conflicting laws, ambiguities).

NOC Decision-Making Process	High	Current decision-making method (executive board, general assembly), influence of experience, need for data-drivenness and transparency.
Data Infrastructure and Technology	Medium	Need for integrated system, database, dashboard, AI, assessment center, academy.
Planning and Vision in Sports	Medium	Importance of strategic planning, vision (promoting values, sustainable development), planning challenges (uncertainty, non-implementation).
Human Resource Management in Sports	Medium	Importance of specialized personnel, meritocracy, management stability, training, role of consultants and experts.
Financial Resources and Procurement	Medium	Challenge of financial procurement, dependence on government, need for sponsors and private sector.
Resource Allocation: Process, Challenges, Optimization	Medium	Need for targeted and indicator-based allocation (medal count, grassroots), challenge of sole medal-centricity.
Data Security, Confidentiality, and Access	Medium	Concerns about information leakage, data accuracy, need for classification and access levels.
Impact of External Factors	Medium	Impact of politics, economy, society, laws, technology, environment on NOC and data-drivenness.
NOC Organizational Culture	Low	Current characteristics (belonging, welfare, transparency), impact of international relations and benchmarking.
Transparency and Accountability	Low	Mention of the existence of a transparency portal and its importance.

4-4-2 Relationship Between Core Codes (Group Two)

In this group, the **Role and Importance of Data** and a **Data-Driven Culture** remain central. Achieving these is strongly linked to **Challenges of Implementing Data-Drivenness** (especially cultural resistance and skill shortages in **Human Resource Management**) and the need for **Data Infrastructure and Technology**. The **NOC Decision-Making Process**, as the primary platform for data application, is influenced by the **NOC's Structure and Role** (and its independence) and **Organizational Culture**. Improving this process requires overcoming challenges and moving towards data-drivenness. **Planning and Vision** must also be data-based, while facing implementation challenges and the **Impact of External Factors**. **Resource Allocation** and **Financial Resources**, though mentioned, are less central than for federations, with more emphasis on the need for purposefulness and data use in this process. **Data Security** concerns become more prominent with infrastructure development.

4-4-3 Extracted Themes (Group Two)

- Theme 1: The strategic imperative of data-drivenness: Cultural, technical, and human requirements for NOC transformation.
- Theme 2: Reforming NOC decision-making processes and governance: Towards evidence-based transparency and efficiency.
- Theme 3: The NOC's role in the sports ecosystem: Challenges of interaction, independence, and strategic guidance.
- Theme 4: Macro context and resource management: Impact of environmental factors and challenges of sustainable procurement and allocation.

4-4-4 Text Synthesis - Group Two

Senior NOC managers, with a broader perspective, discussed developing a data-driven culture.

1. **The Necessity of Data-Drivenness and Transition Requirements:** A strong consensus exists on data's critical importance for modern sports management, deemed essential for accurate, evidence-based decision-making, effective strategic planning (especially for Olympic cycles), targeted resource allocation, and realistic performance evaluation. They emphasized creating a data-driven culture across the organization and national sports, recognizing the need for appropriate technical infrastructure (integrated systems, AI) and human resource training as primary requirements. Their view of data-drivenness is largely macro-strategic, with some highlighting the potential role of the National Olympic Academy and assessment centers.
2. **Challenges of Implementing Data-Drivenness:** Resistance to change and a dominant traditional organizational culture (experience-based decisions) were identified as main obstacles. A shortage of specialized data analysis personnel and concerns about data security/confidentiality were also significant. Some managers viewed the core challenge not as a lack of data, but its incorrect use and insufficient analysis. Management instability was also cited as hindering long-term programs like data-driven initiatives.
3. **Decision-Making Process and the Role of Data:** It was confirmed that macro-level decisions occur within the executive board and general assembly. An acknowledgment was made that data currently do not play a central role, with reliance primarily on experience and personal opinions. The need to shift towards structured, transparent, data-based decision-making was stressed. While specialized commissions offer expert input, the influence of individual decisions needs reduction. Conflicts between domestic laws and international requirements in decision-making were also noted.
4. **NOC Structure, Role, and Interactions:** Emphasis was placed on the NOC's status as Iran's international sports representative and an independent, non-governmental body (as per the Olympic Charter). Its role in supporting, supervising, and coordinating federations, and promoting Olympic values, was highlighted. Challenges include maintaining genuine independence from external (political/governmental) pressures and potential conflicts or lack of coordination with the Ministry of Sports. Improving interaction and building mutual trust with federations for data sharing and program implementation was also emphasized.

5. **Resource Management and Planning:** The challenge of securing sustainable financial resources and dependence on government budgets was recognized as a weakness. The need for targeted resource allocation based on performance indicators (medal count, grassroots potential) was stressed, alongside the importance of strategic planning and long-term vision. Some criticized sole medal-centricity in resource allocation. The difficulty of implementing strategic plans due to environmental uncertainties (economic, political) was seen as a significant issue, along with the need to review construction projects to focus on actual needs.

Overall Conclusion for Group Two: Senior managers of the National Olympic Committee, while deeply understanding international requirements and the strategic role of data-drivenness, face significant challenges in changing the traditional organizational culture, securing sustainable resources, maintaining institutional independence, and improving interactions with federations. They emphasize the need for investment in data infrastructure and human resource training and believe that data-drivenness can lead to more optimal decisions, fairer resource allocation, and more effective planning to achieve sporting success. However, achieving this requires strong managerial determination, overcoming structural and cultural obstacles, and creating an integrated and reliable system.

4-5 Analysis of Group Three: Elite Coaches

This section analyzes the findings from the questionnaire distributed among 6 elite coaches in Iranian sports.

4-5-1 Selected Core Codes (Group Three)

Core Code (Group Three)	Centrality	Brief Description
Role and Importance of Data in Sports Management	Very High	Affirmation of data's positive role in improving performance, allocation, talent ID, planning, evaluation.
Human Resource Management in Sports	Very High	Livelihood challenges, disproportionate salaries and bonuses, lack of respect, need for support (insurance, loans, welfare, psychologist, training).
Resource Allocation: Process, Challenges, Optimization	High	Critical impact of resources on performance and motivation, criticism of current allocation method, need for more and specific budget.
Coach Participation	High	Necessity of very high coach participation in technical decision-making and resource allocation.
Data-Driven Culture: Requirements and Promotion	Medium	Need for training, benchmarking, creating structure, using specialists, enforcement.
Structure, Role, and Interactions of NOC and Federations	Medium	Evaluation of federation support level (varied), need for better interaction between institutions and coaches.

Data Infrastructure and Technology	Medium	Relative adequacy of training facilities (differing views), need for data systems and tools (AI).
Planning and Vision in Sports	Medium	Relative adequacy of training camps (differing views), calendar challenges, challenge of maintaining readiness.
Sustainable Development and Talent Scouting	Low	Role of coaches in talent scouting (mostly positive).
Performance Evaluation and Monitoring	Low	Mention of the need to monitor budgets.
Transparency and Accountability	Low	Mention of fairness and transparency in resource allocation.

4-5-2 Extracted Themes (Group Three)

- Theme 1: Livelihood and status challenges of elite coaches: Urgent need for support and respect.
- Theme 2: The critical role of resources and planning in success: Evaluation of the current situation.
- Theme 3: The potential of data-drivenness from coaches' perspective: Opportunities versus the current state.
- Theme 4: The necessity of coaches' participation and role in decision-making and processes.

4-5-3 Synthesis of Quantitative and Qualitative Findings - Group Three

Elite coaches, as technical guides, play an irreplaceable role. Their views clarify professional challenges, needs, and attitudes towards data application.

1. **Livelihood and Professional Status Challenges:** The most prominent finding was severe dissatisfaction with their financial and livelihood situation (average 1.67 for salary/bonus adequacy, indicating strong opposition). Open-ended responses frequently cited challenges like "material and moral respect," "livelihood," "job security," "bonus system," and "low income." Sports insurance was also rated unfavorably (average 2.67).
2. **Role of Resources, Facilities, and Planning:** Coaches strongly believe adequate resource allocation (avg 4.83), welfare facilities (avg 5.00), and low-interest loans (avg 4.83) positively impact performance. Adequate resources were confirmed to improve training facilities and competition participation (averages >4). However, there was no complete consensus on the current adequacy of training facilities and camps (averages ~3.8-4.0), with varied individual responses and some open-ended comments like "high expectations with low facilities," indicating non-uniform conditions. Overall federation support was rated moderately (avg 3.50).
3. **Attitude towards Data-Drivenness and its Current State:** The positive role of data in athlete performance (avg 4.23), fairer resource allocation (4.17), talent ID (4.23), training programs (4.31), and performance evaluation (4.35) was decisively confirmed. They also believe a data-driven culture can improve communication with officials (4.08). However, a significant gap between

theory and practice was evident. While data's importance was understood, current federation data use (avg 3.33), coaches' access to data (3.50), federation's help in interpretation (3.50), and coach involvement in data processes (3.33) were all rated moderately or near neutral, indicating unrealized potential. Suggested promotion strategies included administrative structures, specialized training, expert use, benchmarking, AI for knowledge conversion, and even mandates.

4. **Coach Participation and Improving Federation Performance:** A very strong emphasis was placed on the need for high coach participation in technical decision-making and consideration of their opinions in resource allocation (current situation rated unfavorably). Improving federation performance was seen to require competent managers, more funding, and better institution-coach interaction. Coaches' role in talent scouting was generally rated positively.

Overall Conclusion for Group Three: Elite coaches, despite their awareness and affirmation of the positive role of data-drivenness in improving all aspects of sports, are deeply struggling with livelihood, financial, and lack-of-respect challenges regarding their professional status, considering these the most significant obstacles they face. They demand much greater participation in technical decision-making and more specific financial and structural support from federations. In the context of data-drivenness, they feel a significant gap between its theoretical potential and practical implementation and believe federations must take more serious steps in training, infrastructure development, and practical application of data, and also involve coaches in this process.

4-6 Analysis of Group Four: Elite Athletes

This section analyzes the findings from the questionnaire distributed among 26 elite athletes in Iran.

4-6-1 Selected Core Codes (Group Four)

Core Code (Group Four)	Centrality	Brief Description
Resource Allocation: Process, Challenges, Optimization	Very High	Dissatisfaction with fairness and current allocation method (based on need/performance), strong impact of resources on motivation and facilities.
Role and Importance of Data in Sports Management	Very High	Affirmation of data's positive role in improving performance, allocation, talent ID, planning, evaluation; current insufficient use.
Financial Resources and Procurement	High	Feeling of insufficient resources in federations, need for increased budget and financial support.
Data Infrastructure and Technology	Medium	Need to improve training facilities, halls, and equipment; mention of data's role in this improvement.
Athlete Participation	Medium	Need for more support for athletes, participation in data collection (current weak status), post-championship support.

Data-Driven Culture: Requirements and Promotion	Medium	Need for training, infrastructure creation, transparency, benchmarking, use of specialists.
Human Resource Management in Sports	Medium	Need for psychological support, attention to health, use of experienced coaches, removal of inefficient individuals, use of specialists and retirees.
Planning and Vision in Sports	Medium	Impact of resources on competition participation, need for clear plans and statutes, foreign training camps.
Performance Evaluation and Monitoring	Low	Mention of the need for more accurate evaluation with data.
Transparency and Accountability	Low	Need for transparency in resource allocation and reporting.
Sustainable Development and Talent Scouting	Low	Role of data in talent scouting, need for investment in grassroots. Mention of the role of television broadcasting and sponsors.
Impact of External Factors	Low	

4-6-2 Extracted Themes (Group Four)

- Theme 1: Dissatisfaction with resource allocation and facilities: Demand for fairness, transparency, and support.
- Theme 2: Acceptance of the importance of data-drivenness versus current insufficient experience.
- Theme 3: Need for improved management and planning in federations.

4-6-3 Synthesis of Quantitative and Qualitative Findings - Group Four

Elite athletes, as core stakeholders, offered valuable perspectives on federations and their needs.

1. **Dissatisfaction with Resource Status and Allocation:** Significant dissatisfaction with resource allocation fairness (avg 2.77) and adequacy (avg 2.65) was prominent. Athletes largely did not believe current allocation was based on performance (avg 2.96) or their needs (avg 3.00). Open-ended responses frequently called for fairness, transparency, increased budgets, and performance/need-based allocation. Despite this, athletes strongly believed fair and adequate resources would significantly boost motivation (avg 4.31) and improve facilities and opportunities.
2. **Attitude towards Data-Drivenness: Acceptance of Importance, Insufficient Experience:** Athletes, like other groups, understood data's positive potential for improving their performance (avg 4.23), fairer resource allocation (3.92), talent ID (4.23), training programs (4.31), and performance evaluation (4.35). They also agreed a data-driven culture could improve communication with officials (4.08). However, a significant theory-practice gap was evident, perhaps even deeper than for coaches. Current federation data use (avg 3.12), athlete access to their own data (2.92), and federation help in interpretation (2.85) were rated near neutral or negatively. Athletes particularly felt uninvolved in data collection/analysis (avg 2.54). Suggested promotion strategies included

training all stakeholders, efficient infrastructure, modern tools (AI, video analysis), defining criteria, transparency, and benchmarking.

3. **Need for Improved Federation Management and Planning:** Beyond resources and data, athletes highlighted the need for overall improvement in federation performance. Requests included expert managers/staff, removal of inefficient individuals and cronyism, precise long-term planning (especially for international events), greater attention to athlete health/nutrition, and post-career support.

Overall Conclusion for Group Four: Elite athletes, as primary stakeholders, while strongly affirming the positive role of data in advancing sports, have serious and widespread concerns about the fairness and adequacy of current resource allocation, as well as the practical use of data and their own involvement in this process. They call for increased transparency, improved facilities, comprehensive support (financial, technical, psychological, post-championship), and more efficient and merit-based management in federations. Addressing these concerns and bridging the gap between the potential of data-drivenness and the current reality is, from the athletes' perspective, essential for increasing motivation and achieving greater success.

4-7 Integrated and Comprehensive Analysis (Cross-Group Analysis)

After separately analyzing the views of all four stakeholder groups, this section provides an integrated review of the findings, identifies key points of convergence and divergence, and presents a comprehensive picture of the current situation and the path forward.

4-7-1 Final Integrated Core Codes and Centrality

The integrated analysis of data from all four groups led to the identification of 13 key core codes. The most important core codes with very high centrality are:

1. Role and Importance of Data in Sports Management: Understanding the vital necessity of data.
2. Data-Driven Culture: Requirements, Promotion, and Challenges: Need for cultural change and its barriers.
3. Resource Allocation: Process, Challenges, Fairness, and Optimization: The main challenge and need for improvement.
4. Structure, Role, and Interactions in the Sports Ecosystem: Relationships between NOC, federations, and Ministry.
5. Human Resource Management: Challenges and Requirements: Lack of expertise, need for support and meritocracy.
6. Data Infrastructure and Technology: Needs and Challenges: Necessity of creating systems and tools.
   Codes with high and medium centrality also included planning, performance evaluation, data security, transparency, stakeholder participation, and the impact of external factors.

4-7-2 Relationship Between Integrated Core Codes

The macro-level relationships between these codes indicate that the transition to a data-driven culture (as the main goal) requires understanding the role and importance of data and is directly linked to improving resource allocation, planning, and performance evaluation. Achieving this depends on overcoming implementation challenges (cultural, human, technical) and developing data infrastructure and technology and capable human resource management. This entire process is influenced by the structure and interactions of the sports ecosystem and external factors, and its desired outcome will be increased transparency and accountability and improved stakeholder participation.

4-7-3 Final Research Themes

Based on the integrated analysis, six final themes were extracted to answer the research questions:

1. Main Theme 1: The necessity of transitioning to data governance and a data-driven culture in Iranian sports management: Understanding the importance, requirements, and benefits.
2. Main Theme 2: Structural, cultural, and technical challenges in realizing a comprehensive data-driven management system.
3. Main Theme 3: Optimizing resource allocation through data-drivenness: Transitioning from traditional challenges to fairness and efficiency.
4. Sub-Theme 4: Reforming the structure, roles, and interactions of the sports ecosystem to facilitate data-drivenness.
5. Sub-Theme 5: Infrastructural, technological, and human requirements for realizing data-driven management.
6. Sub-Theme 6: Macro context and environment: Impact of environmental factors and the need for a long-term vision in sports.

4-7-4 Comparative Discussion and Analysis of Findings (Similarities and Contradictions Between Groups)

Comparing the views of the four groups reveals interesting patterns of convergence and divergence:

- **Convergence on the Importance of Data, Divergence in Assessing the Current Situation:**
    - **Similarity:** All four groups decisively emphasize the importance and potential positive role of data in improving decision-making, resource allocation, planning, evaluation, and sports performance. This indicates a common ground and relative mental readiness for transformation.
    - **Contradiction:** The assessment of the current state of data utilization varies greatly. NOC managers and some federation managers point to the existence of systems and initial efforts, holding a relatively more optimistic view. In contrast, coaches, and especially athletes, assess the current situation as highly inadequate, believing that the potential of data is not being used, their access to data is limited, and they are not involved in the process. This deep gap between the views of managers and primary stakeholders is a key challenge.

- **Resource Allocation: Shared Concern, Different Perspectives:**
    - **Similarity:** Lack of financial resources and challenges in its allocation are common concerns for all groups, especially federations, coaches, and athletes. All emphasize the need to move towards fairer and indicator-based allocation.
    - **Contradiction:** The main focus of dissatisfaction differs. Federation managers focus more on the imbalance between federations, overall budget limitations, and the impact of external factors. Coaches and athletes emphasize the mismatch between their income and performance, lack of transparency, and lack of fairness in resource distribution within federations. NOC managers, while acknowledging the need for purposefulness, also point to their own resource limitations and the challenge of medal-centricity.
- **Cultural and Human Challenges: Shared Perception:**
    - **Similarity:** All four groups, in one way or another, point to resistance to change, the dominance of traditional culture, and the lack of specialized human resources as major obstacles. Managers (both groups) emphasize organizational resistance and the need for a change in mindset more, while coaches and athletes implicitly point to the inefficiency of some managers and the need for specialists.
    - **Contradiction:** It could perhaps be said that NOC and federation managers have a more structural view of this challenge, while coaches and athletes experience it more at an individual and managerial level.
- **Role of the National Olympic Committee:**
    - **Similarity:** All groups accept the international status and supportive role of the NOC.
    - **Contradiction:** Expectations and evaluations of the NOC's performance differ. NOC managers emphasize their strategic role, international requirements, and their own limitations. Federation managers have greater expectations for support (financial, technical, infrastructural) and complain about medal-centricity or insufficient communication. Coaches and athletes have referred less to the direct role of the NOC and have focused more on the performance of their own federations.
- **Stakeholder Participation:**
    - **Similarity:** The need to use elites and veterans at advisory or managerial levels is acknowledged by federation and NOC managers.
    - **Contradiction:** Views on the direct participation of active athletes and coaches in macro-level decision-making differ. Coaches and athletes demand much greater participation, while some federation managers are hesitant or limit it to the technical domain.

4-8- Conclusion

This chapter presented a comprehensive analysis of stakeholder perspectives on developing a data-driven culture within the Iranian NOC and its affiliated federations. The findings reveal a consensus on the strategic importance of data, yet a significant disparity between this recognition and the current state of

data utilization and data-driven decision-making. Key challenges emerged across cultural, structural, technical, human, and financial domains, with resource allocation being a particularly pervasive concern. While managers acknowledge initial steps, coaches and athletes perceive a substantial gap in practical application and their involvement. The comparative analysis highlighted both shared understandings, such as the need for data-driven resource allocation and overcoming cultural resistance, and critical divergences, especially concerning the adequacy of current systems and the extent of stakeholder participation. These multifaceted findings underscore the complexity of the required transformation and provide a crucial evidence base for the targeted recommendations and action plan developed in the subsequent chapter.

Chapter 5: Conclusion, Recommendations, and Action Plan

5-1- Introduction

This final chapter summarizes key findings from data analysis (Chapter Four), presents conclusions responding to research questions, and formulates practical recommendations and a comprehensive action plan for the "development and implementation of a data-driven culture in the National Olympic Committee of Iran." This chapter has been developed with the aim of providing a practical and evidence-based roadmap for the National Olympic Committee and other key stakeholders in the country's sports to facilitate the transformation towards a learning, accountable, and data-driven organization. Success in implementing the forthcoming action plan requires a codified framework for continuous monitoring, evaluation, and control, which will be discussed further. Also, at the end of this chapter, suggestions for future research and a review of the limitations of this study will be presented.

5-2- Overall Research Conclusion

This research was conducted with the main objective of "designing a comprehensive data-driven management system and developing a data-driven culture in the National Olympic Committee (NOC) of Iran," considering sub-objectives including "identifying processes, overcoming challenges, optimizing resource allocation, and developing management dashboards." The analysis of qualitative and quantitative data collected from four main stakeholder groups (senior managers of the National Olympic Committee, presidents and vice-presidents of national federations, elite coaches, and elite athletes) led to the identification of six final themes that collectively explain the current situation, challenges, and requirements for transitioning to data-driven management in Iranian sports.

Response to the Main Research Question: "What managerial and organizational structures, mechanisms, and processes are needed to establish and institutionalize data governance and a data-driven culture in the National Olympic Committee of Iran, in a way that engages key stakeholders at various organizational levels and ensures their participation?"

The findings of this research indicate that establishing and institutionalizing data governance and a data-driven culture in the National Olympic Committee of Iran requires a multifaceted and integrated approach, which includes the following:

1. **Establishing a central and powerful governance structure:** Forming a "Data Governance and Digital Transformation Steering Council" with representatives from all key stakeholders for policymaking, supervision, creating coordination, and ensuring managerial commitment at the highest level.

2. **Developing and implementing a comprehensive change management and culture development program:** Including targeted and multi-level training to enhance data literacy, change attitudes, and reduce resistance to change, using successful domestic (such as initial dashboard results and Paralympic experience) and global experiences.

3. **Redesigning and optimizing key data-driven processes:** Especially in areas such as resource allocation, talent identification, planning, and performance monitoring, with the active participation of federations and other stakeholders.
4. **Developing and integrating technical and information infrastructure:** Including the completion and expansion of the National Sports Data Management System (NSDMS) and the development of smart and user-friendly management dashboards.
5. **Creating incentive and support mechanisms:** Designing performance evaluation systems and data-based incentives for individuals and units, as well as comprehensive support for coaches and athletes to address their livelihood and status concerns, which can influence the acceptance of change.
6. **Strengthening cooperation and trust in the sports ecosystem:** Improving interactions between the NOC, the Ministry of Sports, and federations, clarifying roles, and creating a platform for the genuine participation of all stakeholders.

Response to Subsidiary Research Questions:

- **Current state of data utilization:** Findings showed that despite general awareness of the importance of data, its practical and systematic use in decision-making processes, resource allocation, and performance evaluation in the National Olympic Committee and federations is still in the early and very limited stages. A significant gap was observed between the views of managers and the experiences of end-users (coaches and athletes) in this regard.
- **Most important challenges and obstacles:** Cultural challenges (resistance to change, traditional decision-making culture), technical challenges (lack of integrated infrastructure, low data quality), structural challenges (lack of inter-institutional coordination, unclear roles), human challenges (lack of data literacy and expertise, livelihood concerns), and financial challenges (budget limitations) were identified as major obstacles.
- **Strategies for promoting a data-driven culture:** Targeted training at various levels, leadership support and role modeling, creating early successes and demonstrating practical benefits, involving stakeholders in the process, using "data champions," and designing incentive systems were suggested.
- **Optimizing key processes:** It was emphasized that processes such as resource allocation, talent identification, and performance monitoring should be redesigned using objective, transparent, and data-based indicators to increase fairness, efficiency, and transparency. Initial results from the designed dashboards also highlighted the necessity of reviewing resource allocation and paying more attention to talent identification.
- **Requirements for management dashboards:** Dashboards should be user-friendly, interactive, understandable, relevant to the needs of decision-makers at various levels, based on accurate and up-to-date data, and provide the ability to analyze trends and identify strengths and weaknesses.
- **Action plan:** A three-phase, intensive action plan (until the end Sept 2028) was developed for the step-by-step implementation of a data-driven culture and management system.

The transition to a data-driven culture and management system is not a choice for the National Olympic Committee of Iran, but a strategic necessity for survival and progress in the arena of modern sports. This transformation, although accompanied by significant challenges, is achievable with leadership commitment, careful planning, comprehensive stakeholder participation, and smart investment in culture, processes, technology, and human resources. Success on this path will not only lead to improved sports performance and optimal resource allocation but can also enhance transparency, accountability, and trust throughout the country's sports ecosystem. The NOC's initial experiences with the Paralympic platform and the results of the initial dashboards indicate the high potential of this approach and a relative readiness to take the next steps.

5-3- Recommendations

Based on the results obtained from analyzing the views of key stakeholders, the initial experiences of the National Olympic Committee, and with the aim of responding to the identified challenges and opportunities in developing a data-driven culture and management system in the National Olympic Committee of Iran, the following recommendations are presented:

A) Recommendations Related to Data Governance, Structure, and Culture Building (Responding to Themes 1, 2, and 4):

1. **Establish a "NOC Data Governance and Digital Transformation Steering Council":**
    - **Explanation:** Form a high-level body consisting of senior NOC managers, representatives of selected federations, data and IT specialists, and representatives of athletes and coaches. This council will be responsible for macro-level policymaking, overseeing process redesign and implementation, developing a data ethics charter, setting standards, and prioritizing future projects, thus guiding the strategic leadership of the data-driven transformation.
    - **Impact:** Creation of a central governance structure, increased managerial commitment, ensuring strategic alignment, and facilitating collaboration among stakeholders.
2. **Develop and Implement a "Comprehensive and Intensive Change Management and Data-Driven Culture Development Program":**
    - **Explanation:** This program should be implemented more rapidly and include three distinct training levels: Level 1 (Leaders and Senior Managers) focusing on data-driven strategic thinking, change management based on internal and global experiences, and data governance fundamentals; Level 2 (Experts and Operational Staff of NOC and Federations) with practical courses on data literacy, redesigned data processes, and tool usage; Level 3 (Elite Coaches and Athletes) offering applied workshops on using data for performance improvement and the importance of their participation.
    - **Impact:** Reduced resistance to change, rapid increase in necessary knowledge and skills, and bridging the awareness gap between managers and end-users.

3. **Expand the "Data Champions" Program:**
    - **Explanation:** Faster identification and empowerment of interested and talented individuals from various NOC and federation units as promoters and facilitators of new processes and data use within their respective units.
    - **Impact:** Accelerated adoption of the new culture from within the organization, creation of a support network, and reduction of the burden on the central IT unit.
4. **Rapidly Design and Implement a "Performance Evaluation and Data-Based Incentive System":**
    - **Explanation:** Define specific Key Performance Indicators (KPIs) for units and individuals regarding participation in process redesign, effective use of data, quality of input data, and participation in data-driven initiatives. Provide rewards and recognition for top units and active individuals in shorter timeframes.
    - **Impact:** Creation of motivation for adopting and using the new system, reinforcement of desired behaviors.

B) Recommendations Related to Technical Infrastructure, Technology, and Data Security (Responding to Themes 2 and 5):

1. **Complete and Integrate the "National Sports Data Management System (NSDMS)" based on Redesigned Processes:**
    - **Explanation:** Building on the initial platform and games data collection, focus on rapidly completing process redesign with active federation participation. Subsequently, develop or adapt the remaining system modules to fully cover these processes, ensuring the NSDMS is integrated, secure, user-friendly, and capable of connecting to various data sources.
    - **Impact:** Consolidation of scattered data based on real processes, increased data accuracy and accessibility.
2. **Continuously Develop and Improve "Smart and Interactive Management Dashboards":**
    - **Explanation:** Using initial dashboard design experiences, these tools should be continuously developed and improved based on user feedback and new decision-making needs (such as an emphasis on talent identification). Customization and tiered access to relevant dashboards should be provided.
    - **Impact:** Facilitation of quick and informed decision-making, improved performance monitoring, and timely identification of trends and needs.
3. **Review and Strengthen Cybersecurity and "Data Privacy and Security Policies":**
    - **Explanation:** With the entry of sensitive information and system development, continuous review and strengthening of security infrastructure, use of up-to-date protocols, and user training on security best practices are essential. Transparent and precise policies regarding data ownership, use, and sharing must be rapidly finalized and communicated.

- **Impact:** Protection of sensitive data, building trust among users.

C) Recommendations Related to Optimizing Resource Allocation and Performance Evaluation (Responding to Theme 3):

1. **Accelerate the Design and Pilot Implementation of a "Resource Allocation Model Based on Performance and Data-Driven Indicators":**
    - **Explanation:** Informed by initial dashboard results highlighting the need for revised resource allocation, rapidly design and pilot a model in selected federations. This model should be based on transparent quantitative and qualitative indicators (including results, potential, talent identification, good governance, and data use).
    - **Impact:** Increased transparency and fairness in resource allocation, encouraging federations to improve actual performance and move towards data-drivenness.
2. **Use NSDMS for a "Continuous Performance Monitoring and Evaluation System" for Federations:**
    - **Explanation:** After the relative completion of NSDMS, its data should be used for regular monitoring of federations' progress against strategic goals and providing continuous feedback to them.
    - **Impact:** Providing a comprehensive view of performance, enabling timely intervention, and strengthening accountability.

D) Recommendations Related to the Macro Context and Sustainable Development (Responding to Theme 6 and Overall Findings):

1. **Faster Utilization of Data Mining for "Creating New Revenue Streams and Developing Commercial Partnerships":**
    - **Explanation:** Given the collected Olympic and Asian Games data and NSDMS's future potential, rapidly explore and pursue opportunities for attracting smart sponsors and developing commercial packages based on data analysis.
    - **Impact:** Reduced dependence on government budgets, increased financial sustainability.
2. **Include "Practical Training on Data Literacy and Working with the New System" in National Olympic Academy Programs and Coaching Courses:**
    - **Explanation:** As a parallel and supportive strategy, rapidly familiarize managers, coaches, and athletes with the basics of working with existing data and the developing system through targeted, ongoing training programs.
    - **Impact:** Institutionalizing a data-driven culture in the long term and training capable human resources.
3. **Continue Studying and Benchmarking "International Success Stories" with a Focus on Rapid and Agile Implementation:**

- **Explanation:** Monitor global innovations and best practices in data use, especially in adapting and rapidly implementing systems in similar sports organizations.
- **Impact:** Keeping the organization's knowledge up-to-date, drawing inspiration from proven solutions to accelerate the process.

5-4- Action Plan **- Condensed Version until End of Shahrivar 1407 SH [~Sep 2028]**

The following action plan aims to implement the presented recommendations and achieve the overarching goals of "expanding a data-driven decision-making culture in the National Olympic Committee of Iran" for the period Mehr 1404 to the end of Shahrivar 1407 SH (Sep 2025 - Sep 2028). Given the initial actions taken, some activities will proceed more rapidly. The subsequent detailed table outlines specific actions, responsibilities, resources, timelines, and key performance indicators. Here, the general outlines of phases and main actions are mentioned:

Phase 1**: Establishing Governance Structure, Redesigning Processes, and Basic Culture Building (Mehr 1404 - Shahrivar 1405 SH [Sep 2025 - Sep 2026])**

This phase focuses on establishing the central governance body, the "Data Governance and Digital Transformation Steering Council," and developing high-level documents such as the data ethics charter. Simultaneously, the comprehensive change management program will commence with workshops for senior managers and federation presidents. Joint working teams will be formed to redesign key processes, and the development or adaptation of initial modules of the National Sports Data Management System (NSDMS) will be based on these processes, utilizing existing Olympic and Asian Games data. The "Data Champions" program will also be launched to facilitate these processes.

Phase 2**: Wide-Scale Implementation, Deep Empowerment, and Initial Value Creation (Mehr 1405 - Esfand 1406 SH [Oct 2026 - March 2028])**

In this phase, the NSDMS with redesigned processes will be extended to all federations and relevant units. Smart management dashboards will be developed and improved based on user feedback. Supplementary and advanced training programs for experts, data champions, coaches, and athletes will be implemented, and a Community of Practice will be formed for sharing experiences. The pilot of the data-driven resource allocation model for the 1407 SH budget will be implemented and its results monitored. Concurrently, cybersecurity infrastructure and privacy policies will be strengthened and updated.

Phase 3**: Full Institutionalization, Advanced Optimization, and Sustainable Development (Farvardin 1407 - Shahrivar 1407 SH [April 2028 - Sep 2028])**

In this phase, the data-driven resource allocation model, after necessary revisions, will be finalized and approved for nationwide implementation for the subsequent budget cycle (e.g., 1408 SH). The complete performance evaluation and data-based incentive system will be implemented for all

units and individuals, and the first awards ceremony will be held by the end of Shahrivar 1407 SH. Data mining revenue generation operations will commence with the identification and execution of one or two initial opportunities. Finally, a comprehensive evaluation of the three-year program's achievements will be conducted, and a roadmap for the continuous development and optimization of the data-driven management system after Shahrivar 1407 SH will be formulated.

The detailed Action Plan table and the corresponding Gantt Chart can be found in the Appendices section of this document.

5-5- Framework for Monitoring, Evaluation, and Control of the Action Plan

Success in implementing the long-term and multifaceted action plan for developing a data-driven culture requires a codified and efficient framework for continuously monitoring progress, accurately evaluating results, and making necessary controls and adjustments along the way. This framework will help the National Olympic Committee ensure the achievement of program objectives, manage resources optimally, and keep the program dynamic and effective by considering feedback and environmental changes.

1. **Responsibility for Monitoring and Evaluation:**

   The primary responsibility for overall supervision of the action plan's implementation and evaluation of its progress will lie with the "Data Governance and Digital Transformation Steering Council." To facilitate this, it is recommended that a "Program Monitoring, Evaluation, and Control Sub-committee (PME Committee)" be formed directly under the Steering Council. This committee could consist of representatives from key units such as the Planning and Strategic Unit, IT Unit, Finance Unit, Training Unit, as well as one or two "Data Champions" or representatives from federations leading in program implementation. The main task of this sub-committee will be the regular collection of data related to program progress, preparation of periodic reports, initial analysis of results and challenges, and presenting them to the Steering Council for appropriate decision-making.

2. **Main Components of the Framework:**

   - **A) Key Performance Indicators (KPIs):**

   As indicated in the action plan, for each main action and for the entire program, a set of specific, measurable, achievable, relevant, and time-bound (SMART) KPIs must be defined in detail at the beginning of each phase, finalized, and approved by the Steering Council. These indicators will be the primary basis for monitoring and evaluation. Examples of general KPIs for the entire program include percentages of trained personnel, increase in data-documented decisions, stakeholder satisfaction levels, process efficiency gains, dashboard usage rates, successful implementation of data-driven resource allocation, revenue from data services, and data quality indices.

- **B) Periodic and Systematic Reporting:**

  Quarterly Progress Reports from action leads to the PME Sub-committee, detailing progress against KPIs, challenges, and corrective actions. Semi-annual and Annual Analytical Reports from the PME Sub-committee to the Steering Council, providing deeper analysis of overall progress, achievement of phase objectives, obstacles, risks, and strategic recommendations.

- **C) Review, Decision-Making, and Control Meetings:**

  Regular Steering Council Meetings to review progress, address key challenges, make decisions on resource allocation or adjustments, and approve program modifications. Annual Review Meetings with Broader Stakeholders to present overall performance, share achievements and challenges, and gather feedback for program improvement, enhancing transparency and participation.

- **D) Independent Mid-term and Final Evaluations:**

  A Comprehensive Mid-term Evaluation (suggested: end of 1406 SH) to assess effectiveness, cultural change, and identify strengths/weaknesses, informing the final phase. A Final Program Evaluation (Azar 1407 SH) to measure overall objective achievement, document lessons learned, and formulate a roadmap for post-1407 SH development.

- **E) Risk, Problem, and Change Management Mechanism:**

  A formal, agile process for proactive identification, recording, analysis, prioritization, and management of risks and problems. The PME Sub-committee can handle initial operational problem resolution, escalating complex issues. A defined change management process for any proposed alterations to program scope, timeline, or resources, requiring Steering Council approval.

3. **Key Milestones for Control and Assurance:**

   Successful achievement of important milestones specified in the action plan will be key indicators of progress. These include: full operationalization of the Steering Council (End of Azar 1404 SH); completion of initial process redesign and NSDMS pilot (End of Azar 1405 SH); NSDMS extension and key dashboard development (End of Esfand 1406 SH); successful pilot of data-driven resource allocation (End of Esfand 1406 SH); nationwide implementation of resource model and incentive system (During 1407 SH); and final evaluation report with future roadmap (Mordad 1407 SH).

Implementing this monitoring, evaluation, and control framework will help the National Olympic Committee of Iran manage the transformation program towards data-drivenness more effectively, prevent deviation from objectives, and strengthen organizational learning throughout this journey.

5-6- Suggestions for Future Research

Given the findings and limitations of this research, the following areas are suggested for future research:

- Investigating the long-term impact of implementing a data-driven culture on the sports performance and medal count of Iran's national teams.
- A comparative study of data governance models in successful National Olympic Committees worldwide, focusing on countries with sports structures similar to Iran.
- Analyzing the role of artificial intelligence and machine learning in optimizing athlete performance and managing sports teams in Iran.
- Investigating factors affecting technology and information system adoption by coaches and athletes in Iran's cultural context.
- Designing and evaluating the effectiveness of specific training programs to increase data literacy among Iranian sports managers.

5-7- Conclusion

This chapter culminates the research by synthesizing key findings and translating them into actionable strategies for the National Olympic Committee of Iran. The transition to a data-driven culture, while acknowledged as a strategic imperative for modern sports governance, is fraught with multifaceted challenges spanning cultural, structural, technical, and human resource domains. The proposed recommendations and a phased action plan provide a concrete roadmap to navigate these complexities, emphasizing strong governance, comprehensive change management, robust infrastructure development, and continuous stakeholder engagement. The framework for monitoring and evaluation is designed to ensure accountability and adaptive management throughout this transformative journey. Ultimately, the successful implementation of these strategies is envisioned not only to enhance the NOC's operational efficiency and competitive performance but also to foster a broader ecosystem of transparency, accountability, and sustained excellence in Iranian sports. The identified avenues for future research further underscore the ongoing nature of this evolution and the continuous learning required in the dynamic field of data-driven sports management.

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Appendices

Program Title: Operational Plan for Expanding a Data-Driven Decision-Making Culture in the National Olympic Committee of Iran (Sep 2025 – Sep 2028)

Priority	Key Recommendation (Related to Proposal No.)	Required Actions (Details)	Lead	Required Resources (Human, Financial, Technical, Time)	Timeline (Start - End)	KPIs / CSFs
Phase 1: Establishing Governance Structure, Redesigning Processes, and Basic Culture Building (Sep 2025 - Sep 2026)						
1	1. Establish Data Steering Council	1.1. Draft bylaws and TOR for the council. 1.2. Identify and invite members (NOC senior managers, federation reps, specialists, athlete/coach reps). 1.3. Hold first official meeting and final approval of bylaws. 1.4. Develop data ethics charter and macro policies by the council (for	Secretary-General of NOC / Planning & Strategic Unit	Human: Legal & planning experts, proposed council members. Time: 3 months. Financial: Cost of initial meetings.	**Sep 2025 - Dec 2025**	- Successful council formation with at least 80% of planned members. - Approval of bylaws and ethics charter. - Creation of detailed process redesign roadmap by council (CSF). - Regular meetings (at least monthly in phase 1).

		overseeing process redesign and policymaking).				
2	2. Implement Change Management Program (Level 1 & start of Level 2)	2.1. Conduct intensive workshops for senior managers & federation presidents focusing on initial results & need for transformation. 2.2. Start basic data literacy & existing platform familiarization courses for selected NOC & federation experts (Group 1). 2.3. Use Paralympic experience as a case study in training.	NOC Training Unit / Steering Council (Oversight)	Human: Experienced trainers, training experts. Time: 9 months. Financial: Cost of workshops. Technical: Existing platform, training space.	**Sep 2025 - Jun 2026**	- High participation of managers & federation presidents. - Training of at least 50 selected experts in basic course. - Increased understanding & acceptance of need for change (survey).
3	5. Complete Process Redesign & Develop NSDMS (Supplementary Phase 1)	3.1. Form joint working teams (NOC & federations) for rapid redesign of key processes (e.g., resource allocation, talent ID, performance management) under Steering Council supervision. 3.2. Adapt & develop NSDMS modules based on redesigned	NOC IT Unit / Steering Council (Oversight)	- Human: Working teams, IT specialists, system analysts, developers. Time: 12 months. Financial: Budget for development & meetings. Technical: Existing	**Dec 2025 - Sep 2026**	- Finalization of redesign for at least 5 key processes approved by Steering Council. - Successful development & deployment of related NSDMS modules. - Active use of pilot system with new processes by at least 5 federations. - Entry of new data based on redesigned processes.

		processes (emphasizing integration of existing Olympic & Asian data). 3.3. Deploy wider NSDMS pilot with new processes in key federations.		platform, collaboration tools.		
4	3. Expand "Data Champions" Program	4.1. Rapidly identify & train a new group of "Data Champions" focusing on pilot federations. 4.2. Empower champions to support colleagues in using NSDMS & new processes.	HR Unit / Training Unit	Human: Training experts, existing data champions. Time: 6 months. Financial: Cost of intensive training. Technical: System access.	**Jan 2026 - Jun 2026**	- Successful training of at least 30 new data champions. - Active role of champions in supporting NSDMS pilot (report).
Phase 2: Wide-Scale Implementation, Deep Empowerment, and Initial Value Creation (Oct 2026 - Mar 2028)						
5	5. Expand NSDMS & 6. Develop Dashboards	5.1. Extend NSDMS with redesigned processes to all federations & relevant units. 5.2. Continuously develop	NOC IT Unit / Development Team	- Human: IT team, developers, data analysts. Time: 18 months. Financial:	**Oct 2026 - Mar 2028**	- All federations using relevant NSDMS modules. - Development & use of at least 10 key & practical dashboards. - 70% reduction in manual

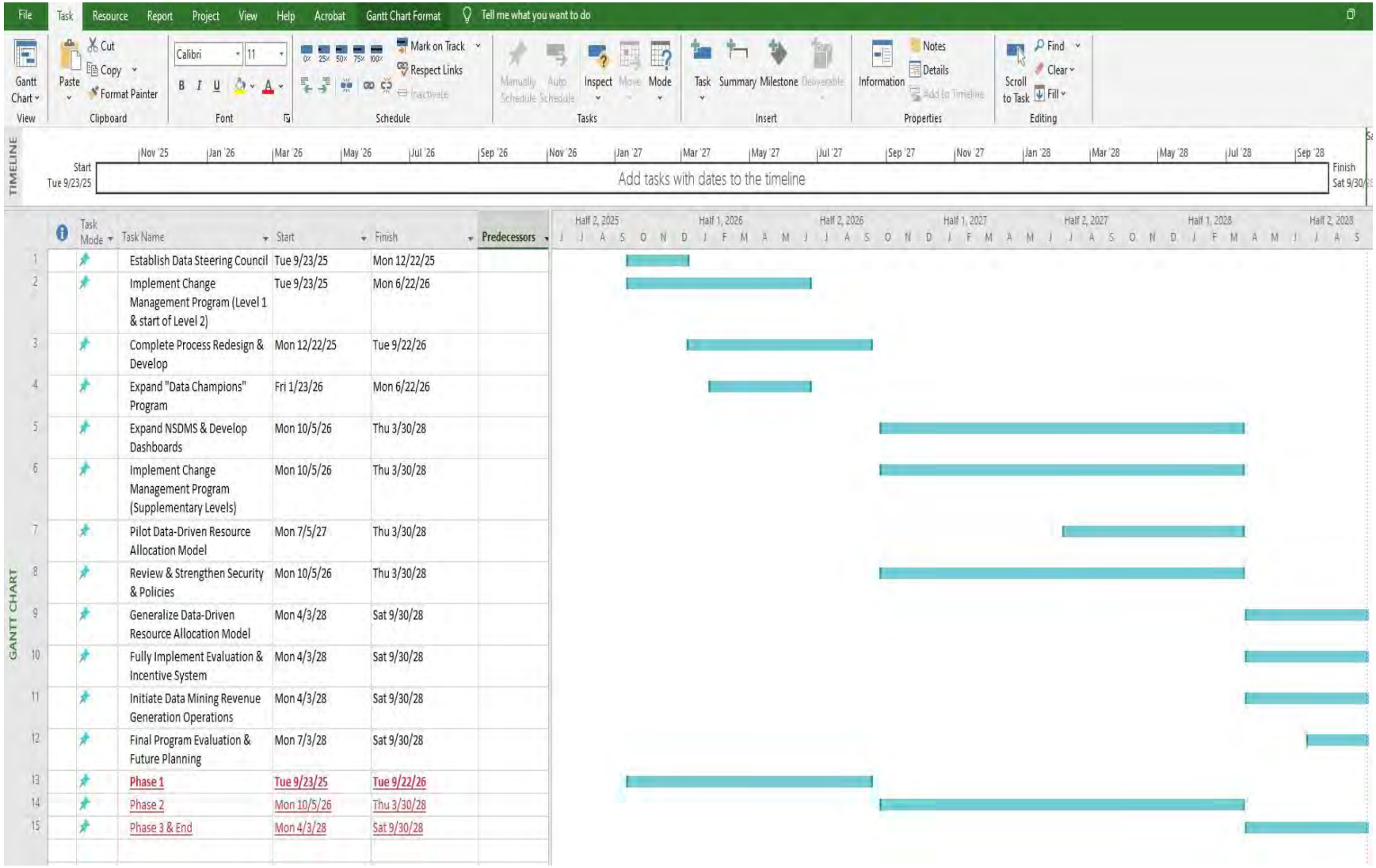
		& improve management dashboards based on user feedback & new needs (e.g., talent ID & dynamic resource allocation dashboards). 5.3. Integrate performance data with financial data for more comprehensive analysis.		Budget for development, support & potential licenses. Technical: Server & network infrastructure, BI tools.		reporting for dashboard-covered indicators. - Identification of at least 3 improvement opportunities in resource allocation via dashboard analysis (CSF).
6	2. Implement Change Management Program (Supplementary Levels)	6.1. Conduct advanced training courses for experts & data champions (data analysis, visualization, data mining basics). 6.2. Conduct continuous & targeted workshops for coaches & athletes based on needs & feedback. 6.3. Create a community of practice for sharing experiences & peer-to-peer learning.	NOC Training Unit / Data Champions / Specialist Trainers	- Human: Trainers, data champions. Time: Continuous throughout phase. Financial: Cost of courses & gatherings. Technical: Training & collaboration platform.	**Oct 2026 - Mar 2028**	- Advanced training for at least 80% of data champions & 50% of key experts. - Active participation in community of practice (number of posts & discussions). - Increased coach & athlete satisfaction with data access & understanding (survey).
7	8. Pilot Data-Driven Resource Allocation Model	7.1. Rapidly finalize & approve "Indicator-Based Resource Allocation Model"	NOC Finance Unit / Steering Council	Human: Finance experts, data analysts, federation reps.	**Jul 2027 - Mar 2028**	- Allocation of budget for at least 5 federations based on new model. - Increased perceived

		using NSDMS data by Steering Council. 7.2. Pilot the model for budget allocation to selected federations. 7.3. Closely monitor pilot results & collect feedback for model generalization.	(Approval & Oversight)	Time: 9 months. Financial: Allocated budget. Technical: NSDMS & related dashboards.		transparency by pilot federations (survey). - Identification of challenges & improvement opportunities for model's nationwide implementation.
8	7. Review & Strengthen Security & Policies	8.1. Conduct periodic security assessments & penetration tests on expanded NSDMS. 8.2. Update & fully implement privacy & data security policies approved by Steering Council. 8.3. Continuously train users on new threats & security practices.	NOC IT Unit / Cybersecurity Consultant	Human: Security specialists, IT experts. Time: Continuous throughout phase. Financial: Security budget. Technical: Security tools.	**Oct 2026 - Mar 2028**	- No security incidents leading to data breach. - Full compliance with security policies by users (periodic audit).
Phase 3: Full Institutionalization, Advanced Optimization, and Sustainable Development (Apr 2028 - Sep 2028)						
9	8. Generalize Data-Driven Resource	9.1. Revise & finalize resource allocation model based on pilot results with Steering	NOC Finance Unit / Steering Council	Human: Finance & budget team. Time: 6 months.	**Apr 2028 - Sep 2028**	- Allocation of budget for all federations based on data-driven model. - Increased general

	Allocation Model	Council approval. 9.2. Implement model nationwide for budget allocation to all federations. 9.3. Establish mechanism for annual model review.	(Approval & Oversight)	Financial: Allocated budget. Technical: NSDMS.		satisfaction of federations with the process (survey). - Meaningful correlation between federation's data-driven performance & received resources (analysis) (CSF).
10	4. Fully Implement Evaluation & Incentive System	10.1. Fully implement "Data-Based Performance Evaluation & Incentive System" for all relevant units & individuals under Steering Council supervision. 10.2. Hold first data-driven excellence awards ceremony by end of Sep 2028.	HR Unit / Steering Council (Oversight)	Human: HR team. Time: 6 months. Financial: Awards budget. Technical: System usage data.	**Apr 2028 - Sep 2028**	- Successful system implementation & award ceremony (by end of Sep 2028). - Significant increase (e.g., 50% from program start) in active NSDMS use. - Improvement in quality indicators of data input into the system (CSF).
11	10. Initiate Data Mining Revenue Generation Operations	11.1. Form special team or outsource to quickly identify & implement one or two initial revenue generation opportunities from data (e.g., analytical reports for sponsors or media) with Steering Council approval.	Resource Development & Marketing Unit / Steering Council (Approval)	Human: Marketing & business analysis specialists. Time: 6 months. Financial: Initial marketing budget. Technical:	**Apr 2028 - Sep 2028**	- At least 2 contracts for information/analytical services signed. - Achievement of at least 20% of initial revenue target (e.g., 2 billion Rials out of your 10 billion Rials draft) in first year of operation (by Sep 2028).

		11.2. Achieve first sustainable revenues from data-driven services.		NSDMS & analytical tools.		
12	Final Program Evaluation & Future Planning	12.1. Conduct comprehensive evaluation of 3-year program achievements based on KPIs by Steering Council & Research Unit. 12.2. Identify remaining challenges & new opportunities (e.g., use of more advanced AI). 12.3. Formulate roadmap for continuous development & optimization of data-driven management system after Sep 2028.	NOC Research & Planning Unit / Steering Council / PME Sub-committee	Human: Research team, senior managers. Time: 3 months. Financial: Evaluation cost. Technical: Program performance data.	**Jul 2028 - Sep 2028**	- Comprehensive final evaluation report & lessons learned presented. - Roadmap for next phase of data-driven development formulated. - Degree of achievement of overall program goals (e.g., % increase in data-driven decisions, satisfaction, transparency per your initial KPIs) (CSF).

Gantt Chart of the Operational Plan for Expanding a Data-Driven Decision-Making Culture in the National Olympic Committee of Iran (1404–End of 1407 SH)



Interview with the President of the Iranian Olympic Weightlifting Federation and an Iranian medalist in various sporting events, as an example.

In the Name of God

We are honored to be in the presence of Mr. Sajjad Anoushiravani, champion of Asia, the Olympics, and the world. President of the Weightlifting Federation. We feel privileged that he has kindly taken the time to allow us to ask a few questions.

In the Name of God

Well, I am Sajjad Anoushiravani — a servant of the sports community, especially of weightlifting in the country. I am the President of the Weightlifting Federation, former Director General of the Sports and Youth Organization of Ardabil Province, a member of the faculty at Mohaghegh Ardabili University, holder of a Ph.D. in Exercise Physiology, former head coach of the national team, and, by God's grace, an Olympic and World Championships medalist as well as an Asian Games medalist. I'm here to serve you.

Excellent. We are honored to have you with us. We won't take much of your time. Let me get straight to the point. How does the process of resource allocation work within your federation? By resources, I mean financial, human, facilities, equipment, etc. And along this path, what challenges and strengths do you face?

Well, first of all, funding that comes from the National Olympic Committee or the Ministry of Sports is targeted and predefined. It's out of our control. As someone who needs to manage this organization, I have no influence over those figures. Unless it's money generated locally through revenue or sponsorship, which becomes our own income, then we can use that income to cover some expenses ourselves through our own management.

What I've always been concerned about and questioned is exactly this: when you want to do something through software, yes, operationally and practically, it may take away some authority from a manager, but in my opinion, to truly achieve a unified approach to managing resource distribution across the country, it's very important that all the sources and expenditures of the federations are recorded and accounted for.

Let me give an example. My federation is one that has high potential for winning medals at the Olympics and Asian Games, so it's considered a top priority by the National Olympic Committee. But now, if we look at the income of different federations, there's a huge gap. For instance, my federation might receive around 30 billion Rials through sponsors, while another federation gets 300 billion, and yet another gets 100 billion. When distributing government aid or support from the committee, we don’t consider these differences at all. Or, we never consider how certain sports generate hundreds of millions of Rials in monthly revenue from fees, while others generate nothing.

But when allocating public funds, we treat both types of sports equally. Even though one sport isn’t Olympic-related and doesn’t help the committee or the ministry achieve their goals of producing champions, while my sport does. Still, my sport ends up being treated unfairly in resource allocation, while the other sport keeps getting richer and richer.

We cannot estimate the overflow effect of the support we give — for example, a sport that receives two billion Rials from the local office, plus its own revenue, versus a sport that hasn't even received 200 million Rials. In the end, they're expected to perform equally. So weightlifting, which receives little support, is competing against a sport that isn't even Olympic-bound or competitive internationally, yet generates billions in income.

If we continue like this, weightlifting will gradually disappear from the country due to imbalance in resource distribution and lack of real policy oversight from the National Olympic Committee and the Ministry of Sports. Our gyms are slowly closing down because of lack of maintenance and infrastructure investment. Yet, we still expect great results from weightlifting — like winning two gold medals at the Olympics, as we did in Sydney. But we've stripped away all the elements that once made weightlifting successful — the ones that brought results in Sydney, London 2012, and Rio. Meanwhile, another sport with no Olympic representation is thriving financially across provinces, literally swimming in money.

Interestingly, the president of a federation that aligns with the main policies of the Ministry and the Committee always seems to be begging, constantly challenging the Ministry and the Committee for more support. Meanwhile, the president of a wealthy federation with revenues in the tens of billions sits comfortably, feet on the table, criticizing the Ministry and the Committee.

These are the missing links in the resource management system of the Ministry and the Committee, and among the federations themselves.

As someone experienced, as a former champion, and as someone who has gone through the ranks as an athlete, coach, and manager, I admit that we sometimes enjoy chaos. But I believe there must be order. What kind of order? The kind where instructions are clear — for example, "Mr. Anoushiravani, this money is given to you for this purpose; use it accordingly." Or the Ministry tells the provincial offices, "I gave you this money because I identified these issues in your province; you must address this specific problem in this city".

Managers need clear directives. In our sports system, managers often don't know exactly what they're supposed to do. There's a general policy at the top, set by people with years of experience, who have participated in multiple Olympics and Asian Games and worked with delegations. They are good senior managers. However, there's no oversight or proper management when it comes to meaningfully distributing aid and targeting resources. This is the big problem facing these federations and sports in general in our country.

Do you have a data system in your federation to collect and analyze data? Because when you search online, you get 2000 pieces of information, most of which aren't useful. But having actual data and management dashboards would really help you make better decisions. Yes, we have done this in several areas. We have a 120-point evaluation criteria for our provinces — something I think not every federation has. When I took over the federation, this evaluation had only five or six points. Now it has 120, including negative scoring for provinces — for example, if a province has doping cases, or ethical violations involving athletes or coaches.

Secondly, we evaluate each province's performance throughout the year during annual meetings. We assess whether they held competitions on time, how many domestic events they organized, whether they hosted friendly matches, cultural activities, etc.

Another topic is our national teams. We've changed the way we prepare them. Under the best possible conditions — even better than international standards — we prepare our national teams for competitions. Our training camps are ideal, our food and supplements are under medical supervision, our nutrition and weight control are monitored by doctors, injuries are handled by a full medical team. We've established a full-body conditioning program, regular pool sessions, and physiotherapy services. We keep detailed digital records of all medical and training data, and we also conduct research based on this data.

Also, we give special attention to our champions, veterans, and internal events. Our federation organizes regular domestic competitions every year, and we've added new events like CrossFit alongside weightlifting to diversify training methods. Interestingly, nearly 800 people joined CrossFit programs in 2024, learned basic skills, became interested, and transitioned into weightlifting — helping us achieve our goals.

May I ask another question, since you've already covered many points and we're very grateful for your time?

How would you evaluate the support provided by the Olympic Committee to your federation? And generally, what steps could improve the relationship between the Olympic Committee and your federation to ensure fairer resource allocation?

Well, the National Olympic Committee definitely does a lot for sports in this country, but I believe the government doesn't provide enough funding to the Committee in the first place. Supporting federations isn't even mentioned in the Committee's official charter, yet it still allocates part of its limited budget to federations. However, in my opinion, this amount is very small — maybe 15% to 20% of my federation's total budget — and therefore, it doesn't make a significant impact.

In my view, the Committee should cover at least 50% of the costs. The National Olympic Committee should create academic conditions for all sports — in terms of equipment and infrastructure. It should provide standardized equipment for all sports nationwide. It should develop long-term, four-year strategic plans from one Olympics to the next, identifying weaknesses, strengths, and chances of success for each sport, and focus support accordingly. It should guide federation presidents to schedule training camps properly, change coaches when needed, etc. — meaningful interventions.

One thing the Committee does well is organizing participation in the Olympics and Asian Games. On that front, I think the Committee performs well. But in other areas, in my opinion, its performance doesn't meet the expectations of a true National Olympic Committee.

The fault isn't with the president or the secretary — the root cause lies in the country's overall sports policy. The National Olympic Committee should be viewed much more broadly. For example, there should be five major stadiums like Azadi Stadium located strategically across the country — in different climates and with strong infrastructure — so that various sports can hold training camps throughout the year. A winter sport should train in colder regions for six months, and summer sports should move to southern areas. This widespread distribution of training locations would help promote elite sports, increase visibility, spark interest among families and youth, and ultimately grow the sport.

Also, in my opinion, many half-finished projects of the Ministry of Sports should either be stopped or reorganized. There needs to be a political shift so that the Ministry focuses on meaningful projects for

developing mass and elite sports — projects whose needs have already been identified but remain unimplemented due to economic constraints.

This is also a shared challenge between the National Olympic Committee and the Ministry of Sports.

Very well. What do you think is the most important factor that could help you achieve your higher organizational goals for your federation?

To answer that, I'd say achieving these lofty goals requires strong support behind ideas and plans. Believe me, except for Azadi Stadium, we don't have any international-standard complexes in the entire country that can offer comprehensive support. Effective management happens when you have all the tools — infrastructure, hardware, software — and when your organization is financially stable and capable of timely implementation of policies set by the Committee and the Ministry.

Everyone involved in decision-making for sports knows there's a problem. You yourself were once a champion of Asia, the world, and the Olympics. So let me just ask one final question: Is there a process in place to involve elite athletes in the federation's management process?

Bravo! I think we are perhaps the only federation that actually involves our elites and champions directly within the federation. In terms of hiring, especially regarding the government regulation on employing champions, our federation is among the most successful and united. Almost all champions holding positions in the federation are actively contributing — taking on responsibilities. That's excellent accountability.

Lastly, do you have any final suggestions for improving the overall performance of federations?

In my opinion, for federations to achieve optimal performance, three things are essential:

1 .Provide real and sufficient infrastructure tailored to each federation's needs.

2 .Carefully plan and target every detail of their programs, clearly defining the level of government support and what the federation itself must do.

3 .Develop a large-scale statistical framework that outlines the federation's planning from one Olympics to the next, aligned with the policies of the National Olympic Committee and the Ministry of Sports. Long-term tracking of these statistics is crucial, and a four-year cycle is reasonable for identifying talent, training, and achieving Olympic-level results.

Unfortunately, most federations act in isolation, without coordination or unified planning. Without smart leadership, these federations struggle to survive despite receiving support .

Thank you very much for your time. We deeply appreciate your insights.