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“Enhancing ITTF Member Association Categorization: Improving Accuracy and Efficiency”

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2 Abstract

This study aims to improve the International Table Tennis Federation (ITTF) Member Associations Categorization Tool to better reflect the current status and needs of MAs worldwide. Recognizing the limitations of the existing edition of the tool in evaluating only in-house data including outdated assessment indicators, the ITTF faces challenges in categorizing its member associations due to the diverse development levels and regional disparities among them. Ensuring equitable resource allocation is complicated by rapidly changing conditions and the need for up-to-date, accurate data.

When it comes to sports organization classification and assessment, there is much literature in this field. However, many researchers have demonstrated that collecting updated data from national sports federations is crucial for governing sports organizations to evaluate performance, plan strategically, allocate resources efficiently, and identify and develop talent. Therefore, to place this research in a scientific context we leveraged data collected from sports organizations, which in turn can support the ITTF in making informed decisions and drive sport development at both national and international levels. This leads to three data analysis techniques

- 1- Benchmarking of ASOIF Fifth review of IFs governance
- 2- Descriptive analysis of the ITTF Development Questionnaire
- 3- SWOT Analysis of the previous editions of the ITTF MAs Categorization tool

The fifth review of ASOIF for IFs governance was used as a benchmark for our study, particularly in determining the most efficient approaches to evaluate the external data obtained from 115 NFs through the online questionnaire. This data was then utilized to improve the thoroughness of the assessment for each national federation, addressing shortcomings found in previous categorization methods that relied solely on internal data. The examination of the previous editions of the tools ultimately allowed for improvements to the categorization tool's indicators, so assuring a more objective and up-to-date assessment of national federations.

The obtained data and outcomes are transformed into three practical actions through the Develop - Design - Implement cycle.

Develop additional criteria and indicators for the 2025 recommended categorization tool. These include Criteria E, which evaluates the national performance of the NFs, Criteria D2, which assesses the international relations of the NFs through their participation in ITTF summits, and Criteria D3, which reflects the social contribution of the NFs to the community through their involvement in World Table Tennis Day. In addition, it is proposed to provide a new indication in the match officials area to evaluate the top-tier match officials in each National Federation (NF).

Design the Revised Categorization Tool for 2025 by updating the existing criteria and incorporating new criteria into a single system that enhances the assessment of ITTF MAs.

Implement the 5 steps action plan and procedures to introduce and utilize the new edition of the ITTF MA Categorization Tool in 2025.

3 Résumé

Cette étude vise à améliorer l'outil de catégorisation des associations membres de la Fédération Internationale de Tennis de Table (ITTF) afin de mieux refléter l'état actuel et les besoins des MAs à travers le monde. Reconnaissant les limitations de l'édition actuelle de l'outil qui se base uniquement sur des données internes incluant des indicateurs d'évaluation obsolètes, l'ITTF fait face à des défis dans la catégorisation de ses associations membres en raison des niveaux de développement diversifiés et des disparités régionales entre elles. Assurer une allocation équitable des ressources est compliquée par des conditions changeantes rapidement et la nécessité de données précises et à jour.

En ce qui concerne la classification et l'évaluation des organisations sportives, il existe une abondante littérature dans ce domaine. Cependant, de nombreux chercheurs ont démontré que la collecte de données actualisées auprès des fédérations sportives nationales est cruciale pour les organisations sportives afin d'évaluer la performance, de planifier stratégiquement, d'allouer efficacement les ressources, et d'identifier et de développer les talents. Ainsi, pour placer cette recherche dans un contexte scientifique, nous avons exploité les données collectées auprès des organisations sportives, ce qui peut à son tour soutenir l'ITTF dans la prise de décisions éclairées et promouvoir le développement du sport tant au niveau national qu'international. Cela conduit à trois techniques d'analyse des données:

1. Le benchmarking de la cinquième revue de la gouvernance des Fédérations Internationales par l'ASOIF
2. L'analyse descriptive du Questionnaire de Développement de l'ITTF
3. L'analyse SWOT des éditions précédentes de l'outil de catégorisation des associations membres de l'ITTF

La cinquième revue de l'ASOIF pour la gouvernance des Fédérations Internationales a été utilisée comme référence pour notre étude, notamment pour déterminer les approches les plus efficaces pour évaluer les données externes obtenues auprès de 115 NF à travers le questionnaire en ligne. Ces données ont ensuite été utilisées pour améliorer la rigueur de l'évaluation de chaque fédération nationale, corrigeant ainsi les lacunes des méthodes de catégorisation précédentes qui reposaient uniquement sur des données internes. L'examen des éditions précédentes des outils a permis finalement d'améliorer les indicateurs de l'outil de catégorisation, assurant ainsi une évaluation plus objective et actualisée des fédérations nationales.

Les données et résultats obtenus sont transformés en trois actions pratiques à travers le cycle de Développement - Conception - Mise en œuvre.

Développer des critères et indicateurs supplémentaires pour l'outil de catégorisation recommandé pour 2025. Cela inclut le Critère E, qui évalue la performance nationale des NF, le Critère D2, qui évalue les relations internationales des NF à travers leur participation aux sommets de l'ITTF, et le Critère D3, qui reflète la contribution sociale des NF à la communauté à travers leur participation à la Journée Mondiale du Tennis de Table. De plus, il est proposé de fournir une nouvelle indication dans le domaine des arbitres pour évaluer les arbitres de haut niveau de chaque NF.

Concevoir l'Outil de Catégorisation Révisé pour 2025 en mettant à jour les critères existants et en incorporant de nouveaux critères dans un système unique qui améliore l'évaluation des associations membres de l'ITTF.

Mettre en œuvre le plan d'action en cinq étapes et les procédures pour introduire et utiliser la nouvelle édition de l'Outil de Catégorisation des Associations Membres de l'ITTF en 2025

4 Introduction

The International Table Tennis Federation (ITTF) plays a pivotal role in governing and promoting table tennis globally. A crucial aspect of its governance is the categorization of its Member Associations (MAs), a process that ensures equitable resource allocation, strategic planning, and overall development of the sport. However, the existing categorization tool faces significant challenges. Primarily reliant on in-house data and outdated assessment indicators, the tool struggles to accurately reflect the diverse development levels and regional disparities among MAs. Consequently, there is an urgent need for an improved categorization mechanism that leverages up-to-date, comprehensive data to better represent the current status and needs of MAs worldwide.

4.1 Rationale for the study

Effective governance of sports organizations hinges on accurate, current data from national sports federations. Such data is essential for evaluating performance, strategic planning, efficient resource allocation, and talent identification and development. Extensive literature underscores the importance of updated data collection in the classification and assessment of sports organizations. This study is grounded in this context, aiming to enhance the ITTF Member Associations Categorization Tool by incorporating data collected from sports organizations globally. This refined tool will support the ITTF in making informed decisions, thereby driving the development of table tennis at both national and international levels.

5 Review of Existence Evidence

5.1 Key trends

The increasing number of stakeholders with an interest in sport organizations' activities, all with their own expectations, has generated an impressive corpus of governance frameworks.

Data analysis plays a crucial role in the operations of national sport federations (NSFS). With the increasing importance of data-driven decision-making, it becomes essential for sports organizations to leverage data analysis techniques to enhance performance, optimize resource allocation, and drive overall strategic success.

5.2 Short overview of the structure of this review

The review will include a comprehensive examination of data collection methods as well as various approaches to categorizing and analyzing the collected data.

The subsequent items are discussed.

- Types of professionalization and organizational designs of Swiss national sport federations,
- Types and preferences of service innovation within regional sport federations in Belgium.

5.3 Theoretical model of categorization

Ruoranen et al. (2016) constructed the theoretical model of professionalization by synthesizing information from several sources, including the following:

- 1- literature reviews,
- 2- sport sociology,
- 3- management literature
- 4- interviews with Swiss sport professionals.

Ruoranen et al. (2016) framework in figure 1 incorporates three elements identified by Bayle and Robinson (2007), Legay (2001), and Nagel et al. (2015), including the professionalization of strategies and activities, structures, and people and positions. It is useful for studying the organizational structures of National Sport Federations (NSFs) and identifying different forms of professionalization.



Source: Ruoranen *et al.* (2016)

Figure 1. Ruoranen et al. (2016) framework to analyze forms of professionalization in sport federations.

5.4 Types of Professionalization in Swiss National Sport Federations (NSFs)

Lang, G., Schlesinger, T., Lamprecht, M., Ruoranen, K., Klenk, C., Bayle, E., Clausen, J., Giauque, D. and Nagel, S. (2018), "Types of professionalization: Understanding contemporary organizational designs of Swiss national sport federations" study aims to identify types of professionalization in Swiss NSF's by applying hierarchical cluster analysis to all Swiss NSF's. It examines professionalization types in Swiss National Sport Federations (NSFs) using Nagel et al.'s (2015) multi-level model of professionalization, which measures the following:

- 1- Size of NSF
- 2- Financial resources,
- 3- Olympic status.

It also investigates how these types differ from NSF's organizational characteristics, using performance measurements to understand their consequences.

Every six years, the Swiss Olympic Committee collects statistical data from its National Sports Federations (NSFs), to gain insight into sport participation and performance in the country. These data are then combined in the study with a comprehensive online survey, as done from January to April 2016, among a sample of 69 NSF's (92%) to collect data on their professionalization, with the objective to gather information about the structure sizes, services provided and staff of sports clubs and National Sports Federations (NSFs).

The study considered the six potential orientations of NSF's mentioned in the conceptual framework of Ruoronen et al. (2016) (see table 1)

Strategies	Activities	Structures	Processes	People	Positions
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Table 1. Ruoronen et al. (2016) six potential orientations

5.4.1 Method of Data Collection in the Swiss NSF's study

The strategic orientations of the NSF's were estimated by the directors of NSF, using a five-point Likert scale with 19 items (see figure 2).

The analysis of the structure and processes dimension of the NSF's was conducted in a similar manner to previous studies (e.g., May et al., 2013; Nichols and James, 2008). This involved using 14 items and a three-point scale to assess the presence of specific instruments and documents within the organization. These 14 items were developed based on theoretical considerations and previous research on formalization in sport organizations (e.g., Nichols and James, 2008).

The professionalization of people and positions were measured by determining the number of voluntary and paid staff managing the NSF both off and on the field. Twelve positions were defined precisely to optimize comparability. Respondents were asked to indicate the number of employees per position and the percentage by position of paid staff in a formula off the field (management board, executive office, and commissions) and on the field (coaches, supporting staff), which was used to calculate the number of full-time equivalents.

The study utilized cluster analysis to examine the organizational characteristics of National Sports Federations (NSF's) based on the results of an online survey and the Swiss Olympic Committee's current performance classification, which determines funding allocation to each NF based on the following:

- The success of elite and young athletes in national and international competitions.
- The presence of a development concept for young athletes.
- The economic significance of the sport.
- National popularity among both participants and spectators.

5.4.2 Categorization of the data collected into Clusters

The study conducted an exploratory factor analysis (EFA) using principal component analysis (PCA) and varimax rotation to identify appropriate cluster variables. The Kaiser-Meyer-Olkin measure (KMO) indicated high sampling adequacy for the strategies and activities dimension and structures and processes dimension. Factors such as growth orientation, and service orientation were identified to measure professionalization of strategies and activities, and factors such as formalization of strategy, marketing, communication, and HRM were identified to measure professionalization of structures and processes of NSF's. Three cluster from variables emerged: the absolute number of paid staff off the field, the proportion of paid staff on the field, and the proportion of voluntary staff, and are used to measure the professionalization of people and position (see Table 2).

Cluster variable	Item	Factor loading ^a	Corrected item-total correlation
<i>Professionalization of strategies and activities</i>			
	How important is it for your federation in the near future to... ^b		
Growth orientation ($\alpha = 0.62$)	...generate more sponsorship funds?	0.83	0.60
	...gain new members?	0.66	0.32
	...achieve more earnings?	0.64	0.48
Service orientation ($\alpha = 0.72$)	...optimize the federation's processes?	0.87	0.72
	...professionalize the federation and its services?	0.72	0.49
	...optimize the federation's structures?	0.70	0.47
	...be a service provider for the member organizations?	0.64	0.37
Excluded items	...improve strategic planning		
	...improve data management (member data/results of competitions)		
	...adapt the NSF's services to supply and demand		
	...improve employees' collaboration within the NSF		
	...improve employees' qualifications in the NSF		
	...reduce expenses or introduce economy measures		
	...raise membership fees		
	...broaden the existing sport program		
	...make the existing sport program more attractive		
	...promote sport programs for non-members		
	...bring in external knowledge		
	...generate new ideas for the management of the NSF		
<i>Professionalization of structures and processes</i>			
	Do the following instruments/documents exist in your federation? ^c		
Formalization of strategy ($\alpha = 0.71$)	Mission statement	0.75	0.52
	Strategy	0.74	0.53
	Multi-annual planning	0.71	0.56
	Controlling instrument	0.47	0.41
Formalization of marketing and communication ($\alpha = 0.69$)	Communication concept	0.72	0.58
	In-house communication tool	0.65	0.50
	Concept of member support	0.65	0.37
	Marketing concept	0.63	0.44
Formalization of HRM ($\alpha = 0.74$)	Job descriptions	0.84	0.60
	Staff regulations	0.78	0.59
	Remuneration regulations	0.63	0.32
	Contracts of employment	0.45	0.63
Excluded items	Organigram		
	Concept for voluntary staff		
<i>Professionalization of people and positions</i>			
Absolute number of paid staff off the field	Sum of paid staff off the field		
Proportion of paid staff on the field	Number of paid staff on the field divided by the sum of paid staff off and on the field		
Proportion of voluntary staff	Number of voluntary staff (off and on the field) divided by the sum of voluntary and paid staff (off and on the field)		
Notes: ^a Only factor loadings above 0.40 were considered; ^b Scale: 1 (very unimportant) to 5 (very important); ^c Scale: 1 (no), 2 (partly), 3 (yes)			

Table 2. Measurement and descriptive statistics of cluster variables

5.5 Data Analysis of Belgium Sport Federations

When it comes to Data Analysis in governing sports organizations, many studies have been made in the field, such as Winand, M., Scheerder, J., Vos, S. B., & Zintz, T. (2016) Study, which examines the innovation

patterns within sport federations in Belgium, focusing on the types and preferences of innovation. An online survey was sent to 144 regional sport federations in Belgium, in 2016, to evaluate the number and type of new service innovations they implemented.

The online questionnaire consisted of four main items, which assessed attitudes towards newness:

- 1- Rating for the form of new services using four items on a Likert scale.

Items in this part of the questionnaire were adopted from Damanpour and Schneider (2006) and Frambach and Schillewaert (2002), which measures the level of accountability of national federations towards the suggestions made by their sports clubs and whether they satisfy the expectations of their members. It also assesses the financial investment made to develop new services for the members.

- 2- list of services discussing initiatives implemented by their sport federation

The list of services was adapted from Piéron and De Knop (2000) and Zintz and Winand (2013), who highlighted sport federations' main missions and activities, such as Sport for Development, events management, match officials training, high performance and talent identification activities, additionally, it also includes, communication, equipment and facilities management.

- 3- A questionnaire asked participants on a Likert scale (1 = completely disagree to 5 = completely agree) whether they considered their sport federation is innovative, and whether it provides innovative services.
- 4- Membership size Data collected from public authorities.

Winand, M., Scheerder, J., Vos, S. B., & Zintz, T. (2016) Study measures sport federations' innovativeness by calculating the percentage of respondents who agree their federation is innovative. Service innovations mentioned were filtered between 2006 and 2010, and their descriptions were analyzed using direct content analysis. Initial categories were reworded and new categories were created. Average scores were calculated to determine the extent of innovation and type of service innovation.

A sample representation was used in the study, where 101 representatives of the different sport federations participated in the survey, which accounts for a response rate of 70%. A factor analysis and Cronbach's alpha were used to identify differences between categories, and ANOVA was applied to identify differences in innovation types.

The survey findings indicated that 55% of the participants expressed their belief that their sport federation demonstrated innovativeness, while an equal percentage of respondents reported receiving innovative services from their sport federation. During the four-year period leading up to the poll, a total of 101 sporting federations introduced 458 new services. The range of service improvements varied from 0 to 15, with an average of 4.53. Sport federations have incorporated a greater number of non-sport innovations compared to sport innovations. Table 3 displays the distribution of service innovations.

Number of innovations	0	1–3	4–6	7–9	10+	Mean (SD)
Sport innovations	25.74%	58.42%	13.86%	1.98%	0.00%	1.78 (1.74)
Non-sport innovations	17.82%	46.53%	28.71%	6.93%	0.00%	2.75 (2.16)
Total innovations	12.87%	28.71%	32.67%	17.82%	7.92%	4.53 (3.32)

Note: SD: Standard deviations are in brackets; $N = 101$.

Table 3. Percentage of sport federations implementing service innovations.

5.5.1 Data Analysis outcomes

A positive attitude towards newness promotes knowledge creation and innovativeness, and the online questionnaire reveals that National Sport Federations (NPSOs) in Belgium innovate, with different types of service innovation implemented and preferences influenced by organizational characteristics. We can also notice that membership size and Olympic features impact specific types of innovation. However, the study lacks information on innovation origins and scale. The study gave the same weight score to each type of innovative initiative, Sport and non-sport type, as shown in table 4, which displays 101 sport federations' implementation of ten service innovations, including four sport and six non-sport types, with information on average number and percentage of each type. The study also lacks to include a metric for assessing the effects of the various initiatives, examining the significant results and the specific influence of each initiative on the corresponding National Federation. As suggested by Bierly et al. (2009), Cohen and Levinthal (1990), and the present study, sport federations might prefer to innovate in their knowledge comfort zone which could shape a vicious circle that for its part prevents them from developing radical innovations.

	Mean (SD)	Min 1 (%)	Definition/examples
<i>Sport innovations</i>	<i>1.78 (1.74)</i>	<i>74.26</i>	
Sport for all activities	0.57 (0.94)	34.65	Activities for all affiliated members, including disabled and cross generation sport activities.
Youth sport leisure activities	0.52 (0.82)	36.63	Leisure sport activities for under 18 years old.
Competitive sport events	0.38 (0.76)	26.73	League cup, championships, tournaments and opens.
Adults sport leisure activities	0.31 (0.58)	24.75	Leisure sport activities for adults
<i>Non-sport innovations</i>	<i>2.75 (2.16)</i>	<i>82.18</i>	
Training programmes	0.72 (0.88)	47.52	Training programmes for coaches, officials or referees
Elite sport services	0.60 (0.96)	36.63	Talent identification systems, elite sport support services
Online services	0.57 (0.57)	50.50	Websites, web platforms, online membership administration.
Sport promotion	0.44 (0.70)	33.66	Magazines, newsletters
Club management support	0.25 (0.54)	19.80	Quality labels for clubs, club management and networking support
Sport equipment services	0.17 (0.43)	14.85	Equipment leasing schemes, sport club equipment group purchase services
<i>Total innovations (4y period)</i>	<i>4.53 (3.32)</i>	<i>87.13</i>	

Note: SD: Standard deviations are in brackets; $N = 101$.

Table 4. Types of service innovation in sport federations

5.6 Conclusion from existing evidence

Many researches proved that collected updated data from national sport federations is of utmost importance for governing sport organizations to evaluate performance, plan strategically, allocate resources efficiently, identify and develop talent, monitor compliance, benchmark internationally, and evaluate programs and policies.

By leveraging this data, Governing sport organizations can make informed decisions and drive the development of sport to achieve optimal results at national and international levels.

For example, Ruoranen et al. (2016) professionalization conceptualization study helps identify types of professionalization by analyzing organizational characteristics. The results shows the strategies and activities dimension is less useful for distinguishing professionalization in National Sports Federations (NSFs) than structures and processes or people and positions. This approximation may be related to the theory of institutional isomorphism (DiMaggio and Powell, 1983).

Winand, M., Scheerder, J., Vos, S. B., & Zintz, T. (2016) Study and the online questionnaire reveals that National Sport Federations (NPSOs) in Belgium innovate, with different types of service innovation implemented and preferences influenced by organizational characteristics.

Membership size and Olympic features impact specific types of innovation. It also helps in exploring the relationship between innovation and performance in non-profit organizations, as mentioned by Smith and Tushman (2005) and Damanpour et al. (2009), in the context of non-profit organizations.

In particular, do streams of innovation lead to high performance? Examining the correlation between innovation streams and high performance. The employed methodology facilitates the assessment of various sorts of service innovation by evaluating performance based on factors such as member satisfaction, quality improvements, attraction, and growth in membership

6 Field review

6.1 Introduction

The ITTF Member Association (MA) Categorization was introduced in 2018 as part of the ITTF Strategic Plan 2021-2024. Its main purpose is to establish a fair and objective method for allocating Continental Development funding to the Continents. This categorization considers various factors such as the areas covered and the programs offered by each continent. The Categorization is a dynamic and continuously developing model that the ITTF regularly assesses and revises every two years. The process is a complex undertaking, particularly due to the involvement of 227 Member Associations, each with their distinct situations, needs, and realities.

6.2 ITTF Member Association Categorization Tool 2018 edition

In the first edition of the Categorization Tool in 2018, only in-house data was used, and 3 main evaluation criteria were considered,

A. Technical Criteria

Reflects the player participation in senior, youth, and Para Table Tennis sanctioned events as well as players on the World Ranking List. Additionally, it also reflects on the match officials with the indication of the number of certified International Umpires.

B. Demographics

Reflects the segmentation of the ITTF Member Association (countries and territories) by population, and the Human Development Index (HDI), which is compiled by the United Nations Development Program (UNDP), and considers the health, education, and income in a given country to provide a measure of human development which is comparable between countries and over time.

C. Membership

Refers to the number of years as an ITTF Membership

The ITTF Member Associations went through evaluation based on predetermined criteria and were subsequently classified into four distinct categories: Category 1, Category 2, Category 3, and Category 4. Category 1 represents the most active Member Associations, while Category 4 represents the least active ones.

To assess the effectiveness of the tool utilized in 2018, we conducted a SWOT analysis of the 2018 ITTF MA Categorization Tool (refer to Table 5).

	Strengths	Weaknesses
Internal	<ul style="list-style-type: none">- Reliable and trusted criteria have been implemented by utilizing internal data sources of the ITTF.- The criteria were measurable, objective, and encompassed significant technical and demographic categories.	<ul style="list-style-type: none">- The calculation failed to distinguish between fully inactive Member Associations and those that are marginally active but striving for growth.- The gender aspect wasn't considered in the technical criteria evaluations.- This iteration of the tool exclusively relied on internal data and omitted several major areas.

External	Opportunities	Threats
	<ul style="list-style-type: none"> - By assigning weighted scores to a subset of the criteria, one can distinguish them based on the relative significance of every area. - Differentiating the scoring system so that marginally active Member Associations (MAs) are rewarded more than the completely inactive MAs. - Learn from other categorization systems of other sports organizations. 	<ul style="list-style-type: none"> - Incorporating external data obtained from MAs into the categorization tool is entirely reliant on the MAs Representatives who report to ITTF; there is no efficient way to validate the accuracy of such information. - It is advisable to regularly update the tool every two years. - The tool's sole purpose was to assist ITTF with the funding for each MA, so the tool did not provide guidance to MAs on how to develop specific areas based on their category and current state.

Table 5. SWOT Analysis 2018 ITTF MA Categorization Tool

6.3 ITTF Member Association Categorization Tool 2020 Edition

Considering the biennial updating and ongoing pursuit of enrichment of the MA Categorization, ITTF implemented essential novelties in the most recent iteration in 2020. The first visible change is the introduction of two borderline subcategories: Category Premium as part of the First Category and a split of the Fourth Category to Category 4A and Category 4B. Category Premium is created for self-sufficient MAs with medal achievements at World title events & Olympic Games, while Category 4B is for inactive Member Associations.

The other novelties are new criteria such as hosting of ITTF sanctioned events, and participation in High Performance Programs. In addition, the gender aspect is observed whenever possible and it has also been added for criteria related to Para Table Tennis and Match Officials, refer back to figure 2 in the appendix illustrating the criteria of the 2018 Categorization tool and the novelties in the 2020 edition.

The 2020 edition of the categorization tool enhanced the assessment of each National Federation and demonstrated improvements in multiple evaluation criteria, as illustrated in Figure 2. The tool facilitated the interconnection of all the projects established by the different departments of the ITTF, guaranteeing coherence in the development of the appropriate model. Nevertheless, in this edition, there were several aspects that required further enhancement. Consequently, we conducted a SWOT analysis of the 2020 version of the tool to identify and emphasize the internal and external factors influencing the ITTF Categorization system (refer to Table 6).

Internal	Strengths	Weaknesses
	<ul style="list-style-type: none"> - Reliable and trusted criteria have been implemented by utilizing internal data sources of the ITTF. - The criteria were measurable, objective, and encompassed significant technical and demographic categories. 	<ul style="list-style-type: none"> - This iteration of the tool exclusively relied on internal data and omitted several major areas. - lack of relevant and reliable data from, and about MAs, for instance: number of registered players and clubs, number of licensed coaches, organizational

	<ul style="list-style-type: none"> - Introduction of point zero differentiated between the fully inactive Member Associations and those that are marginally active but striving for growth. - Gender aspect was considered in all criteria, awarding MAs who are striving towards gender balance. - Assigned a weighted score (x2) to a subset of the technical criteria. 	<ul style="list-style-type: none"> - structure, governance model, national competitions system, and more - The COVID-19 pandemic had a significant impact on various regions as a result of the reduced activity of many Member Associations (MAs).
External	Opportunities	Threats
	<ul style="list-style-type: none"> - Learn from other categorization systems of other sports and sports organizations. - Collect in-house data from Member Associations using a universal online questionnaire - Introduce new criteria to the Categorization Tool - Introduction of a new event system in the ITTF (World Table Tennis) 	<ul style="list-style-type: none"> - Incorporating external data obtained from MAs into the categorization tool is entirely reliant on the MAs Representatives who report to ITTF; there is no efficient way to validate the accuracy of such information. - COVID-19 and its effect on not updating the Tool for more than 2 years. - The tool's sole purpose was to assist ITTF with the funding for each MA, so the tool did not guide MAs on how to develop specific areas based on their category and current development state.

Table 6. SWOT Analysis, 2020 ITTF MA Categorization Tool

6.4 Field Review Conclusion

Upon comparing the SWOT analyses conducted on the 2018 and 2020 ITTF MA Categorization tools, it is evident that both tools share two common weaknesses. Firstly, they relied solely on internal data for categorizing Member Associations. Secondly, there was a lack of reliable data collected from Member Associations, including information on the number of registered players and clubs, licensed coaches, organizational structure, governance model, national competition system, and other relevant factors.

Moving forward with the study, our attention will be directed toward improving the tool through the resolution of two weaknesses that were identified through the SWOT analysis, as well as the opportunities that were highlighted in the analysis.

6.5 Research Questions

- What are the different methods of collecting and analyzing data that we can use to further improve and expand the new version of the ITTF Member Association (MA) Categorization tool?
- How to use the ITTF Member Association (MA) Categorization tool to generate recommendations to improve Member Associations (MAs) structure based on the data generated and collected?

7 Methodology

ITTF needs to categorize its member associations to better understand and assess their diversity. A systematic framework to define and classify member associations is needed due to the rapid growth and diversification of sports worldwide. This research design explores data collection and analysis methods to improve and expand the new ITTF Member Association (MA) Categorization tool and propose a comprehensive and adaptable framework for accurately categorizing ITTF Member Associations.

7.1 Research design

The research methodology employed in this paper is a descriptive design approach, with the objective of enhancing the existing evaluation criteria of the ITTF Member Associations (MAs) Categorization Tool and investigating new criteria to enhance our comprehension and assessment of the ITTF Members. This will enable us to gain a more profound understanding of the variables, their relationships, and patterns involved in the evaluations

8 Data Collection Method

This research employed three distinct data collection methods to investigate the topic. The research process involved the subsequent stages:

- 1- Surveys
- 2- Study of the previous evaluation criteria of the ITTF MA 2020 Categorization Tool
- 3- Benchmarking

8.1 Step 1. Surveys

ITTF Member Associations were requested to fill out an online Development Questionnaire, which will assist in the Categorization process, set to take place in its third edition in 2024. The purpose of the process is to assess the existing Development Program, which is in line with the ITTF Strategic Plan's objective of giving priority to players, emphasizing performance and merit-based selection, and utilizing data analysis. In essence, the concept streamlines the process of making informed decisions about how to allocate Development funding on a global scale.

The online questionnaire facilitated the gathering of external data associated with the ITTF Member Associations. This data covered various aspects such as governance, policies, regulations, integrity mechanisms, development strategy, action plan, professionalization of staff members, capacity building, sport for development activities, integration, events, and integrity actions. The evaluation areas and items of the questionnaire are displayed in annexes of this research paper.

8.2 Step 2. Study of the 2020 ITTF MA Categorization Tool

This section of the study will analyze the Technical assessment criteria of the ITTF MA Categorization Tool in its most recent version from 2020. The objective is to identify any modifications or updates required in the current evaluation criteria. Additionally, it is important to note that on May 30, 2019, the ITTF announced the creation of World Table Tennis (WTT). As of 2021, all of the ITTF's main commercial assets were consolidated under this new commercial entity. WTT played a significant role in influencing the transformation and facilitating the success of the groundbreaking commercialization of table tennis. Given the occurrence of numerous events since the inception of WTT in 2021, it is necessary to take them into account when reassessing the existing technical evaluation criteria of the 2020 edition of the MA Categorization Tool. The 2020 Categorization Tool Evaluation Criteria are shown in Figure 2.



Figure 2. 2020 ITTF MA Categorization Tool Evaluation Criteria

In order to assess the Technical Criteria A1, which evaluates the participation of senior players in ITTF-sanctioned events, it is necessary to also consider their participation in the recently established World Table Tennis Events (WTT). Since 2021, over 65 WTT events developed for senior athletes have been held across various continents.

Therefore, we recommend evaluating not only the number of (senior) players participating in ITTF-sanctioned events but also WTT Events.

For the assessment of senior players on the ITTF World Ranking List, it is recommended to maintain the existing evaluation criteria outlined in Table 8. This criterion considers the number of players included in the most recent World Ranking List, which includes all officially recognized ITTF and WTT events. We recommend including medals with premium category index values in the World Table Tennis (WTT) Grand Smash events. This event is widely regarded as one of the largest and most prestigious events in the WTT Series.

A2	Index Value	Points
Women	<i>Medals at World Title events & Olympic Games</i>	<i>x (bonus)</i>
	2 or more players in top 50	4
	2 or more players in top 150	3
	2 or more players in top 300	2
	<i>Player(s) ranked over 301 or 1 within top 300</i>	<i>1</i>
	<i>No ranked players</i>	<i>0</i>
Men	<i>Medals at World Title events & Olympic Games</i>	<i>x</i>
	2 or more players in top 50	4
	2 or more players in top 150	3
	2 or more players in top 300	2

Table 8. ITTF MA Categorisation Tool, A2 Technical Criteria

When evaluating Criteria A3 "Junior Development," which assesses the involvement of young players in ITTF-sanctioned events, it is important to consider their participation in the newly established World Table Tennis Events (WTT), just like Criteria A1. The WTT Youth Series competition is being referred to, which was also introduced in 2021.

No modifications are necessary for Criteria A4, which applies to participation in ITTF Para Table Tennis events. There have been no alterations to the Para Table Tennis events system since 2020. Similarly, for Criteria B1, which concerns the total number of certified international umpires within the ITTF Member Association, the International Umpire Examination is conducted every two years, and no changes have been made in this area.

Regarding Criteria B2, which refers to the hosting of ITTF events by ITTF Member Associations, it is imperative to consider the hosting of the recent WTT Events Series for Senior and Youth athletes.

Finally, for Criteria C and D, no reevaluation is deemed necessary, as these aspects are primarily determined by objective factors such as the country's population, Human Development Index, and duration of membership in the ITTF.

8.3 Step 3. Benchmarking

Benchmarking was used to determine how other major sports organizations categorize and assess their members. What are the most effective methods or strategies that are widely accepted as the most successful? The benchmark was chosen based on factors similar to the ITTF MA Categorization Tool, with the first step being to identify the similarities. The following criteria were used to determine which Sport Association would be included in the study:

- 1- Categorizing members on an international level
- 2- Use several criteria and indicators to implement effective assessment
- 3- Use online survey/questionnaire method to collect external data
- 4- High effective indicators used in the assessment to ensure objectivity

Using the criteria above, we chose The Fifth Review of the Association of Summer Olympic International Federations (ASOIF) of International Federation Governance as a benchmark for our research.

8.3.1 The Fifth Review of the Association of Summer Olympic International Federations (ASOIF) of International Federation Governance

The Association of Summer Olympic International Federations (ASOIF) has released its fifth report on International Federation (IF) governance. Established in 2016. The 2023-24 evaluation involved a questionnaire completed by IFs, with independent moderation of the responses. The 2023-24 study features an online questionnaire that includes 60 indicators reflecting progress in governance practices. The indicators are categorized into five sections: Transparency, Integrity, Democracy, Development and Sustainability, and Control Mechanisms. In October 2023, the questionnaire was sent to 32 IFs. Scores were independently moderated from mid-January to mid-March 2024.

The ASOIF Categorization system serves as a benchmark for collecting and organizing information from IFs and evaluating the ongoing development of their governance strategies. ASOIF relies on acquiring necessary information from external sources, rather than using internal data. This aligns with our study's objective. ASOIF serves as an excellent model for implementing effective strategies to ensure a fair and unbiased assessment. Furthermore, their scoring system aims to provide a highly objective means of measuring governance. As per the Task Force's decision, there were no meetings held with IFs to assess scores. This approach was considered the most equitable and indispensable for adhering to the schedule, which is particularly crucial in our study as we are evaluating 227 National Table Tennis Federations. Their study involves examining documents, procedures, and structures, which may not necessarily provide insights into crucial factors such as individual behavior and organizational culture.

9 Data Result and Analysis

The data analysis begins with a detailed review of the Association of Summer Olympic International Federations (ASOIF) 4th and 5th reviews of international federations. This initial step identifies key points and metrics from these reviews, serving as a foundational baseline for subsequent analyses.

Building on this foundation, the second part of the analysis involves the evaluation of responses from the ITTF Development Questionnaire explained mentioned in chapter 8.1. The data collected from this questionnaire will be meticulously analyzed to identify patterns and derive meaningful conclusions. The final component of the analysis is a comparative study to the SWOT analysis of the ITTF Member Association Categorization Tool 2018 and 2020 editions. This structured approach to data analysis ensures that each step builds on the previous one, leading to well-informed conclusions and actionable recommendations for the ITTF and its member associations.

9.1 Analysis of the ASOIF Fifth Review of International Federation Governance

As outlined in Chapter 8.3, the ASOIF Fifth Review of International Federation Governance, Benchmarking was utilized to enhance the ITTF MA Categorization Tool. Our study aims to identify benchmarking assessment strategies and scoring system mechanisms derived from the ASOIF review that can be implemented. The following key factors were determined:

- Grouping methodology for the online survey set of questions
- Minimum set score points for the online survey
- Scoring system and range of the indicators
- Score moderation

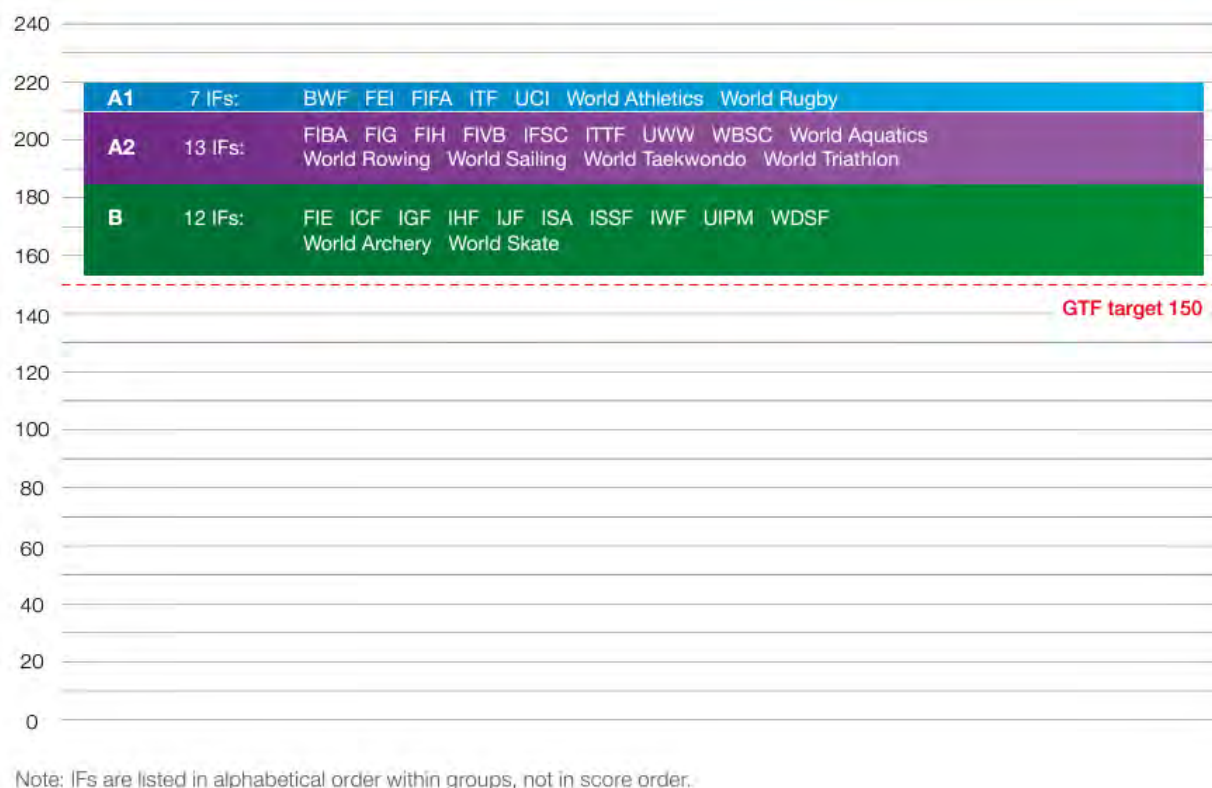


Figure 3. ASOIF fifth review for IFs governance

9.1.1 Grouping Methodology:

ASOIF employed a self-assessed questionnaire completed by each IF and conducted a grouping analysis of the 60 indicators in their online survey to members. They categorized the questions into five sections: Transparency, Integrity, Democracy, Development & Sustainability, and Control Mechanisms, resulting in a theoretical maximum score of 240 points for all indicators.

Principal discovery:

A similar methodology can be applied to our Development Questionnaire. By grouping the set indicators into different categories, we can perform a coherent analysis and achieve a balanced assessment of the total score, ensuring it reflects a comprehensive evaluation.

1- Minimum set score points for the online survey

The total scores recorded by the 32 IFs participating in the ASOIF online survey ranged from 210 to 219. Consequently, the ASOIF Governance Task Force established the minimum score at 210 to facilitate the assessment of IF scores.

Principal discovery:

A similar approach can be applied in our study and online questionnaire. Setting a minimum score will enable a straightforward comparative analysis of the NFs and establish a consistent baseline for evaluating and comparing the results.

9.1.2 Scoring system and scale range of the indicators

The scoring system for each of the 60 indicators in the ASOIF survey incorporated a separate definition for scores on a scale of 0 to 4. The scores in each case were intended to assess the level of fulfillment of the indicator by the IF, as follows: 0 – Not fulfilled at all 1 – Partially fulfilled 2 – Fulfilled 3 – Well-fulfilled according to published rules/ procedures 4 – Totally fulfilled in a state-of-the-art way. The intention of the scoring was that 3 or 4 on any indicator equated to a ‘good’ performance. A score of 2 signified that the IF reached an adequate level. The implication of a score of 0 or 1 was that there was more work to be done.

Principal discovery:

Such a scoring system is designed to provide a detailed, objective, and transparent assessment, encouraging continuous improvement and benchmarking against best practices, following a similar approach, 3 scale ranges are utilized for our ITTF Development Questionnaire indicators, where we combined point 0 & 1 in the ASOIF scoring system, which will facilitate the calculation as we are assessing a broader number of sports organizations.

9.1.3 Score moderation

ASOIF used score moderation to check the scores against the defined criteria in the questionnaire for each indicator for all 32 responses. Evidence provided by IFs was also checked (such as references to clauses in statutes or specific web pages) and, where evidence was absent or incomplete, additional information was researched from IF websites. With only rare exceptions, information was not collected from third-party sources, such as online news. Supplementary documents provided on a confidential basis were considered where appropriate.

All 32 IFs	Self-assessed score	Moderated score
Mean total*	204.5	189.4
Median total*	207.5	190
Mean for indicator (out of 4)	3.41	3.16

Table 9. ASOIF Fifth review of IFs Governance Moderation scoring

Principal discovery:

Implementing this process across more than 200 NFs will be complex. However, in our study, NFs were asked to provide evidence for certain indicators, such as specific web pages and references, to support their answers.

Summary of Key Findings

- 1- Grouping the ITTF online questionnaire set of questions into 4 different groups.
- 2- Set a development target score, to be determined in the chapter 9.2
- 3- Set 3 scale range point for each of the classes set of questions for the different groups.
- 4- Consider score moderation methodology for the outcome of the questionnaire.

9.2 Online Questionnaire Data Results and Analysis

9.2.1 Online Questionnaire Analysis

As outlined in chapter 8 on the Data Collection Method, 227 Member Associations of the ITTF were extended an invitation to complete an online development questionnaire between November 14, 2023, and April 1, 2024, this resulted in the participation of 115 National Federations in this questionnaire, which facilitated the acquisition of a deeper knowledge of the distinct requirements and obstacles encountered by our diverse membership. This understanding holds significant importance in shaping the future of developmental initiatives for the quadrennial period of 2025-2028, as well as the forthcoming edition of the Member Association Categorization process. The insights gained from this process can be utilized to make informed decisions pertaining to the distribution of global Development funding.

9.2.2 Description of the Questionnaire

This questionnaire comprises 53 meticulously crafted points, covering a wide spectrum of crucial areas within the table tennis ecosystem. Members are invited to share their perspectives on governance structures, development strategies, and integrity measures, providing invaluable insights to shape the future direction of the sport. From assessing the effectiveness of capacity-building initiatives to evaluating the inclusivity of para table tennis programs, every aspect of the ITTF's operations is scrutinized to ensure alignment with member needs and aspirations. Additionally, the questionnaire explores themes of integration, inclusion, and competition management, seeking input on policies, regulations, and the representation of member associations at the highest levels of governance. Through this extensive engagement effort, the ITTF aims to foster transparency, strengthen collaboration, and drive positive change across the global table tennis community.

9.2.3 Descriptive Statistics

The questionnaire analysis conducted was a descriptive analysis, conducted twice to thoroughly investigate the external data collected from the national federation from two perspectives. The first perspective was

technical, aiming to provide recommendations that would support and improve the criteria of the new ITTF Member Association categorization tool. The second perspective was geographical, aiming to reach a specific conclusion on the needs of each region. This, in turn, would enhance the development programs and projects offered to each continent.

1) Technical descriptive analysis of the questionnaire:

The collected response to the questionnaire is grouped into 4 main groups:

- NF Governance Strategy
- NF Development & Events Strategy
- NF Leadership and Staff professionalization
- Ethics and inclusion within the NF Structure

The next procedure entails dividing each group into separate classes, wherein each class corresponds to a specific set of questions. A scoring system was applied to each class, which was then multiplied by a weight based on the significance of each evaluated division. The sum of these scores is then used to calculate the evaluation score for each group, figure 4 illustrates the divisions in each group and the corresponding set of question topics.

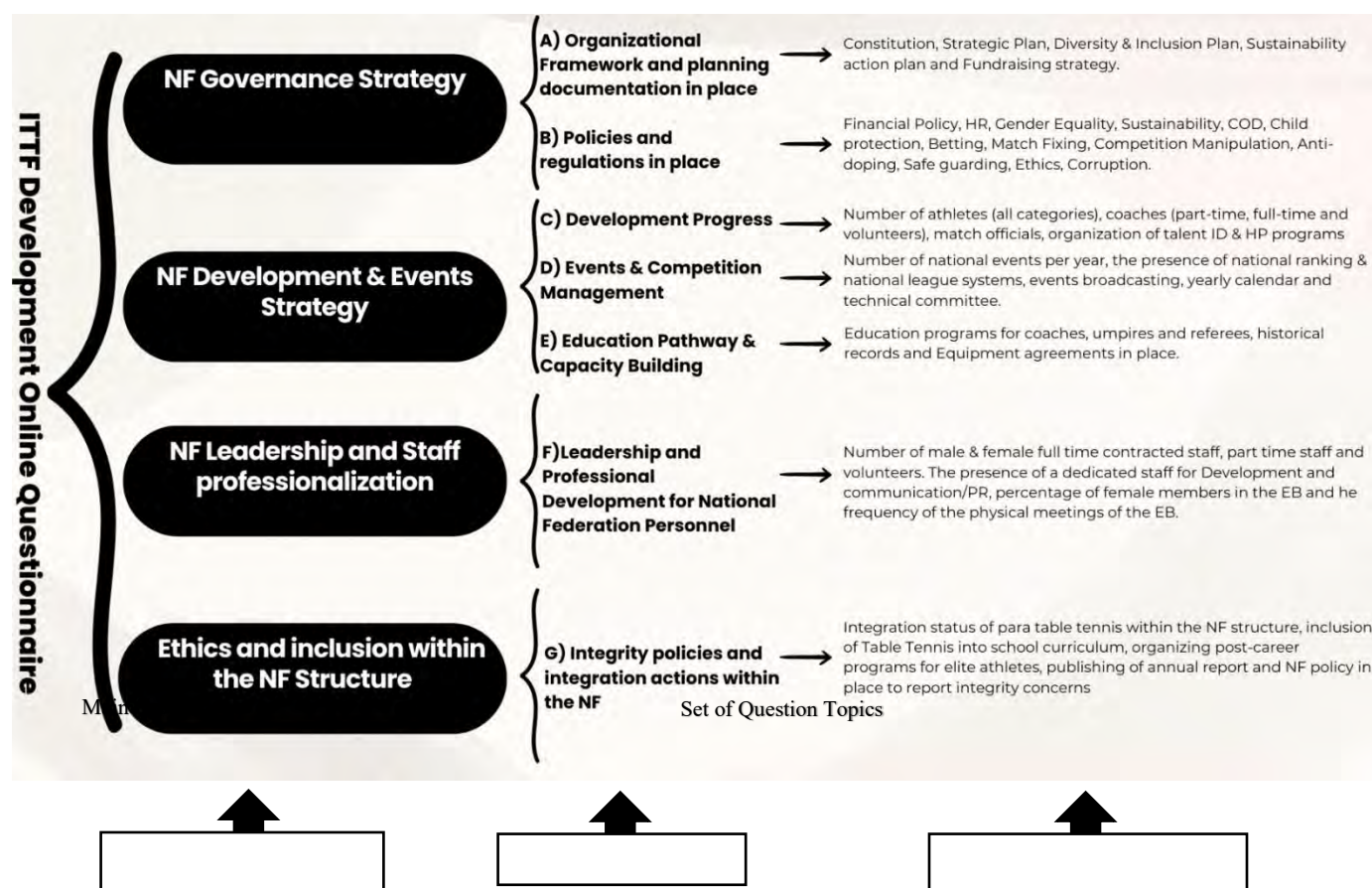


Figure 4. The divisions in each group in the Technical Analysis and the corresponding set of question topics of the questionnaire.

Group 1: National Federation Governance Strategy

21 Questions were grouped together into 2 classes highlighting the governance strategy of the National Federation.

a) Class A, Organizational Framework and planning documentation in place:

This study consists of a series of five binary questions that examine the documentation implemented within the NF governance strategy assessing the overall governance and operational effectiveness of the national table tennis federations. Each question is assigned a score of 1 point, resulting in a cumulative score of 5 points for the entire class. The class is subsequently evaluated by considering the cumulative score of the five questions, and subsequently, an overall grade is assigned to the entire class. Class A grade is as follows:

Class A assessing the below documentation of the NF:

<input type="checkbox"/> Constitution	<input type="checkbox"/> Strategic/Development Plan
<input type="checkbox"/> GEDI Action Plan	<input type="checkbox"/> Sustainability Strategy
<input type="checkbox"/> Fundraising Strategy	

Figure 5. Class A assessment areas

The total points collected in this class is 5 points, the score grade is divided into 3 tiers and is highlighted in the next chapter, the score calculation for the score grade of the class is based on the average collected score in this class for the 115 MAs participated in the questionnaire.

Class B, National Federation Policies & Regulations in place:

The class was given a set of 16 binary questions that examined the governance policies and regulations in the NF. Each question was assigned a score of 1 point, resulting in a total score of 16 points. Subsequently, the class is evaluated by considering the cumulative score of the 16 questions, and subsequently, a comprehensive grade is assigned to the entire class.

Class B assessing the below NFs policies:

<input type="checkbox"/> Finance	<input type="checkbox"/> Sustainability	<input type="checkbox"/> Betting	<input type="checkbox"/> Safeguarding	<input type="checkbox"/> Ethics
<input type="checkbox"/> HR	<input type="checkbox"/> COD	<input type="checkbox"/> Match fixing	<input type="checkbox"/> Abuse & Harassment	<input type="checkbox"/> Corruption
<input type="checkbox"/> Gender Equality	<input type="checkbox"/> child Protection	<input type="checkbox"/> Anti-doping	<input type="checkbox"/> Age manipulation	<input type="checkbox"/> Health and Well-being

Figure 6. Class B assessment areas

The total points collected in this class are 16 points, the score grade is divided into 3 tiers and is highlighted in the next chapter, the score calculation for the score grade of the class is based on the average collected score in this class for the 115 MAs participated in the questionnaire.

The total score for the 1st main group is then calculated as the sum of the score graded in Class A and B set of questions. Class A score + Class B score, the Group score indicating the assessment of the NF Governance Strategy.

Group 2: National Federation Development & Events Strategy:

21 questions were grouped together into 3 classes highlighting the NF Development & events progress & strategy.

a) Class C, Development Progress within the NF:

A set of 10 questions was posed, consisting of 3 YES/NO questions that assigned a score of 0/1. The remaining 7 questions assessed numerical concepts and were analyzed using ordinal comparison. The comparison scale ranged from smaller than to larger than, with each question acquiring a score of 2 points. The class is subsequently evaluated by considering the cumulative score of the ten questions, and subsequently,

Class C assesses the total number of the below numerical values (all values are for male and female combined):

■ Youth Athletes U19	■ Part-time Coaches	■ National Referees (not certified internationally by ITTF)	■ Para Athletes
■ No. of Senior Athletes	■ Full-time Coaches	■ National Umpires (not certified internationally by ITTF)	

Figure 7. Class C assessment areas

And 3 YES/NO binary questions assessing the following:

- a- Talent identification program run by the NF b- Dedicated high performance program run by the NF
- c- Yearly national championships for different age categories and Para table tennis

The population of the NFs' member countries and each nation's development index have an impact on the numerical values' comparison scale range. Therefore, a sample was drawn to identify the scale range of the numerical values.

Sampling Example to determine the scale range of the total number of youth and senior athletes:

Three samples of six National Federations each were selected from the questionnaire in order to determine the comparison scale, which ranged from smaller than to larger than and assigned a score of points for each question. These samples were selected using the 2020 ITTF MA Categorization tool and the population of the NFs' member countries in 2023–2024. Three tiers were created out of this sample:

- 1- 6 NFs from classes 1 and 2 of the 2020 ITTF MA Categorization tool:
- 2- 6 NFs from class 3 of the 2020 ITTF MA Categorization tool:

3- 6 NFs from class 4 of the 2020 ITTF MA Categorization tool:

The selection of each sample tier of 6 national federations (NFs) was based on the population size of the respective countries. Specifically, 2 NFs were chosen from countries with a small population of less than 10 million, 2-3 NFs were chosen from countries with a medium population ranging from 10 million to 100 million, and 1-2 NFs were chosen from countries with a population exceeding 100 million. The continental distribution of each sample was considered, ensuring that each sample contained NFs from at least 3 different continents.

	Class	Small population NFs (less than 10 million)	Medium population NFs (10 m – 100 m)	Large population NFs (More than 100 million)
Sample 1	1 & 2	SGP, QAT	SWE, ECU	BRA, EGY
Sample 2	3	LBN, EST	UGA, PER	INA, PAK
Sample 3	4	BOT, SUR	YEM, TAN, ANG	ETH

Table 10. Sampling example for grouping NFs based on population

To determine the three levels of score grades, the average number of responses from each participant in the sample was analyzed for the online questionnaire question. Below in Table 11 is an example illustrating the total number of athletes in the Youth and Senior players, and the assigned score for each tier.

NF	Category	Total Youth Athletes	Total Senior Athletes
Singapore	1	125	10
Qatar	2	720	163
Sweden	1	4050	6500
Ecuador	2	220	160
BRA	1	3528	4848
Egypt	2	1829	409
Average		1745	2015
Lebanon	3	125	300
Estonia	3	442	649
Uganda	3	59	33
Peru	3	150	90
Indonesia	3	288	24
Pakistan	3	475	498
Average		257	265
Botswana	4	300	200
SUR	4	7	0
YEM	4	172	612
TAN	4	28	16
ETH	4	220	280
ANG	4	160	58
Average		148	194

Table 11. example illustrating the total number of athletes in the Youth and Senior players, and the assigned score for each tier.

Based on the average scores calculated for the total number of youth and senior athletes, three tiers are determined by rounding the average of the scores calculated for each category to the nearest specified increment, such as 50 in this case, ensuring that the resulting number is the largest multiple of 50 that is less than or equal to the average number calculated. The scale range used is as follows,

- < 150 athletes: 1 point
- 150 – 250 athletes: 2 points
- >250 athletes: 3 points

Same approach is used to calculate the scale range for the total number of Para athletes, part-time coaches, full-time coaches, number of national umpires and referees.

The total points collected in this class are 17 points, the score grade is divided into 3 tiers and is highlighted in the next chapter, the 3-tier score grade of the class is based on the average collected score in this class for the 115 MAs that participated in the questionnaire.

b) Class D, Events and Competition Management:

A set of 6 questions were posed, consisting of 5 YES/NO questions that assigned a score of 0/1. The remaining question assessed numerical concept and were analyzed using ordinal comparison. The comparison scale ranged from smaller than to larger than, with each question acquiring a score of 3 points. The class is subsequently evaluated by considering the cumulative score of the six questions.

Class D assessing the following areas in Figure 8,

<ul style="list-style-type: none"> ■ Yearly Calendar Publish ■ Total number of National events organized in a calendar year 	<ul style="list-style-type: none"> ■ National league system in place ■ National Ranking System in place 	<ul style="list-style-type: none"> ■ Technical committee/staff responsible for National events ■ Broadcasting/Streaming of national events
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Figure 8. Class D assessment areas

Numerical Value Assessment:

The numerical value question in Class D assessed the total number of national events organized in a calendar year, in order to identify the scale range, an average score to the NFs answers was performed, and prior to calculating the average score, we took the population and size of the different countries into consideration, by eliminating all the answers above 50 events when calculating the average score. The average score was 10.7 which was then rounded up to 10. Based on this average score, a 3 scale ranges were created, which are less than 6 events, between 6 and 10 events, and more than 10 events, with each range assigned a score from 0 to 2.

The total points collected in this class are 7 points, the score grade is divided into 3 tiers and will be highlighted in the next chapter, the 3-tier score grade for the class is based on the average collected score in this class for the 115 MAs that participated in the questionnaire.

c) Class E, National Education Pathway and Capacity Building:

A set of 5 binary questions were posed, consisting of YES/NO questions that assigned a score of 0/1. The class is subsequently evaluated by considering the cumulative score of the five questions, and subsequently, an overall grade is assigned to the entire class.

Class E assessing the below areas in Figure 9,

■ Coaches' education run by NF	■ Referees' education run by NF	■ Agreement with TT Equipment manufacturer
■ Umpires' education run by the NF	■ Historical records regarding education programs	

Figure 9. Class E assessment areas

The total points collected in this class is 5 points, the score grade is divided into 3 tiers and is highlighted in the next chapter, the 3 tiers score grade of the class is based on the average collected score in this class for the 115 MAs participated in the questionnaire.

The total score for 2nd main group is then calculated as the sum of the score graded in Classes C, D and E set of questions.

Score 2 Group = Class C + Class D + Class E, the Group score indicating the assessment of the NF development plan and events strategy.

Group 3: National Federation Leadership and Staff Professionalization:

6 Questions were grouped into 1 class highlighting Professionalization of the NF Staff and Leadership.

Class F, Leadership and Professional Development for National Federation Personnel:

A set of 6 questions were posed, consisting of 3 YES/NO questions that assigned a score of 0/1. The remaining 3 questions assessed numerical concepts and were analyzed using ordinal comparison. The comparison scale ranged from smaller than to larger than, with each question acquiring a score of 2 points.

Class F assessing the below numerical values in Figure 10,

■ Number of Full & Part-time Staff	■ Percentage of female in Executive Board
■ Number of Volunteers within the NF	■ Physical frequency of EB meetings

Figure 10. Class F assessment areas

And the following binary values,

a) A person or body in charge for Communication and PR

b) A person or body in charge for Development

Numerical Value Assessment:

The numerical value questions in Class F assessed the total number of part-time and full-time staff, which reflects the professionalization of the NF HR system, we noticed from the recorded answers that many NFs run only on volunteers without any paid staff, therefore the 3 scale ranges were identified as following:

- 0: no paid staff
- 1-10: average number of staff (based on the recorded answer)
- >10: good HR structure

The class also assessed the total number of volunteer staff, and the scale range was identified based on the average recorded answer of all NFs. The frequency of Physical EB meetings was also assessed during this class, and the scale range varies between 3 ranges that had been already implemented as a multi-choice option in the questionnaire. Finally, the final numerical value that was assessed is the % of female EB members from the total EB, 3 ranges were identified based on the average answer recorded, the ranges are as below,

- <10%: 0 point score
- 10% - 25%: 1 point score
- >25%: 2 points score.

The total score for the 3rd main group is then calculated as the score grade of the Class F set of questions.

Group 4: Ethics and Inclusion within the NF structure:

5 Questions were grouped into 1 class highlighting the Integrity policies and integration action in place within the NF structure.

Class G, Integrity policies and integration actions within the NF

This group analysis consists of a series of five binary questions that examine the integrity policies and integration actions within the NF. Each question is assigned a score of 1 point, resulting in a cumulative score of 5 points for the entire class. The class is subsequently evaluated by considering the cumulative score of the five questions, and subsequently, an overall grade is assigned to the entire class.

Class G assesses the following binary questions in Figure 11,

<ul style="list-style-type: none"> ■ Integration of Para Table Tennis ■ Annual Report publishing 	<ul style="list-style-type: none"> ■ Inclusion of Table Tennis in different school curriculum ■ NF policy in place to report integrity concerns 	<ul style="list-style-type: none"> ■ Post career programs for elite athletes
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Figure 11. Class G assessment areas

The total score for Group 4 is then calculated as the score grade of the Class G set of questions.

Overall National Performance score of the NFs

Based on the score calculated for each class, comprehensive national performance measurements of each NF were derived from the calculated scores of the online questionnaire.

Total score calculation

In the analysis of the comprehensive national performance measurements of each National Federation (NF), a weighted score was assigned to ensure that the most critical areas of performance were adequately emphasized. Based on the scores calculated for each class, the overall performance was derived by considering the relative importance of different aspects of the federations' activities.

Among the four groups analyzed, a weighted score was specifically given to Group 2, “National Federation Development & Events Strategy.” This decision was made due to the significant importance and direct impact this group has on the development of athletes, coaches, and match officials. The rationale for assigning a weighted score to this group includes the following points:

1. Direct Impact on Development: The strategies and events organized by national federations play a crucial role in the training, growth, and performance of athletes, coaches, and match officials. Effective development strategies can lead to better preparedness and higher performance levels in competitions.
2. Long-term Success: Sustainable development and strategic event planning are fundamental to the long-term success of national federations. By investing in robust development programs, federations can ensure a steady pipeline of talent and well-trained professionals.
3. Comprehensive Growth: Group 2 encompasses key areas that contribute to the holistic growth of the sports ecosystem within the federation. This includes not only competitive success but also the personal and professional growth of individuals involved in the sport.
4. Enhancing Competitiveness: A well-developed strategy for events and overall development enhances the competitiveness of the national federation on both regional and international stages. This can lead to greater recognition and opportunities for the federation and its members.

In summary, the weighted score for Group 2, “National Federation Development & Events Strategy,” reflects its critical role in driving the overall performance and success of the national federations. By emphasizing this group, the analysis provides a more accurate and impactful measurement of the federations' effectiveness in fostering growth and excellence in sports.

Total Score formula:

The total score for the online questionnaire was calculated as a sum of the scores of the 4 groups after adding a multiplication factor of x2 to Group 2 as highlighted above.

NF Total Score for the 2024 ITTF Development Questionnaire =
[Group 1 score + x2 (Group 2 score) + Group 3 score + Group 4 score]

9.3 Data results of the online questionnaire:

9.3.1 Response rate

In this section, we will analyze the response rate of the online questionnaire conducted as part of this research. A key aspect of this analysis involves identifying the continental distribution of the national federations (NFs) that participated in the survey. Understanding the response rate is crucial for assessing the representativeness and reliability of the collected data. By examining the percentage of the sample collected relative to the target sample, we can evaluate the extent to which the survey responses accurately reflect the broader population of national federations. This analysis will provide valuable insights into the

geographical coverage of the survey and the overall participation level, ensuring a thorough and transparent approach to interpreting the research findings.

The response rate of the online questionnaire is shown in Figure 12.

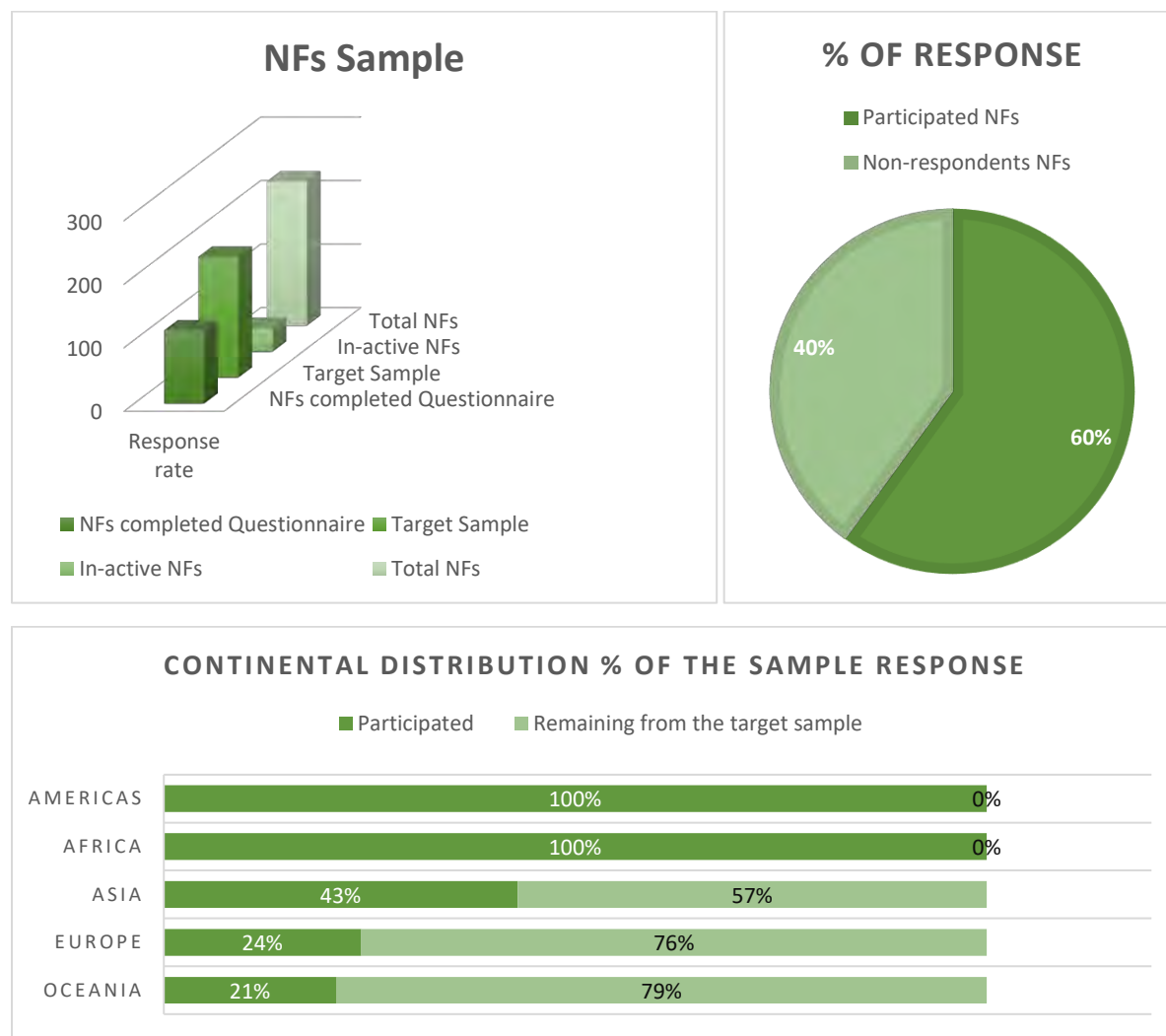


Figure 12. ITTF Development questionnaire response rate

9.3.2 Results of the online Questionnaire

- a) **Group 1:** overall governance, and operational effectiveness of the national table tennis federations.
- Class A: Organizational Framework and planning documentation in place
 - Class B: National Federation Policies & Regulations in place:

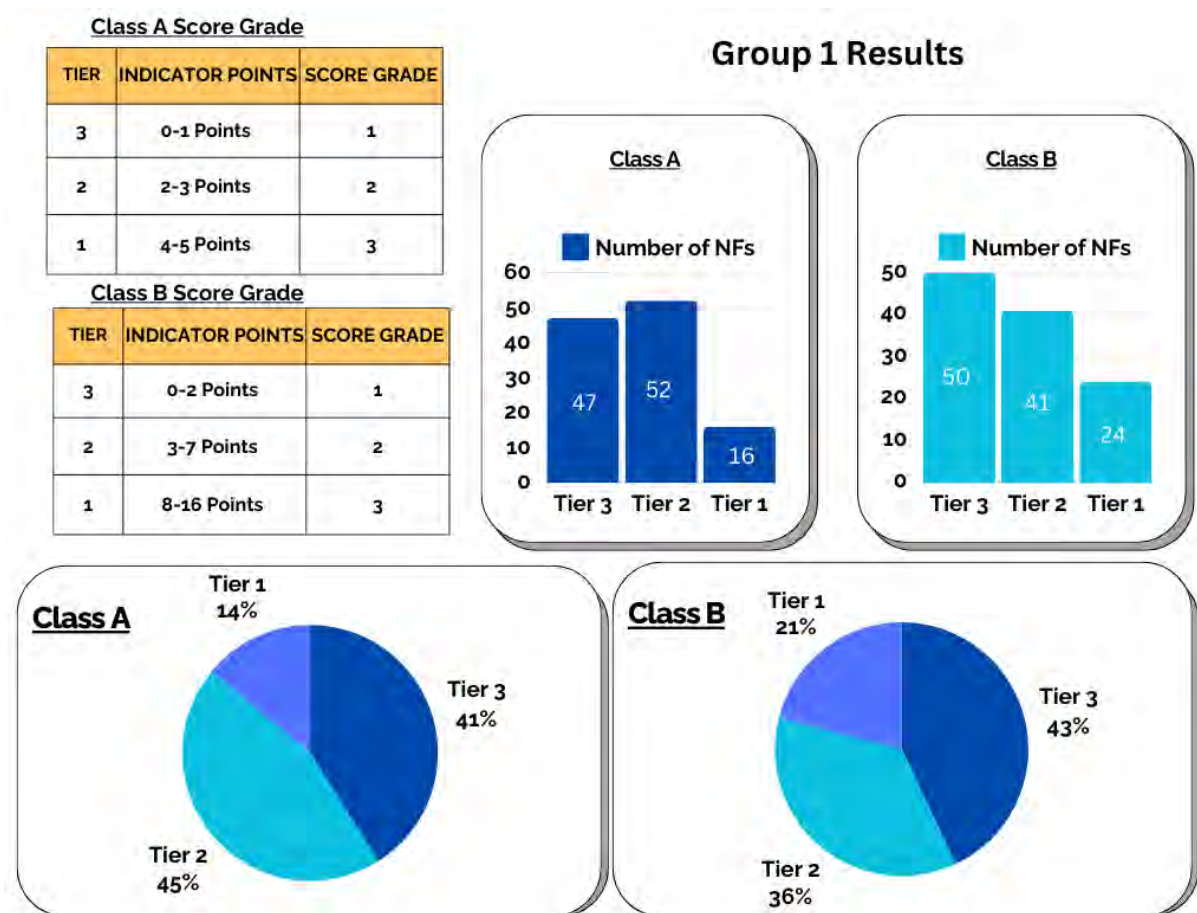


Figure 13. ITTF Development Questionnaire Group 1 results

Total Score

The Total Score for Group 1 for each NF is calculated based on the total sum of Class A and Class B.

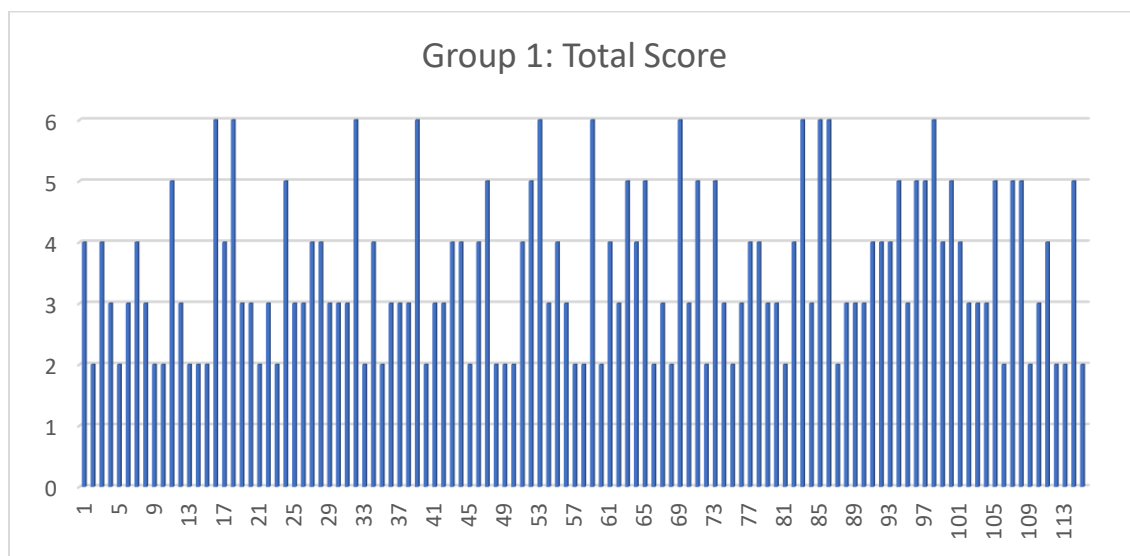


Figure 14. Group 1 total score

b) Group 2: NF Development, Education Pathway & Events Strategy

1. Class C: Development Strategy
2. Class D: National Events & Competition Management
3. Class E: Education & Capacity Building

Group 2 Results

Class C Score Grade			Class D Score Grade			Class E Score Grade		
TIER	INDICATOR POINTS	SCORE GRADE	TIER	INDICATOR POINTS	SCORE GRADE	TIER	INDICATOR POINTS	SCORE GRADE
3	0-5 Points	1	3	0-3 Points	1	3	0-1 Points	0
2	6-10 Points	2	2	4-5 Points	2	2	2-3 Points	1
1	11-17 Points	3	1	6-7 Points	3	1	4-5 Points	2



Figure 15. ITTF Development Questionnaire Group 2 results

Total Score: The Total Score for Group 2 for each NF is calculated based on the total sum of Class C + Class D + Class E.

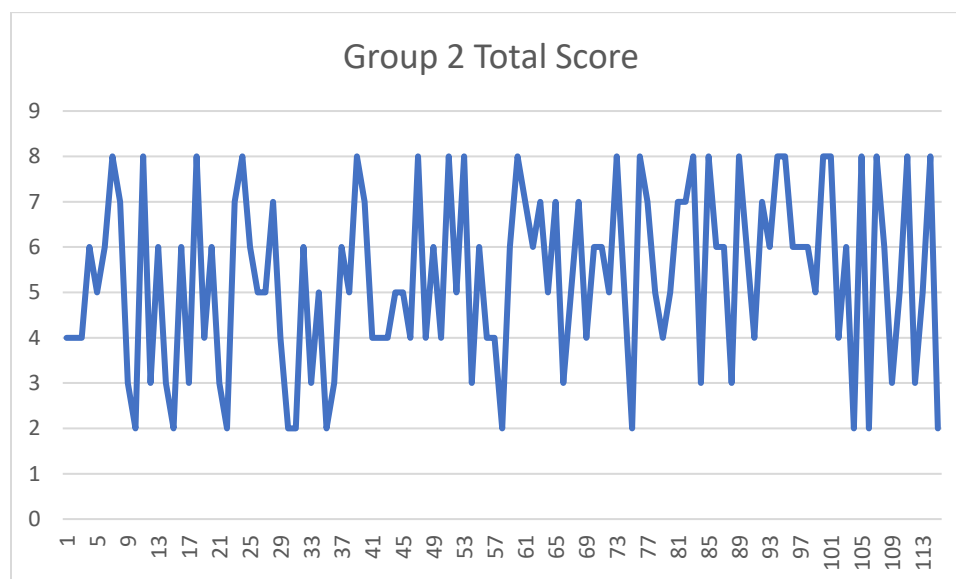


Figure 16. ITTF Development Questionnaire Group 2 Total Score

Group 3: NF Leadership and Staff Professionalization

1- Class F: Staff Professionalization & Leadership

Group 3 Results

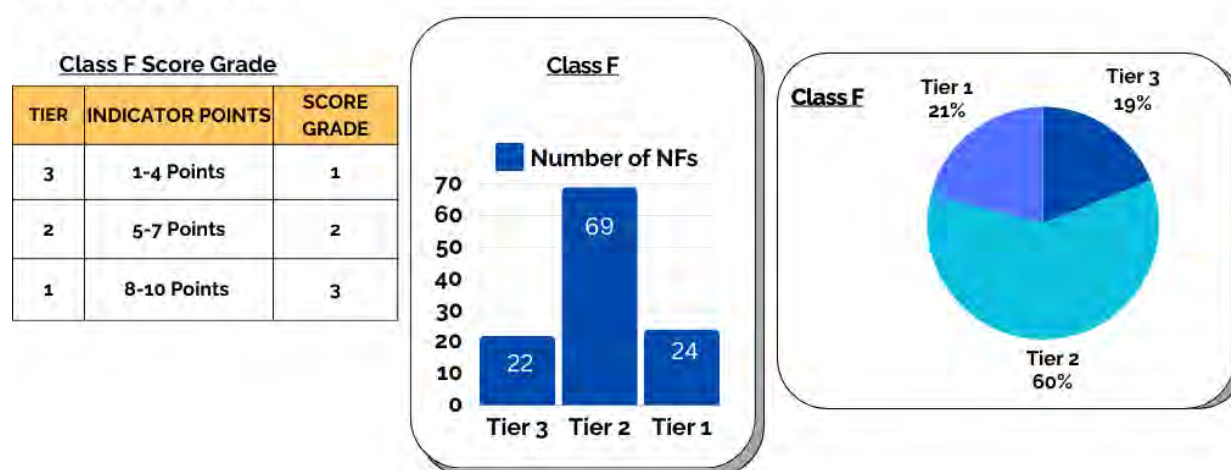


Figure 17. ITTF Development Questionnaire Group 3 results

Group 4: Ethics and Inclusion within the NF structure:

1- Class G: Integrity Policies and Inclusion Actions

Group 4 Results

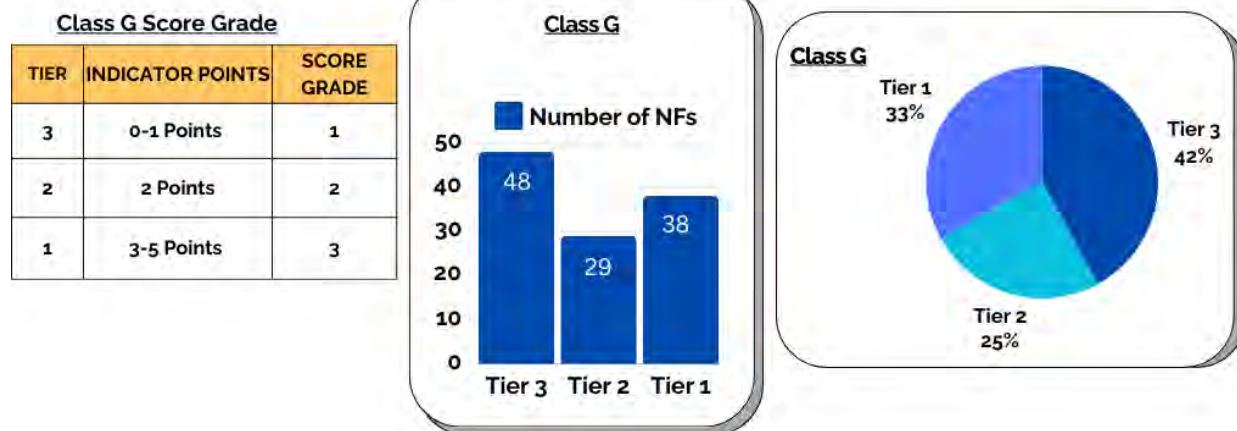


Figure 18. ITTF Development Questionnaire Group 4 results

Total Score.

The total score obtained from the online questionnaire is divided into four categories, in accordance with the scoring system utilized in the ITTF Member Association Categorization Tool. This tool classifies Member Associations into four main categories, as outlined in chapter 6. These categories range from category 4 to category 1, with category 4 representing the Member Associations with the lowest score in the respective evaluation area, and category 1 representing the Member Associations with the highest score in the respective area.

Score record

The total score recorded for the 115 NFs that participated in the online questionnaire ranges from 8 to 20 points, with an average score of 18 points. The 4 categories are determined based on a range scale obtained, which is shown in Table 12

Category	Index value (score of the online questionnaire)	points	# of NFs
1	23 - 28	4	27
2	18 - 22	3	32
3	13 - 17	2	35
4	8 - 12	1	21

Table 12. Total score of the sample of 115 NFs

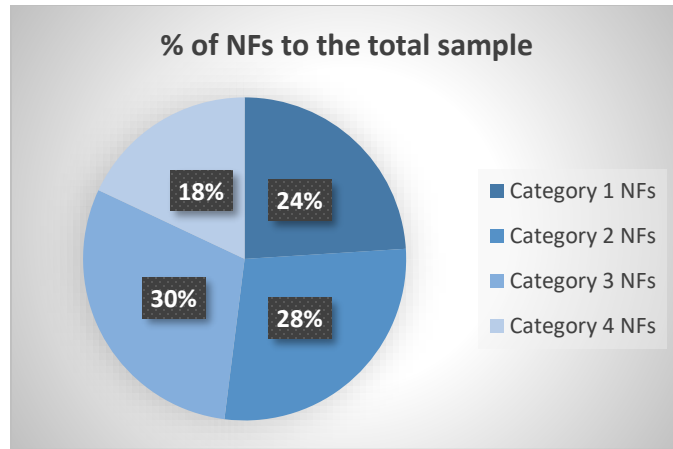


Figure 19. Percentage of the Categories of NFs to the total sample

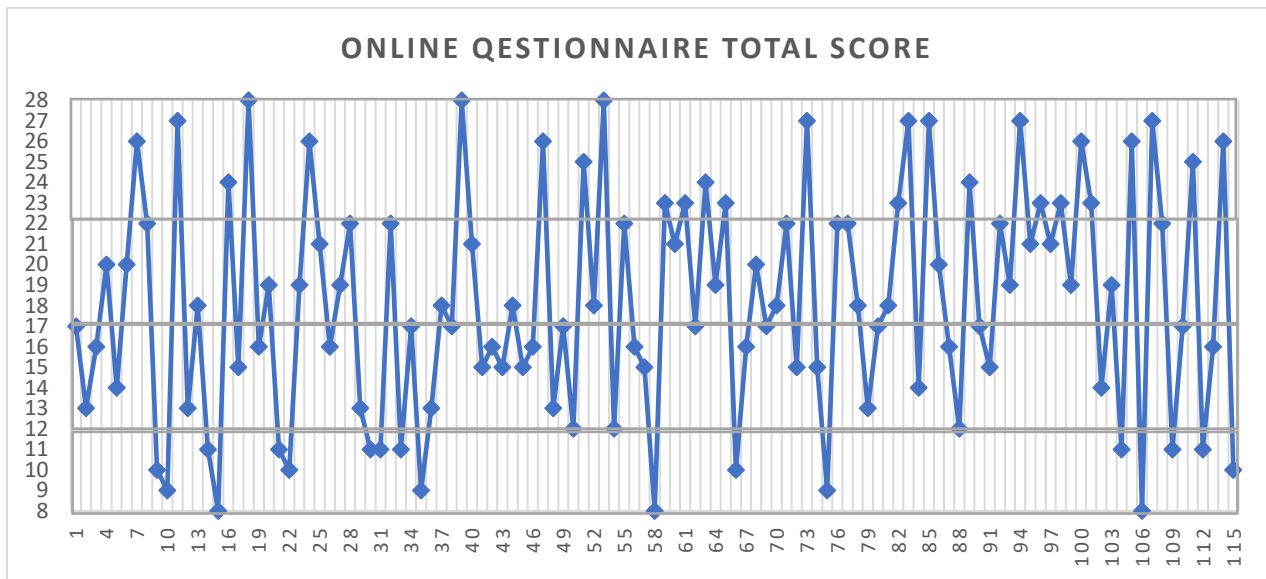


Figure 20. ITTF Development Questionnaire chart of the Total Score of NFs

Classes impact on total score shown in table 13:

Set of Questions	Points	Weighted	% of impact
Class A	3	3	10.71
Class B	3	3	10.71
Class C	3	6	21.43
Class D	3	6	21.43
Class E	2	4	14.29

Class F	3	3	10.71
Class G	3	3	10.71
Total		<u>28</u>	<u>100</u>

Table 13. Classes impact on the total score of the sample of 115 NFs

The set of questions of classes A, B, F and G have similar impact on the total score at 10.71% each, while classes C and D have the most impact with 21.43% each.

9.4 Evaluation criteria Update (from the study of the previous editions of the ITTF MA Categorization tool.

- 1- From the field review conclusion of the SWOT analysis completed in Chapter 3.4, two of the primary opportunities uncovered are the introduction of the new events series “World Table Tennis” and the Introduction of new assessment criteria to strengthen the next edition of the tool. After reviewing the data of the research in Chapter 5.2 of the 2020 ITTF MA Categorization Tool and the field review conclusion of the SWOT analysis done in Chapter 3.4 between the 2018 and 2020 versions of the tool, we will proceed by examining the primary important results of the two chapters.
- 2- The implementation of the new series "World Table Tennis (WTT)":

The analysis conducted in Chapter 3.4 reveals that since 2021, more than 65 senior WTT events have taken place on different continents. One notable event organized by WTT is the WTT Grand Smash series.

The technical criteria employed in the 2020 edition were reviewed and examined to modernize the existing criteria and incorporate novel assessment indicators that would improve the latest version of the categorization tool.

Revision for A2 Technical Criteria:

The WTT Grand Smash series, organized by WTT for senior athletes, is a prestigious event aimed at enhancing the international recognition of the sport. The series commenced in 2022 with an event held in Singapore. In 2023, the series continued with another event in Singapore. However, in 2024, the series is scheduled to have three events taking place in Singapore, Saudi Arabia, and China. The WTT Grand Smash series holds the same degree of importance as the World championship events and should be factored in when evaluating the premium category 1 Member Associations.

According to the information shown in Table 14, the updated requirements for the premium Category 1 Member Associations specify that senior athletes who win a medal at WTT Grand Smash should be included as an additional factor in evaluating the premium Category 1 Member Associations for the A2 technical criteria.

Revised Criteria Description	Category	Index Value in the 2020 MA Categorization Tool	Revised Index Value
A2 Women/Men; Quality criteria – players on the (senior) WRL: Unique players over a period of 2 years; excl. when the only points are from home event	<i>Premium cat. =</i>	<i>Medals at World Title events & Olympic Games</i>	<i>Medals at World Title events, Olympic Games & WTT Grand Smash</i>
	1 st category =	2 or more players in top 50	2 or more players in top 50
	2 nd category =	2 or more players in top 150	2 or more players in top 150
	3 rd category =	2 or more players in top 300	2 or more players in top 300
	4 th A category =	Player(s) ranked over 301 or 1 within top 300	Player(s) ranked over 301 or 1 within top 300
	4 th B category =	No ranked players	No ranked players

Table 14. Updated revised index for the A2 Technical criteria

Revision for A3 Technical Criteria:

The implementation of the WTT Series of events has resulted in a modification of the terminology used by the ITTF. The name "Junior" has been replaced with "Youth" in order to align with the new event series. Additionally, the age group for the Youth events has been adjusted accordingly, as described in Table 15 below,

Youth age Categories Prior to the introduction of WTT	Youth age Categories After to the introduction of WTT
U18	U19
U15	U17
U12	U13

Table 15. Adjustment in the age categories of the youth players' assessment

Furthermore, beginning in 2021, the junior circuit events stopped running as the WTT has assumed the role of organizing junior tournaments, now known as the "WTT Youth Contender" series.

Considering the information provided in this chapter. According to the information in Table 16, it is recommended to modify the age categories in the criteria description for category 1 assessment of criteria A3. The suggested adjustments include changing U18 to U19, U15 to U17, and U12 to U13.

The substitution of the World Junior Circuit (WJC) with the World Table Tennis Youth Contender (WTT YC) is recommended for the 2nd category assessment. In the first category assessment, the World Junior Table Tennis Teams Championships (WJTTC) should be substituted with the World Youth Table Tennis Championships (WYTTC).

Criteria Description in the 2020 edition	Revised Criteria Description	Category	Index Value in the 2020 MA Categorization Tool	Revised Index Value
A3 Women/Men; Youth development (U18, U15, U12): Activity/participation over a period of 2 years; unique players & excl. when hosting events	A3 Women/Men; Youth development (U19, U17, U13): Activity/participation over a period of 2 years; unique players & excl. when hosting events	1 st category =	Top 16 at WJTTC (Team)	Top 16 at WYTTC (Team)
		2 nd category =	WJC events and Continental Youth events; 15 players or more	WTT events and Continental Youth events; 15 players or more
		3 rd category =	HP Program Participation (U12, U15, U18)	HP Program Participation (U13, U17, U19)
		4 th A category =	Regional events, Regional and Continental Hopes	Regional events, Regional and Continental Hopes
		4 th B category =	Poor or no activity	Poor or no activity

Table 16. Updated revised index and criteria description for the A3 Technical criteria

Revision B2 Technical Criteria:

We employed the same methodology for evaluating criterion A3, A2, and B2. The criteria for hosting events must be modified to align with the changing nature of events. The necessary adjustments are outlined in the following table, labeled as Table 17.

Criteria Description	Category	Index Value in the 2020 MA Categorization Tool	Revised Index Value
B2 Hosting of ITTF events:	1 st category =	World events (WTTC, Cups, WTGF & WT)	World events (WTTC, Cups, WTT Contender, WTT *Contender, WTT Feeder, WTT Champions, WTT Grand Smash)
	2 nd category =	Reg./Cont. Championships & Cups + WJTTC, WJC, Challenge Series	Reg./Cont. Championships & Cups + WYTTC, WTT YC, WTT Y*C
	3 rd category =	Not hosting	Not hosting

Table 17. Updated revised index for the B2 Technical criteria

9.5 Introduction of new assessment indicators for the ITTF MA Categorization tool

According to the SWOT Analysis conducted on the 2020 Edition of the tool in the Field Review section of this study, as mentioned in chapter 3, one of the external opportunities identified is the incorporation of additional indicators into our assessment tool to improve the classification of ITTF Members, particularly in areas that were not previously taken into account in earlier editions. The primary criterion for the inclusion of new assessment indicators are as follows:

- 1- Address an evaluation domain that was not included in the previous two versions of the tool.
- 2- Measurable, capable of being directly assessed by ITTF without relying on external data.
- 3- Ensure that the tool's score remains balanced, unbiased, and impartial.

Target criteria:

Upon analyzing the impact of each indicator in the 2020 tool, we have determined that criteria D, "Membership," had the least significant impact on the questionnaire score, accounting for only 2.44% of the total score. This information is presented in Table 18. The primary reason for this minimal impact is that the membership criteria solely evaluate the seniority of ITTF Members by measuring their years of

membership. We feel that membership has a wider scope and may also assess the NF International partnership and social contribution as an ITTF Member.

Criteria 2020 Edition	points	weighted	% of impact
A1 Technical: Activity	4	8	19.51219512
A2 Technical : Quality	4	8	19.51219512
A3 Technical: Juniors Development	4	8	19.51219512
A4 Para Table Tennis	2	4	9.756097561
B1 Match Officials: IU	2	2	4.87804878
B2 Events: Hosting	2	2	4.87804878
C1 Demographics: Population	4	4	9.756097561
C2 Demographics: HDI	4	4	9.756097561
D Membership: Seniority	1	1	2.43902439

Table 18. Indicators impact on the total score of the 2020 Categorization Tool

10 Recommendations

The International Table Tennis Federation (ITTF) Member Association Categorization Tool serves as a crucial mechanism for evaluating and categorizing the performance and engagement of its member associations. Despite its utility, the tool has opportunities for enhancement to ensure it more accurately reflects the diverse and evolving landscape of global table tennis. This chapter presents a series of recommendations aimed at improving the efficacy, fairness, and comprehensiveness of the ITTF Member Association Categorization Tool.

10.1 Summary of Key Findings

The most effective way to assess National Federations' (NFs) external data is through an online questionnaire, organized into four categories for focused analysis, balanced scoring, and simplified reporting. A minimum score ensures consistent comparisons, while a three-scale range effectively records results. The questionnaire assessed the national status of NFs comprehensively, covering various governance and operational aspects, and included a representative sample from 51% of ITTF member associations across five continents. The findings can enhance the ITTF MA Categorization tool, supported by analysis of previous editions to update and introduce new indicators for fair evaluations.

A complete summary of key findings is Shown in Appendix III of this study

10.3 Detailed Recommendation

This chapter is divided into 3 practical actions

- 1- Develop
- 2- Design
- 3- Implement

10.3.1 Develop

Evolution of new criteria and indicators in the 2025 edition of the tool

- 1- Criteria E “new”

The ITTF Development Questionnaire's final score will be included as a distinct primary criterion, referred to as "Criteria E," in the upcoming 2025 tool. This criterion will be used to evaluate Member Associations at the national level.

Criteria Description	Criteria Details	Category	Index Value in the 2024 ITTF Development Online Questionnaire	Points
E Evaluation of Member Associations at the national level	Assessment based on the data collected through the 2024 ITTF Development Online Questionnaire	1 st category =	score of 23 - 28	4
		2 nd category =	score of 18 - 22	3
		3 rd category =	score of 13 - 17	2
		4 th category =	score of 8 - 12	1

Table 19. Assessment Criteria E description and index value

2- Criteria D Update

Update Criteria D from assessing Membership to evaluating Membership and **Engagement** by introducing **two new** evaluation indicators

a- New evaluation indicator: D2 International Relations

This new indicator evaluates the level of international collaboration and partnership among ITTF Members by assessing their participation in the annual ITTF Summit.

Criteria Description	Criteria Details
D2 International Relations: Activity/participation in the annual ITTF Summit Online or Onsite	Over periods of 2 years; participation in the 2023 and 2024 ITTF Summit

Table 20. Assessment Criteria D2 description and details

b- New evaluation indicator: D3 Social contribution

This new indicator evaluates the extent to which ITTF Members contribute to the promotion of table tennis worldwide, expand its global presence, and cultivate a sense of community and inclusivity through their participation in the annual World Table Tennis Day, organized by the ITTF Foundation on April 23rd.

Criteria Description	Criteria Details
D3 Social Contribution: Activity/participation in the World Table Tennis Day	Over periods of 2 years; participation in the 2023 and 2024 World Table Tennis Day

Table 21. Assessment Criteria D3 description and details

3- Introduce a new indicator in the existent Criteria B1 “Match Officials”

Criteria B1 exclusively evaluates the number of certified Level 2 International Umpires per Member Association. It is recommended to additionally consider the number of advanced-level umpires per member association. Therefore, we propose including a new index value that assesses the number of Level 3 Blue Badge Umpires or those in the process of obtaining the Level 3 Blue Badge.

.

10.3.2 Design

The following information shown in Table 22 is the recommended revised 2025 ITTF Member Association Categorization Tool, which incorporates the study conducted in Chapter 6 and the additional recommendations made in Chapter 8.3.1.

Criteria	Criteria Description	Criteria Detail	Category	Index Value	Points
A) Technical Criteria	A1 Women; Activity criteria – number of (senior) players participating at ITTF sanctioned events:	Unique players over a period of 2 years; excl. when host	1 st category =	15 players or more	4
			2 nd category =	6-14 players	3
			3 rd category =	3-5 players	2
			4 th A category =	1-2 players	1
			4 th B category =	0 players	0
	A1 Men; Activity criteria – number of (senior) players participating at ITTF sanctioned events:	Unique players over a period of 2 years; excl. when host	1 st category =	15 players or more	4
			2 nd category =	6-14 players	3
			3 rd category =	3-5 players	2
			4 th A category =	1-2 players	1
			4 th B category =	0 players	0
	A2 Women; Quality criteria – players on the (senior) WRL:	Unique players over a period of 2 years; excl. when the only points are from home event	Premium cat. =	Medals at World Title events, Olympic Games & WTT Grand Smash	x
			1 st category =	2 or more players in top 50	4
			2 nd category =	2 or more players in top 150	3
			3 rd category =	2 or more players in top 300	2
			4 th A category =	Player(s) ranked over 301 or 1 within top 300	1
			4 th B category =	No ranked players	0
	A2 Men; Quality criteria – players on the (senior) WRL:	Unique players over a period of 2 years; excl. when the only points are from home event	Premium cat. =	Medals at World Title events, Olympic Games & WTT Grand Smash	x
			1 st category =	2 or more players in top 50	4
			2 nd category =	2 or more players in top 150	3
			3 rd category =	2 or more players in top 300	2
			4 th A category =	Player(s) ranked over 301 or 1 within top 300	1
			4 th B category =	No ranked players	0
	A3 Women; Youth development (U19, U15, U13):	Activity/participation over a period of 2 years; unique players & excl. when hosting events	1 st category =	Top 16 at WYTTC (Team)	4
			2 nd category =	WTT events and Continental Youth events; 15 players or more	3
			3 rd category =	HP Program Participation (U13, U17, U19)	2
			4 th A category =	Regional events, Regional and Continental Hopes	1
			4 th B category =	Poor or no activity	0
	A3 Men; Youth development (U19, U15, U13):	Activity/participation over a period of 2 years; unique players & excl. when hosting events	1 st category =	Top 16 at WJTTC (Team)	4
			2 nd category =	WJC events and Continental Youth events; 15 players or more	3
			3 rd category =	HP Program Participation (U12, U15, U18)	2
			4 th A category =	Regional events, Regional and Continental Hopes	1
			4 th B category =	Poor or no activity	0
	A4 Women; Para Table Tennis:	Active at PTT events over a period of 2	1 st category =	Active at Continental/International PTT events; more than 4 players	2

	A4 Men; Para Table Tennis:	years; unique player & excl. when host	2 nd category =	Active at Continental/International PTT events; up to 4 players	1
			3 rd category =	Not active at Continental/International PTT events	0
		Active at PTT events over a period of 2 years; unique player & excl. when host	1 st category =	Active at Continental/International PTT events; more than 4 players	2
			2 nd category =	Active at Continental/International PTT events; up to 4 players	1
			3 rd category =	Not active at Continental/International PTT events	0
B) Match Officials & Events	B1 Women; Match Officials:	Certified International Umpires	1 st category =	Has more than 11 International Umpires and at least 1 BB or BB in progress	3
			2 nd category =	Has more than 11 International Umpires	2
			3 rd category =	Has up to 11 International Umpires	1
			4 th category =	Doesn't have International Umpires	0
	B1 Men; Match Officials:	Certified International Umpires	1 st category =	Has more than 11 International Umpires and at least 1 BB or BB in progress	3
			2 nd category =	Has more than 11 International Umpires	2
			3 rd category =	Has up to 11 International Umpires	1
			4 th category =	Doesn't have International Umpires	0
	B2 Hosting of ITTF events:		1 st category =	World events (WTTC, Cups, WTT Contender, WTT *Contender, WTT Feeder, WTT Champions, WTT Grand Smash)	2
			2 nd category =	Reg./Cont. Championships & Cups + WYTTC, WTT YC, WTT Y*C	1
			3 rd category =	Not hosting	0
C) Demographics	C1 Population:	Segmentation of MAS (countries and territories) by population	1 st category =	Up to 1 million	4
			2 nd category =	1 million – 10 million	3
			3 rd category =	10 million– 100 million	2
			4 th category =	100 million and over	1
	C2 Human Development Index*:	Composite index considering life expectancy, education and per capita income indicators	1 st category =	Very high human development	4
			2 nd category =	High human development	3
			3 rd category =	Medium human development	2
			4 th category =	Low human development	1
D) Membership	D1 Years of ITTF membership:		1 st category =	11 years and more	1
			2 nd category =	0-10 years	0
	D2 International Relations: Activity/participation in the annual ITTF Summit Online or Onsite	<i>Over periods of 2 years; participation in the 2023 and 2024 ITTF Summit</i>	1 st category =	<i>participation in two ITTF Summits</i>	2
			2 nd category =	<i>participation in one ITTF Summit</i>	1
			3 rd category =	<i>no participation</i>	0
	D3 Social Contribution: Activity/participation in the World Table Tennis Day	<i>Over periods of 2 years; participation in the 2023 and 2024 World Table Tennis Day</i>	1 st category =	<i>participated in at least one World Table Tennis Day (WTTD)</i>	1
			2 nd category =	<i>no participation</i>	0
E) National Review	E Evaluation of Member Associations at the national level	<i>Assessment based on the data collected through the 2024 ITTF Development Online Questionnaire</i>	1 st category =	<i>score of 23 - 28</i>	4
			2 nd category =	<i>score of 18 - 22</i>	3
			3 rd category =	<i>score of 13 - 17</i>	2
			4 th category =	<i>score of 8 - 12</i>	1

Table 22. The 2025 ITTF Member Association revised Categorization tool

The recommended new version of the ITTF MA Categorization Tool offers a more thorough and up-to-date evaluation for National Federations (NFs). This includes analyzing both internal and external data, as well as considering community engagement and international relations.

10.3.3 Implement

This chapter will outline the proposed action plan and procedures to be taken for the introduction and utilization of the new edition of the ITTF MA Categorization Tool in 2025. The suggested action plan comprises five primary tasks that must be taken into account. This plan serves as a roadmap to implement the new ITTF Categorization system by 2025. The action plan is highlighted in Figure 21 below.

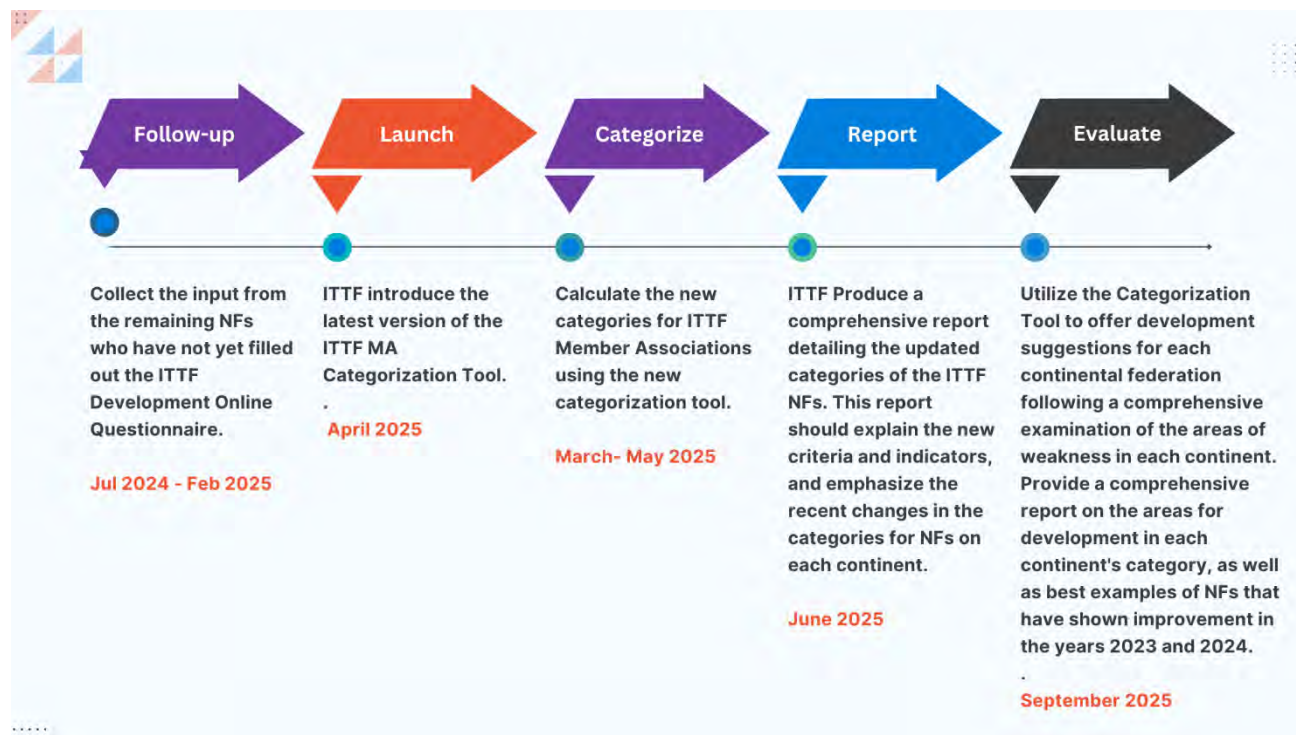


Figure 21. recommended practical action steps for implementing the revised categorization tool

10.4 Limitations

Despite the comprehensive approach adopted in this study to enhance the ITTF Member Association Categorization Tool, several limitations should be acknowledged:

1. Online Questionnaire Response Rate:

The study relied on collecting data through an online questionnaire distributed to national table tennis federations. The response rate and sample of almost 50% of the ITTF NFs used in the study may have been limited by several factors, including lack of internet access, language barriers, and varying levels of engagement from different federations. Consequently, the data collected may not fully represent the views and conditions of all member associations.

2. Data Accuracy and Completeness:

The accuracy and completeness of the data provided by the national federations are dependent on the honesty and thoroughness of the NF representatives filling out the questionnaire. Any inaccuracies or incomplete responses could affect the reliability of the study's findings and the subsequent categorization tool.

3. Subjectivity in Evaluation:

The creation of new evaluation criteria based on national evaluations through questionnaire analysis introduces an element of subjectivity. Different federations may interpret and respond to the questionnaire differently, leading to variations in the assessment outcomes.

4. Temporal Constraints:

The study was conducted within a specific timeframe, which may not have allowed for longitudinal analysis. Changes in federations' performance and governance practices over time could not be fully captured within the study's duration.

5. Impact of Assessment Gaps on NF Evaluation

The previous version of the tool was released in 2020, covering a span of two years, 2018 and 2019. The improved version of the tool is suggested to be launched in 2025, evaluating the performance of the years 2024 and 2023. However, there is a gap in assessing NFs between 2021 and 2022, which could lead to significant changes in various categories when comparing the assessment of NFs between the two tool editions.

10.5 Future Work

1. The use of Regional Descriptive Analysis: Regional Analysis may be applied to the second main group in the ITTF Development Online Questionnaire "NF Development & Events Strategy" in Chapter 9.2.3 of this study. The responses acquired from this section of the questionnaire are grouped into four key categories depending on the continent. These categories might provide suggestions that help guide the creation of the continental development program for the future four-year Olympic cycle from 2025 to 2028.

2. Integration of Advanced Analytics: Incorporating advanced data analytics and machine learning techniques could enhance the accuracy and predictive power of the categorization tool. These technologies can help identify patterns and correlations that might not be evident through traditional analysis methods.

3. Stakeholder Feedback: Regular feedback from national federations and other stakeholders should be incorporated into the tool's development process. Engaging with stakeholders will ensure that the tool remains relevant, user-friendly, and aligned with the needs and expectations of its users.

10.6 Conclusion

In conclusion, the suggestions outlined in this study attempt to offer a thorough plan for improving the ITTF Member Association Categorization Tool. The recommendations are based on a thorough review of the tool's existing structure, the external data obtained from the ITTF MAs via an online questionnaire, and best practices in assessing sports organizations. By analyzing the questionnaire data, we evaluated the NFs using not only in-house data but also external data collected from the NFs, and with such external data, the tool offers a thorough analysis of the NFs. Additionally, we incorporated benchmarking studies from the

ASOIF 5th review and we analyzed the previous editions of the ITTF Categorization tool. This allowed us to fairly evaluate the NFs on a national level, update our existence criteria, and introduce new indicators to enhance the assessment of Memberships and their involvement with the ITTF and the community. The preceding process has resulted in a definitive set of recommended classification criteria and indications that will be included in the subsequent version of the tool. The action plan outlines a sequence of steps that involves engaging with the ITTF MAs from the latter half of 2024 to early 2025. The primary objective is to introduce the new tool in April 2025 and provide a report to the ITTF MAs in June 2025. This assessment will span the two-year period of 2023 and 2024.

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12 Appendix I: 2024 ITTF Development Online Questionnaire

Area	Item
Governance Documentation in place	Constitution Development Plan Inclusion & Diversity Sustainability Strategy/Action Plan Fundraising Strategy
Development of Policies and Regulations for NFs	Financial Policy Human Resources Gender Equality Sustainability COD, Integrity Child Protection Betting Match-fixing Competition manipulation Anti-doping Safeguarding
Integrity within the MA	mechanism and policies concerning Integrity report Investigation into Integrity allegations Member of staff dealing with integrity issues
Professionalization of People and Positions	Full-time Staff (male/female) Volunteer Staff (male/female) Meetings of the Executive Board Board Member male/female number Staff for communication in NF Staff for Development in NF
Capacity Building	Number of clubs/affiliates Number of national athletes (male/female) in each age category Number of national coaches dedicated to talent age groups Full-time active coaches (male/female) Part-time active coaches (male/female) Member Association national team entourage details Number of National umpires Number of National Referees How many TT venues are dedicated and shared venues Equipment availability and agreement with the manufacturer
Integration	Integration of Para Table Tennis with the MA structure Leisure players number Including of table tennis in the school curriculum Post-career programs for elite athletes or any other level
Member Association Development Strategy	Talent Identification program run by the MA High-performance program Number of national TCs per year for each age group Cooperation with any sports Education Faculties/Universities or sports Institutes in the area of Sports science and sports medicine support Number of athletes scholarships available Permanent Training centers available in the country

	Education Programs run by MA Grass root level activities promoted by MA
Events and Competition Management	Number of National Events organized for each age category (able body and PTT) Number of International Events organized National League System National Ranking System Technical committee for national events Streaming/broadcasting of national events Sustainability elements in national events Events Calendar
Integrity	Publishment of Annual Report Meeting minutes on the official website

Table 23. ITTF MA Development Online Questionnaire

13 Appendix II: 2018 vs 2020 ITTF Categorization Tool novelties

		2018	2020
Technical Criteria (Weight x2)	Players activity	Number of (senior) players participating in ITTF-sanctioned events - One of the difficulties posed by this criterion was that both were evaluated identically if the MAs had one or two active players and none at all.	Novelties: introduction of point zero. - If the Member Association has no active players, they will get a zero point on this criteria.
	Players quality:	- Players in the Senior World Ranking List, the scoring depends on the MAs have athletes in the top 50, 150, and 300 in the ITTF World Ranking List	Novelties: 1- introduce bonus premium points, If a National Federation won a medal at World title events and/or Olympic Games. 2- Introduce point Zero: if the national Federation has unranked players, they get a zero point in this criteria
	Junior Athletes Development	Activity/Participation at ITTF-sanctioned youth events, including World Junior Championships, World Junior & Cadet events, Continental Youth events, Regional events, and Hopes talent identification activity.	Novelties: - Introduce participation in the ITTF High Performance activities.
	Para Table Tennis	Activity/Participation at International ITTF Para Table Tennis events. - This criteria solely takes into account the involvement of male or female athletes in any ITTF-sanctioned event.	Novelties: - Introduce 3 position index values for evaluation including the number of players who are active on the international events. - Introduce the gender aspect, evaluating the participation of both male and female athletes.
Match Officials & Hosting Events	Umpires	Certified International Umpire (any gender and any number)	Novelties: - Introduce 3 position index values, taking into consideration a certain number of certified International Umpires. - Introduce the gender aspect, evaluating both male and female match officials.
	Hosting ITTF Events	Wasn't considered	New Criteria added, evaluating hosting different ITTF events.
Demographics	Population	Segmentation of MAs (countries and territories) by population	Same criteria as in 2018
	Human Development Index	Composite index considering life expectance, used by the United Nations to rank countries into four tiers of human development	Same criteria as in 2018
Membership	Years of Seniority	Number of years as an ITTF Member	Same criteria as in 2018

Table 24. 2018 ITTF MA Categorization Tool Criteria and 2020 Tool Novelties

14 Appendix III: Summary of Key Findings

ASOIF 5TH Review for IFs governance

- 1- The most effective method identified to assess the external data of the NFs is through an online questionnaire.
- 2- Grouping the set of indicators for the ITTF online development questionnaire into 4 different groups/categories allows focused analysis within each category, provides clear insights into different dimension of the subject, make it easier to interpret results. It also helps in creating balanced scoring system for the online questionnaire, where each category contributes appropriately to the total score. Finally, it simplifies reporting, by allowing results to be presented in a structure manner.
- 3- Setting a minimum score for the online questionnaire enables a straightforward comparative analysis of the NFs and establish a consistent baseline for evaluating and comparing the results.
- 4- 3 scale ranges is the best method identified to record the scoring of the online questionnaire, and the assess the level of each indicator.

ITTF Development Online Questionnaire

- 1- The questionnaire was able to assess the national status of each NF in depth, which was an important area we lacked in our previous editions of categorization, which only was dependent on an in-house data, the categories of the set of questions covered a wide range of topics on Governance Strategy, Development, Events Strategy, NF Staff Professionalization, NF Leadership assessment, Ethics and inclusion within the NF.
- 2- The sample of 115 NFs in the online questionnaire gave us accurate measures to the national status of 51% of ITTF Members Association and also led to an accurate scoring system and scale range of assessment, furthermore, it gave us an accurate view on a continental base, as the sample included NFs from the 5 continents.
- 3- The Assessment of the total score of the online questionnaire can be elaborated with the ITTF MA Categorization tool as the final score classified the NFs into 4 categories.

Analysis of the previous editions of the ITTF MA Categorization Tool

- 1- The analysis of the new synergies of the ITTF Events supported in updating the current indicators of the categorization tool in order to ensure objective and an updated assessment for the NFs.
- 2- The analysis supported identifying opportunities to introduce new indicators to the current format of the categorization, to ensure fair and impactful evaluation.