

Basketball in Romania: Analysis of human resources

Ioan FEFLEA¹, Janina Maria GHERDAN², Marius I. STUPARIU^{3*}

- ¹ Department of Physical Education, Sports and Physiotherapy, Faculty of Geography, Tourism and Sport, Univesity of Oradea, 1 Universităţii Street, 410087 Oradea, Romania.
- ² "Avram Iancu" Middle School Oradea, 3 Gh. Pop de Băseşti Street, 410252 Oradea, Romania.
- ³ Department of Geography, Tourism and Territorial Planning, Faculty of Geography, Tourism and Sport, Univesity of Oradea, 1 Universităţii St., 410087 Oradea, Romania.

*Correspondence: Marius I. STUPARIU; e-mail: marius_stupariu@didactic.uoradea.ro

Citation: Feflea, I., Gherdan, J.M., & Stupariu, M.I. (2025). Basketball in Romania: Analysis of human resources. *Geosport for Society*, 23(2), 204-230. <https://doi.org/10.30892/gss.2310-143>

Article history: Received: 20.09.2025; Revised: 17.11.2025; Accepted: 25.11.2025; Available online: 02.12.2025

Abstract: This article provides a comprehensive analysis of the evolution of the relationship between coaches and registered sportsmen within the Romanian Basketball Federation and in Romania's sports sections over the period 1992-2024. By examining key indicators such as the average number of sportsmen per coach and the proportion of coaches and sportsmen in sports sections, the study highlights the dynamics of human resources within sports institutions. The analysis focuses on how the Romanian Basketball Federation compares to national trends, offering insights into the development of sports training quality, resource allocation, and the challenges faced by sports organizations in maintaining an optimal balance between coaches and athletes. The findings contribute to a better understanding of the impact of these dynamics on sports performance and provide a basis for strategic planning to enhance the efficiency and effectiveness of sports management in Romania.

Keywords: sports sections, registered athletes, coaches, referees, evolution of human resources

Introduction

The evolution of high-performance sport in Romania has been strongly influenced by the dynamics of human resources within sports sections, both at national level and within specialized sports federations, such as the Romanian Basketball Federation. One of the key factors in the development of sport is the ratio between coaches and athletes, as well as the capacity of these structures to attract, develop and retain specialized technical staff and registered athletes (Giurgiu et al., 2023).

In the context of analysing the evolution of the number of athletes and coaches in the sports sections of the Romanian Basketball Federation and at national level, the period 1992-2024 provides a complex picture of how these resources have changed over time. This article aims to examine the relationship between coaches and registered athletes within sports sections, focusing on two main dimensions: the average number of athletes per coach and the evolution of the proportion of coaches and athletes in relation to the available resources.

By comparing the Romanian Basketball Federation with national trends in Romania, we will highlight the impact of these dynamics on the quality of sports

training, as well as the challenges faced by sports structures in maintaining a balance between the number of coaches and athletes. The analysis of data for the period 1992-2024 will contribute to a deeper understanding of the evolution of these relationships, while also providing a perspective on how strategies for developing human resources in sport can influence future performances in high-performance sport in Romania.

The aim of this study is to analyse, in the long term, the dynamics of the human resources involved in basketball in Romania over the period 1992-2024, based on statistical data provided by the Romanian Basketball Federation. The approach seeks to capture the numerical and structural evolution of the main categories of human resources – sports sections, registered athletes, club coaches and sports referees – both within the federation and in relation to the national sports system as a whole.

Specifically, the study aims to highlight the relationships between these categories (the average number of registered athletes per sports section, the average number of coaches per section, the relationship between the number of coaches and registered athletes), to identify periods of expansion, stagnation or decline, and to reveal possible structural imbalances that may affect the quality of training and sporting performances. Through this analysis, the intention is to provide an empirical framework useful for underpinning the development strategies of the Romanian Basketball Federation, of clubs, and of decision-makers in the field of sports policy.

The analysis of human resources in Romanian basketball is grounded in two complementary strands of literature: human resource management in sports organisations and research on high-performance sport systems and sport development. General management works underline that human resources are the central “capital” of any organisation (Mathis et al, 1997; Manolescu, 2001; Ilieş & Caciora, 2020; Armstrong & Taylor, 2024), while specialised studies on sports clubs in Romania show that performance depends on complex teams of specialists – managers, coaches, medical staff and support personnel – and on the way these are recruited, motivated and retained (Iconomescu et al, 2014). Building on this, Taylor, Doherty and Kerwin (2024) conceptualise an integrated model of human resource management in sport, in which volunteers, administrative staff, coaches and officials form a single “sports workforce” whose structure and quality determine both performance and participation. In parallel, the sport-development literature synthesised by Sherry, Schulenkorf, Phillips and Rowe (2024) treats organisational capacity in terms of the number and quality of people involved – athletes, coaches and club staff – and routinely uses quantitative indicators (for example, athletes per coach, athletes per club) to assess system sustainability.

Within national sport policy, the SPLISS research programme (“Sports Policy factors Leading to International Sporting Success”) explicitly integrates the human resource dimension. Early comparative work by De Bosscher and colleagues on the “global sporting arms race” (De Bosscher et al., 2008) and on methods for comparing elite sport systems (De Bosscher et al., 2010) was later systematised in the SPLISS 2.0 model with nine policy “pillars,” including funding, organisation, infrastructure, talent pathways and the volume and quality of coaches and support staff (De Bosscher et al., 2015). The edited volume by Sotiriadou and De Bosscher (2013) further develops this perspective by linking macro-level policies with micro-level management of athletes, coaches and sport-science services in elite programmes. In these frameworks, indicators such as the number of registered athletes, the size of the coaching corps and average athlete–coach ratios are treated as proxies for the institutional and technical capacity of sport systems, providing a conceptual foundation for the indicators used in this article.

In the basketball-specific literature, the development of the playing population is closely tied to long-term athlete development models and the organisation of club structures. Radu (2010, 2015, 2019) stresses the need for coherent progression pathways structured by age and performance levels, arguing that the density of sections and the athlete–coach ratio are key determinants of training quality and talent nurturing. Policy documents such as the Basketball England talent plan (Basketball England, 2018) adopt similar indicators – number of registered players, number of teams and athlete–coach ratios – as explicit development targets. At the same time, policy and practice increasingly position the coach as a central node in human resources: the European Commission’s Guidelines on minimum skills and competences for coaches (European Commission, 2020) outline core, intermediate and advanced competences and encourage federations to establish certification and continuous education systems, while the BASKI project coordinated by FIBA Europe treats the children’s basketball coach as a key resource for both performance and social outcomes (BASKI Consortium & FIBA Europe, 2019). In this context, works on human resource management (Mathis et al., 1997; Armstrong & Taylor, 2024) and on Romanian club management (Iconomescu et al., 2014) provide a conceptual basis for interpreting data on numbers and ratios of coaches in basketball.

The literature on referees and game officials adds another dimension to the analysis of human resources. In Romania, Martinescu (2014) analyses techniques and strategies for evaluating basketball referees, emphasising that performance in officiating depends on theoretical training, decision-making under pressure and continuous assessment by observers and specialised commissions. Internationally, Ferdinand’s (2019) study of basketball officials shows that professional development opportunities, organisational support and prospects for progression in

the competition hierarchy significantly influence referees' intention to remain active. FIBA's education programmes for referees, although not always formalised in the academic literature, operate with standardised courses, video evaluation and mentoring, reflecting the same logic of continuous human resource development. In this light, the number of registered basketball referees and their share within all sports referees become relevant indicators of a system's capacity to sustain an expanding competition calendar while maintaining officiating quality.

A more recent direction is the explicit construction of indicator models for human resource development in basketball. Jawad, Tabesh and Dousti (2025) design such a model for the Iraqi basketball system, including indicators on the number of players, coaches and referees, athlete-coach and matches-referee ratios, and the territorial distribution of structures. Their approach mirrors SPLISS-type logic by quantifying both the components of the human resource and the relationships between them. By analogy, the indicators used in the present article – number and share of basketball sections, registered athletes, coaches and referees, together with ratios such as athletes per section, coaches per section and athletes per coach – can be interpreted as an adapted set of human resource development indicators for Romanian basketball, compatible with these international frameworks.

In the Central and Eastern European context, sports systems are often analysed through the lens of institutional transition, financial constraints and organisational change, yet systematic studies of basketball federations' human resources remain scarce. Romanian research on sports management points to structural difficulties related to funding, infrastructure and staffing, but seldom follows the long-term evolution of personnel within a single federation (Iconomescu et al., 2014). A first quantitative-spatial approach to Romanian basketball is provided by Pop, Feflea and Marinău (2021), who examine the territorial distribution and geographical dispersion of teams in the men's National League. More recently, Feflea, Gherdan and Stupariu (2023) explore the theoretical impact of geographical factors on basketball, underlining the need to link spatial patterns with institutional and human resource dynamics. At the same time, the works of Radu (2010, 2015, 2019) maintain a primarily methodological and applied focus on coaching and education, rather than on the aggregated volume and structure of human resources. Against this background, a longitudinal, indicator-based analysis of sections, athletes, coaches and referees within the Romanian Basketball Federation positions the present study at the intersection of human resource management, SPLISS-inspired sport-policy analysis and sport-development models (De Bosscher et al., 2008, 2010, 2015; Sotiriadou & De Bosscher, 2013; Sherry et al., 2024), filling a visible gap in the literature on team sports in post-transition East European contexts.

The study aims to analyse, over the period 1992-2024, the numerical and structural dynamics of the human resources involved in basketball in Romania – sports sections, registered athletes, club coaches and referees – both within the Romanian Basketball Federation and in relation to the national sports system, on the basis of consistent statistical series. By constructing and interpreting a set of synthetic indicators (shares within national totals, average numbers of athletes and coaches per section, athletes-to-coach ratios, etc.), the analysis seeks to delineate phases of expansion, stagnation and contraction, to identify structural imbalances between the participant base and the technical and officiating resources, and to infer their implications for the functioning of the federation and for sports policy.

The novelty of the study lies in providing the first longitudinal, indicator-based and system-level diagnosis of human resources in Romanian basketball over more than three decades, adapting SPLISS-type and human resource development frameworks to a single sport discipline and positioning the Romanian Basketball Federation within the broader post-transition East European sports context.

Methodology

The methodology of the study is based on a quantitative, longitudinal and comparative approach, having as main units of analysis the sports sections, registered athletes, coaches and sports referees within the Romanian Basketball Federation, respectively within the entire set of sports sections in Romania, over the period 1992-2024. The analysis relies exclusively on secondary statistical data, drawn from the databases and statistical reports of the Romanian Basketball Federation, supplemented by official, nationally aggregated data on the number of sports sections, registered athletes, coaches and referees in Romania for the same reference period.

For each year in the interval 1992-2024, absolute values were collected regarding: the number of sports sections affiliated to the Romanian Basketball Federation and the total number of sports sections in Romania; the number of registered athletes in the sections of the Romanian Basketball Federation and the total number of registered athletes at national level; the number of coaches and the number of referees within the Romanian Basketball Federation, as well as the corresponding values for all sports structures. On the basis of these time series, derived indicators were constructed that capture both the share of basketball within the national sports system and the internal structure of human resources within the Romanian Basketball Federation.

The indicators calculated include, first of all, proportions (shares, in percent) of sections, athletes, coaches and referees of the Romanian Basketball Federation in relation to the national total (for example, the share of sections of the Romanian

Basketball Federation in the total number of sports sections in Romania). Secondly, a series of structural average indicators were computed, such as: the average number of registered athletes per sports section, the average number of coaches per section, the ratio between the average number of athletes and the average number of coaches (athletes per coach), and the ratio between the average number of registered athletes and sports sections. These indicators were calculated both for the Romanian Basketball Federation and for all sports clubs in Romania, allowing direct comparisons between the internal dynamics of basketball and developments in the national sports system.

Data processing involved calculating absolute and relative variations (increases or decreases compared with the base year and with certain key moments), identifying minimum and maximum values over the entire period and estimating general trends for subperiods (for example, phases of stagnation, expansion or decline). The annual series of each indicator was represented graphically in order to facilitate the observation of inflection points and changes in trend. The comparative analysis between the Romanian Basketball Federation and the whole set of sports sections in Romania examined both convergences and divergences in evolution, with an emphasis on how basketball is positioned in relation to the sports system as a whole.

The interpretation of the results was carried out by correlating the evolution of statistical indicators with the main economic, social and institutional transformations of the post-1990 period (economic transition, periods of crisis, sports development programmes, changes in funding and infrastructure). The causal analysis is therefore predominantly interpretative, starting from the numerical and structural dynamics of human resources and relating them to the broader context of Romanian sport.

The study is subject to limitations inherent in analyses based on administrative data: dependence on the way data are reported and aggregated at the level of the federation and national sports structures, possible changes in definitions and classifications over time, as well as the absence of qualitative variables (coaches' level of training, sports performance, age or gender structure of athletes). Nevertheless, the consistent time series and the synthetic indicators used make it possible to outline a robust picture of the evolution and structure of human resources in Romanian basketball and of its positioning within the sports system of Romania.

Results

Human Resources in Romanian Basketball

The data series for the period 1992-2024 shows a clearly upward overall dynamic of the network of sports sections within the Romanian Basketball Federation, both in absolute values and as a share of the total number of sports sections across all federations in Romania.

In 1992, the Romanian Basketball Federation had 146 sections, corresponding to a share of 1.22% of the total number of sports sections in Romania. Up to 2001, the number of sports sections within the Romanian Basketball Federation fluctuated within a relatively narrow range, between 137 and 146, while their share increased gradually from 1.22% to 2.55%. This combination of numerical stability and percentage growth suggests a slow but steady consolidation of basketball's position within organised sport, through an increase in relative importance even in the absence of a spectacular quantitative expansion of the network of sports sections.

The 2002-2003 interval marks a turning point, with a sharp reduction in the number of sports sections in the Romanian Basketball Federation to 81 and a decline of the share to around 1.70%. From a time-series perspective, this episode may be interpreted as a phase of structural contraction, in which the institutional infrastructure of basketball (measured by the number of sections) is compressed and the discipline's relative position within the sports system temporarily deteriorates.

From 2004 onwards, the series indicates a clear recovery. Between 2004 and 2007, the number of sports sections in the Romanian Basketball Federation increased from 114 to 174, while their share rose from 1.94% to 4.45%. The year 2007 represents the maximum, over the entire analysed period, in terms of the share of basketball sections in the total number of sports sections. This stage can be interpreted as a phase of accelerated expansion, in which basketball strengthens its role in the sports system both by extending its institutional network and by gaining a relatively higher share compared with other sports disciplines.

The period 2008-2012 is characterised by a continued increase in absolute terms (the number of sports sections in the Romanian Basketball Federation grows from 187 to 243), accompanied by a repositioning of the share, which stabilises within a range between 2.65% and 3.07%. Compared with the 2007 peak, the percentage value is lower, but the overall configuration shows a durable integration of basketball within the body of sports disciplines, with a share clearly above the early-1990s phase.

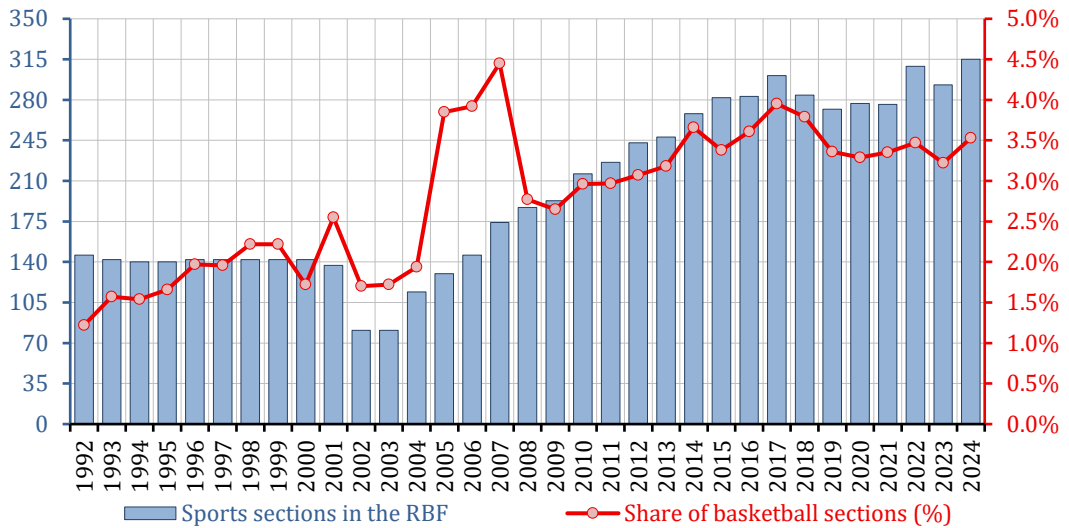


Figure 1. Sports sections in the Romanian Basketball Federation and the share of basketball sections at the national level in the period 1992-2024

In the 2013-2017 interval, the data indicate a new phase of consolidation. The number of sports sections in the Romanian Basketball Federation increases from 248 to 301, and the share remains consistently above 3%, with values between 3.18% and 3.95%. A profile of stability at a high level thus takes shape, in which basketball has already secured a well-established presence in the structure of organised sport, and annual fluctuations remain within moderate limits, without structural setbacks comparable to those of 2002-2003.

For the recent period 2018-2024, the series shows a slight oscillation around an upper plateau. The number of sports sections in the Romanian Basketball Federation remains consistently high (between 272 and 315), and the share stays above the 3% threshold, with values between 3.22% and 3.79%. The year 2024 records the highest absolute number of sections in the analysed series (315), associated with a share of 3.53%. Although this percentage does not exceed the relative maximum of 2007 (4.45%), it confirms that, in the long term, basketball maintains a high and stable share within the national sports system.

Between 1992 and 2024, the number of sections in the Romanian Basketball Federation increases from 146 to 315, while their share in the total number of sports sections rises from 1.22% to 3.53% (Figure 1). The time series captures three main features: (1) a long-term upward trend in the number of sections, with a single phase of severe contraction at the beginning of the 2000s; (2) a clear net increase in basketball's relative share within all sports disciplines, from values below 2% to values above 3%; (3) a transition from a phase of marginal presence in the early

1990s to a phase of institutional consolidation and relative stability in the last decade analysed.

Registered Athletes in the Romanian Basketball Federation

The data series for the period 1992-2024 highlights a substantial growth process in the number of athletes registered with the Romanian Basketball Federation, accompanied by a clear repositioning of basketball within the structure of organised sport, as reflected by the increase in its share of the total number of registered athletes across all sports federations in Romania.

In 1992, 5,015 registered athletes were recorded, corresponding to a share of 1.32%. Between 1993 and 2000, the number of athletes remained stable at the same level (9,825), while their share gradually increased from 3.16% to 4.41%. This combination of numerical stability and percentage growth indicates a consolidation of basketball's position: even in the absence of a quantitative expansion of the athlete base, the discipline gained relative importance compared with other sports.

The 2001-2003 interval marks a pronounced contraction phase. The number of athletes fell to about half of the previous level (5,045 and then below 2,700), and the share dropped below 2%. This sequence can be interpreted as a period of crisis or institutional restructuring, in which both the player base and the relative relevance of basketball within the sports system temporarily diminished.

From 2004 onwards, the series captures a vigorous recovery. The number of registered athletes increased rapidly, exceeding 9,000 in 2005 and 11,000 in 2006, while their share rose to around 8-9%. This stage defines a phase of accelerated expansion, in which basketball recovers and surpasses the losses from the first part of the decade, re-entering the group of disciplines with a significant share in competitive sport as a whole.

The period 2008-2011 is characterised by a moderately upward trend in absolute terms (from around 12,000 to almost 14,700 athletes), against a background of fluctuations in the share between 4 and 6%. An adjustment and stabilisation phase thus emerges, in which the growth of the athlete base is real, but the pace of relative advance may be tempered by the dynamics of other sports disciplines.

Between 2012 and 2017, the data indicate a new phase of sustained expansion. The number of registered athletes increased from over 17,000 to more than 27,000, and the share exceeded the 9-10% threshold. Basketball thus asserted itself as a heavyweight discipline in the national sports landscape, with a robust numerical base and a much higher relative relevance than in the 1990s.

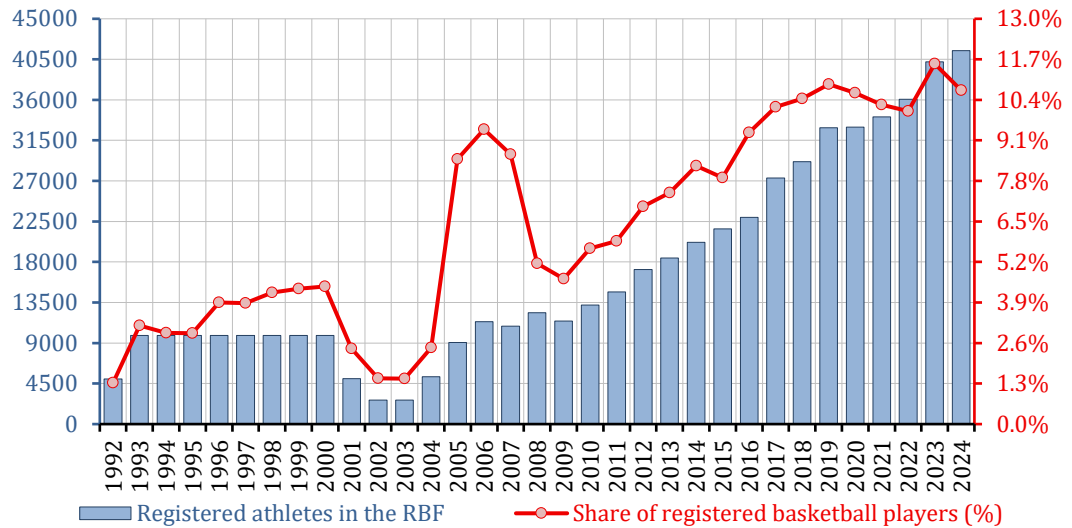


Figure 2. Registered athletes in the Romanian Basketball Federation and the share of athletes registered in basketball sports sections at the national level in the period 1992-2024

In the recent period 2018-2024, a plateau at a high level takes shape, with a continuous increase in the number of athletes (over 29,000 in 2018 and more than 41,000 in 2024) and the maintenance of the share around the 10-12% interval, with a maximum recorded in 2023. Annual fluctuations are small and do not indicate a change in trend, but rather fine adjustments within a context of structural consolidation.

In summary, between 1992 and 2024 the number of athletes registered in the Romanian Basketball Federation increased more than eightfold, while their share rose from 1.32% to over 10% (Figure 2). The time series highlights: (1) a long-term upward trend in the athlete base, with a single phase of severe contraction at the beginning of the 2000s; (2) a marked increase in the relative importance of basketball within the sports system; (3) the transition from the status of a marginal discipline at the beginning of the period to that of a sport with a consolidated position and a high share in the last decade analysed.

Coaches in Clubs Affiliated to the Romanian Basketball Federation

The data series for the period 1992-2024 highlights a long-term growth process in the number of coaches within the Romanian Basketball Federation, accompanied by significant changes in their share of the total number of registered coaches across all sports federations. From the perspective of both variables, several distinct stages can clearly be identified, marked by episodes of expansion as well as phases of contraction or relative stabilisation.

In the interval 1992-2000, the number of coaches remained within a relatively stable range. From 250 in 1992, it reached 291 in most years between 1994 and 2000, which describes a technical structure that was already formed, but without major quantitative extensions. At the same time, the share of basketball coaches in the total number of registered coaches was around 2-3%, with a slight upward trend towards the end of the period. This configuration suggests the existence of a relatively stable technical body, integrated into the sports system but without any significant repositioning in relation to other disciplines.

The period 2001-2004 marks a phase of contraction followed by recovery. The number of coaches initially fell from 291 to 230 and then to 150, while the share dropped towards values below 2%. This sequence can be interpreted as a stage of fragilisation of basketball's technical infrastructure, in which the capacity for coordinating and training athletes is temporarily reduced (see Figure 2). The resumption of growth after 2003, with a return to 204 and then 258 coaches and a share again around the 3% threshold, indicates a process of institutional reconstruction and reconfiguration of the coaching network.

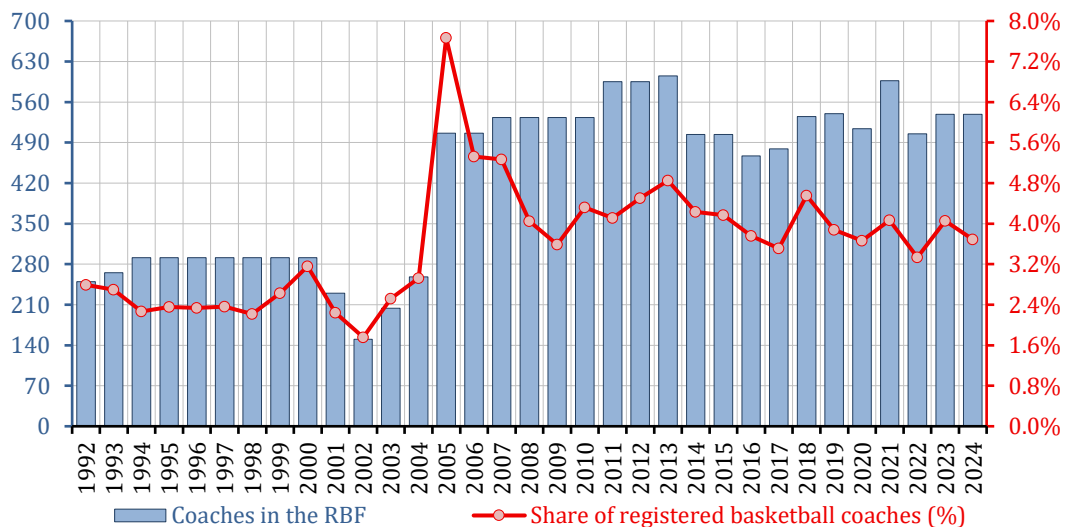


Figure 3. Coaches in the Romanian Basketball Federation and the share of basketball coaches at the national level in the period 1992-2024

The year 2005 represents a turning point in the dynamics of the series. The number of coaches practically doubled compared with the previous year, reaching 506, and the share rose sharply to 7.67%. This change cannot be interpreted as a simple annual fluctuation; it reflects a structural leap, either through the intensification of certification and registration processes or through a reorganisation of the coaching network at federation level. In the following years (2006-2008), absolute values remained at a high level, above 500 coaches, while the

share stabilised at a level higher than in the previous period, around 4-5%, even if lower than the one-off peak in 2005. This suggests the consolidation of a new stage in the development of the technical human resource.

Between 2009 and 2015, the number of coaches generally remained around the same values (between 504 and 605), and the share fluctuated between 3.5 and almost 5%. A phase of stabilisation at a high level thus takes shape, in which basketball benefits from a substantial technical body and annual variations express adjustments rather than trend shifts. The dynamics of the share show that basketball maintains a visible position in the architecture of organised sport, without setbacks comparable to those at the beginning of the 2000s.

In the more recent period, 2016-2024, a pattern of moderate fluctuation within a relatively narrow interval can be observed. The number of coaches varies between 467 and 597, and the share generally remains between 3.3 and 4.6%. Years with slightly higher values (for example 2018, 2021 or 2023) indicate moments of densification of the coaching network, while years with slightly lower values reflect either adjustments in the number of basketball coaches or changes in other sports branches that influence the relative ratio. The absence of abrupt declines and the maintenance of the share above 3% throughout the recent period confirm the stability gained by this component of human resources.

Between 1992 and 2024, the number of coaches in the Romanian Basketball Federation more than doubles, and their share moves from levels around 2-3% to a new plateau, located largely between 3 and 5%, with a distinct peak in 2005. The time series thus describes the transition from a relatively modest but stable technical infrastructure to a much more robust architecture, in which the body of basketball coaches occupies a consolidated place within the national sports system (Figure 3).

Sports Referees in the Romanian Basketball Federation

The data series for the period 1992-2024 highlights a stepwise evolution of the body of referees in the Romanian Basketball Federation, marked by phases of stability, contraction and subsequent consolidation, both in absolute terms and in their share of the total number of registered sports referees.

At the beginning of the interval, in 1992, 175 referees were registered, accounting for 1.22% of all sports referees. In the following years, up to 2000, the number of referees stabilised on a relatively constant plateau, around 120-130 persons, while their share generally fluctuated around the 1% threshold. This combination of numerical stability and low share indicates a referee body sufficient for the functioning of competitions, but with relatively limited significance in the broader architecture of sports officiating at national level.

The 2001-2004 sequence introduces a change of pace. The reduction in the number of referees to 92, followed by a renewed increase to values similar to those of the early 1990s, points to an episode of contraction and reconstruction. In percentage terms, their share initially drops below 1%, then rises again above this threshold. The dynamics suggest a period of institutional recalibration (possibly through regulatory changes, new certification criteria or internal restructuring), in which the referee base is temporarily reduced but subsequently placed back on an upward trajectory.

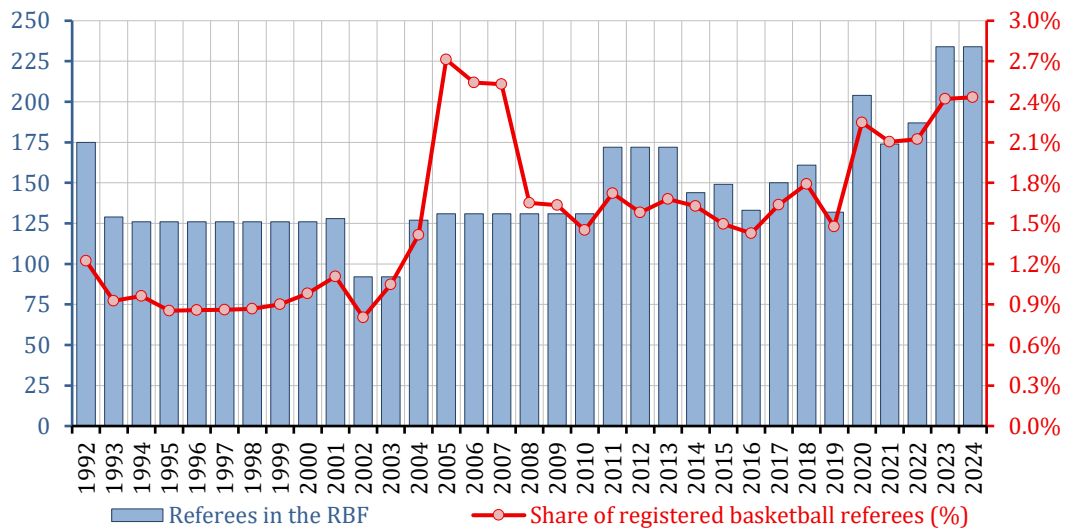


Figure 4. Referees in the Romanian Basketball Federation and the share of basketball referees at the national level in the period 1992-2024

The year 2005 marks a clear inflection point. The number of referees increases and remains at the same level for several years, while their share in the total number of sports referees practically doubles compared with previous intervals, exceeding the 2% threshold. This change does not represent a simple annual fluctuation, but a structural leap: basketball strengthens its position within the field of sports officiating, and the body of referees enters a phase of consolidation at a higher level.

In the period 2008-2017, the data outline a profile of stabilisation on an intermediate plateau. The number of referees generally remains above 130 persons, with episodes of growth (172 referees at the beginning of the decade) and moments of adjustment (moderate decreases to values of 130-150 persons). Their share consistently remains above the levels of the 1990s, situated around the 1.5-2% interval. This stage can be interpreted as a maturation phase: the corps of referees is sufficiently large to support the expansion of the competition calendar, and

basketball's position within sports officiating as a whole becomes stable, without major setbacks.

The 2018-2024 interval reveals a new upward step. The number of referees increases significantly, reaching 204 in 2020 and 234 in 2023-2024, while their share consistently exceeds the 2% level, with values around 2.4% at the end of the period. This configuration indicates a higher-level consolidation of the referee corps, in step with the expansion of the athlete base and the development of the competition network. In practical terms, basketball officiating moves from the status of a modest segment, with a subunitary share in the 1990s, to that of a well-represented component within the architecture of sports refereeing in Romania.

Between 1992 and 2024, three main developments can be observed (Figure 4): (1) an increase in the number of referees in the Romanian Basketball Federation, from an initial level of around 120-130 persons to over 230 in recent years; (2) a doubling of their share in the total number of sports referees, from values of around 1% to values approaching 2.5%; (3) a shift from a phase of relatively discreet presence to a phase of institutional consolidation, in which the body of basketball referees becomes a stable and visible element of the national sports system.

Ratio Between the Average Number of Registered Athletes and Sports Sections of the Romanian Basketball Federation

The data series for the period 1992-2024 compares the ratio between the average number of athletes per sports section for all federations in Romania and the average number of athletes per sports section in the Romanian Basketball Federation, supplemented by the percentage difference between the two values. This ratio functions as a synthetic indicator of the degree of "overloading" or "underloading" of basketball sections relative to the "average section" model in Romanian sport, and is essential for understanding the structure and distribution of human resources in Romanian basketball.

At national level, the average number of athletes per sports section remains, over the entire 1992-2024 interval, within a relatively narrow range, with values between 26.9 athletes per section (in 2000) and 43.4 athletes per section (in 2024). The series starts at 31.8 athletes per section in 1992, rises to almost 40 athletes per section in the mid-1990s, temporarily drops to the minimum of 26.9 in 2000, and then stabilises, in most years, around 30-40 athletes per section. Comparing the ends of the interval, there is an increase from 31.8 athletes per section in 1992 to 43.4 in 2024, which represents an advance of approximately 36.5% over the initial level. From a structural perspective, the utilisation model of sports sections at system level proves relatively stable: the expansion of the base of registered athletes

appears to be accompanied by a relatively proportional adjustment of the number of sections, without systemic jumps or ruptures in the mode of organisation.

Against this backdrop, the values corresponding to the Romanian Basketball Federation show a clearly distinct profile, marked by a much higher intensity of section utilisation. The average number of athletes per section in the Romanian Basketball Federation starts at 34.3 athletes per section in 1992 and reaches 131.7 athletes per section in 2024. The increase is almost fourfold (plus 97.4 athletes per section), corresponding to a rise of approximately 284% compared with the starting year. Over the interval, several phases can clearly be distinguished: in the period 1992-2000, most values are around 69.2 athletes per section (with the exception of 1992), which already in the first decade means a load almost twice as high as the national average. By contrast, the 2001-2003 interval brings a sharp setback, with values of 36.8 and 33.0 athletes per section, close to or even below the national level. Subsequently, the Romanian Basketball Federation returns to an upward trajectory: 46.0 athletes per section in 2004, over 60 athletes per section in 2005-2008 and over 70 athletes per section after 2012. In the last decade, values consistently exceed the threshold of 100 athletes per section, with a peak of 137.3 in 2023 and 131.7 in 2024, confirming a very high density of human resources within basketball sections.

The indicator “percentage difference” between the average number of athletes per section in the Romanian Basketball Federation and the average number of athletes per section at national level synthesises these trends. With the exception of the 2001-2003 period, values are consistently positive and, in many years, very high. At the beginning of the series, in 1992, the difference is modest, at 8%, meaning that basketball sections concentrate only slightly more athletes than the “average section” in the system. From 1993 onwards, however, the differences increase rapidly: 101% in 1993, 89% in 1994, 76-98% in the remaining years of the 1990s, indicating that the load of Romanian Basketball Federation sections is almost double the national average. The extreme situation is reached in 2000 when, against the background of a national minimum of 26.9 athletes per section, the Romanian Basketball Federation maintains 69.2 athletes per section, resulting in a surplus of 157%.

The only period in which the ratio is reversed is 2001-2003, when the percentage difference becomes negative: -5% in 2001, -14% in 2002 and -15% in 2003. In these years, the average number of athletes per section in the Romanian Basketball Federation (36.8 and 33.0) is slightly below or close to the national indicator (38.9 and 38.1-38.9). This change of sign coincides with the contraction phase of the Romanian Basketball Federation network identified in the series for the total number of athletes and sections, and can be interpreted as a moment of

structural recalibration: the reorganisation of sections, the temporary reduction of the athlete base and the re-arrangement of the institutional network bring, for a short time, the utilisation profile of basketball sections closer to the average model of Romanian sport.

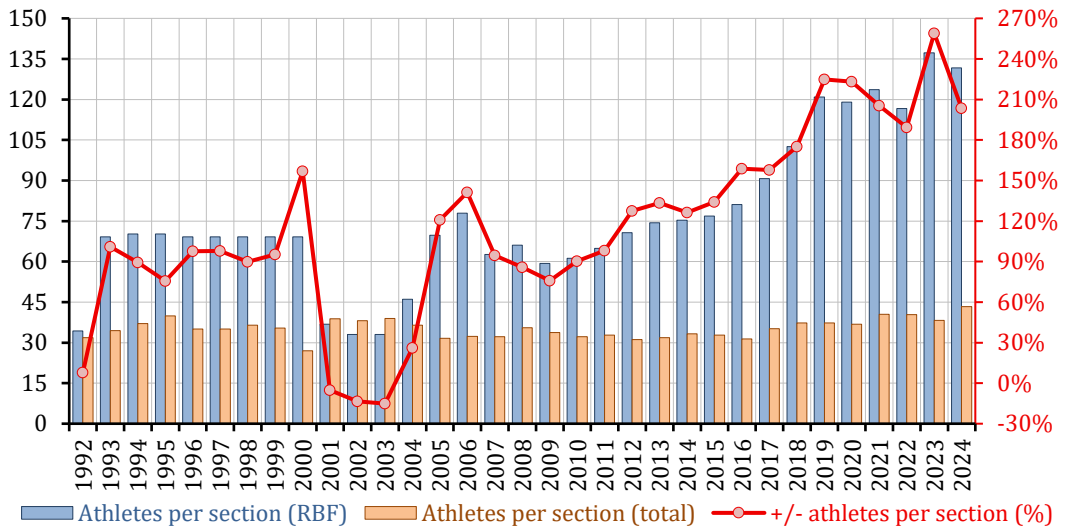


Figure 5. The average number of athletes per sports section in the Romanian Basketball Federation, the average number of athletes per sports section at the national level, and the percentage difference between the average number of athletes per sports section in the Romanian Basketball Federation and the average number of athletes per sports section at the national level in the period 1992-2024

After 2004, the percentage difference returns firmly in favour of the Romanian Basketball Federation and increases steadily. In 2004, basketball sections have 26% more athletes than the national average; in 2005 the surplus reaches 121%, in 2006 141%, and in the following years it stabilises briefly around 80-100%. From 2012 onwards, the differences become structurally very high: 127% in 2012, 133% in 2013, 126-134% in 2014-2015, 159% in 2016 and 158% in 2017, meaning that the sections of the Romanian Basketball Federation concentrate 2.3-2.6 times more athletes than the average section in the system. After 2018, the ratio intensifies even further: 175% in 2018, 225% in 2019, 223% in 2020, 205% in 2021, 189% in 2022, 259% in 2023 and 204% in 2024. In practical terms, in 2019-2023, basketball sections consistently serve more than three times as many athletes as the national average, with the maximum value reached in 2023, when the Romanian Basketball Federation / national level ratio exceeds 3.5:1 (137.3 versus 38.2 athletes per section).

From a human resources analysis perspective, these differences indicate that the growth rate of the number of registered athletes in basketball has significantly

outpaced the rate of expansion of the section network in the Romanian Basketball Federation, whereas at national level the two trends have remained closer. Basketball sections thus become organisational units with a very high athlete density, a situation that can simultaneously be interpreted as an indicator of the discipline's attractiveness and of its capacity to retain participants, but also as a signal of structural pressure on institutional infrastructure and on the body of coaches and referees.

The ratio between the average number of athletes per sports section at national level and the average number of athletes per section in the Romanian Basketball Federation highlights a pronounced particularity of basketball in the Romanian sports landscape: in the long term, Romanian Basketball Federation sections operate under a much more intensive utilisation regime than sports sections as a whole. The "normalisation" episode of 2001-2003 does not alter the general trend but represents only a recalibration moment followed by a recovery to even higher levels. This structural concentration of human resources naturally requires that data on athletes per section be integrated into any discussion on the planning, sizing and distribution of human resources in Romanian basketball.

Ratio Between the Average Number of Coaches and Sports Sections of the Romanian Basketball Federation

The data series for the period 1992-2024 makes it possible to examine comparatively the average technical capacity of sports sections in Romania by relating the average number of coaches per section at national level and within the Romanian Basketball Federation (FRB). The percentage difference between the two indicators expresses the deviation of basketball's technical structure from the "average model" of the sports system, that is, the extent to which the Romanian Basketball Federation sections are better or less well served in terms of coaching resources than sports sections at national level.

For all federations combined, the average number of coaches per sports section remains within a relatively narrow interval, with values between 0.8 coaches per section (1992) and 2.6 coaches per section (2006-2007). The series starts from 0.8 in 1992, gradually rises towards 1.7-2.1 in the second half of the 1990s, temporarily drops to 1.1 in 2000, then generally settles between 1.5 and 2.0 coaches per section. On average, over the entire period, the "typical" sports section in Romania has about 1.7 coaches. A slight increase in technical capacity is observed in the first half of the 2000s (the peak of 2.6 coaches per section), followed by a return to a more moderate plateau of around 1.6-1.8 coaches per section in the last decade. Structurally, this suggests that the organisation of coaching resources at system

level does not undergo radical transformations, but rather relatively fine adjustments around a stable model.

The profile of the Romanian Basketball Federation is, however, distinct. The average number of coaches per section in the Romanian Basketball Federation starts from 1.7 in 1992, remains around 2.0 throughout almost the entire 1990s and reaches 2.5 coaches per section in 2003. The period 2005-2007 marks a clear peak: 3.9 coaches per section in 2005, 3.5 in 2006 and 3.1 in 2007, values clearly higher than both the national average and the Romanian Basketball Federation's own earlier levels. Subsequently, the indicator gradually decreases, stabilising between 1.7 and 2.2 coaches per section in the 2014-2024 interval. Over the whole period 1992-2024, the Romanian Basketball Federation sections have, on average, about 2.2 coaches per section, therefore significantly above the national average of 1.7, even though the magnitude of this advantage varies over time.

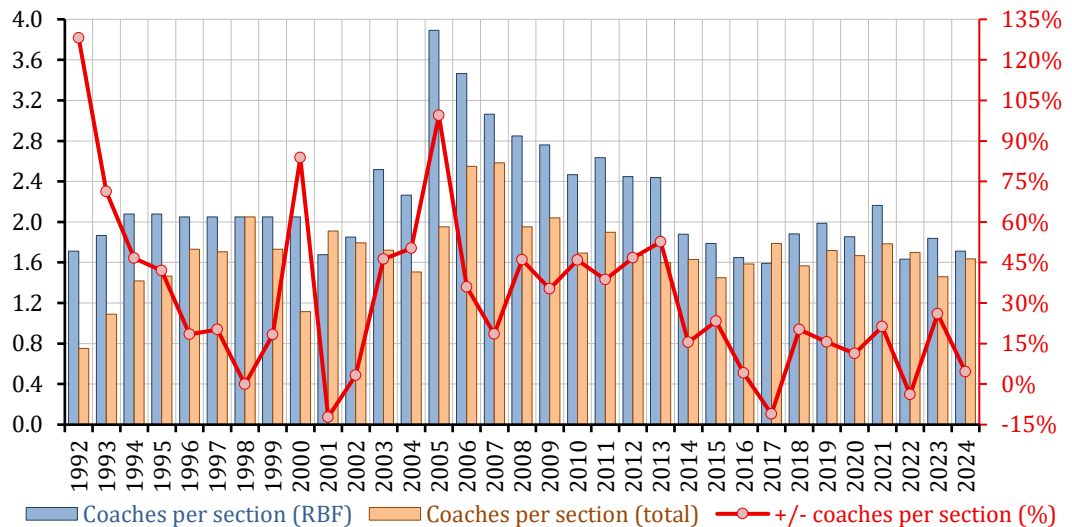


Figure 6. The average number of coaches per sports section in the Romanian Basketball Federation, the average number of coaches per sports section at the national level, and the percentage difference between the average number of coaches per sports section in the Romanian Basketball Federation and the average number of coaches per sports section at the national level in the period 1992-2024

The percentage difference between the two indicators synthesises these relationships. In the vast majority of years, the values are positive, indicating that basketball sections have more coaches than the average sports section in Romania. In 1992, the difference is very high (128%), which, combined with the absolute values (0.8 coaches per section at national level and 1.7 in the Romanian Basketball Federation), indicates more than twice as many coaches per section in basketball compared with the system average. In the following years, the difference moderates

but remains substantial: between 40% and 100% in the period 1993-2000, with a particularly notable episode in 2000, when the national average drops to 1.1 coaches per section while the Romanian Basketball Federation maintains 2.0 coaches per section, resulting in an 84% advantage.

There are also a few moments of convergence or even reversal of the ratio. In 1998, the percentage difference is zero, indicating equality between the average number of coaches per section at national level and in the Romanian Basketball Federation (2.1 and 2.0 coaches per section respectively, practically very similar values). In 2001, 2017 and 2022, the difference becomes negative (between -4% and -12%), and the absolute values confirm that, in these years, the Romanian Basketball Federation sections have slightly fewer coaches per section than the national average (for example, 1.9 coaches per section at national level and 1.7 in the Romanian Basketball Federation in 2001; 1.8 versus 1.6 in 2017). These years mark episodes of relative “underdimensioning” of the coaching workforce in basketball.

After 2003, the Romanian Basketball Federation’s advantage is rapidly rebuilt and reaches a maximum in 2005, when the percentage difference climbs to 99%: with 3.9 coaches per section in the Romanian Basketball Federation compared with 2.0 at national level, basketball sections are almost twice as well provided for in technical staff. The period 2004-2013 is, overall, characterised by moderate to high positive differences (generally between 35% and 53%), which reflects a pattern in which the Romanian Basketball Federation sections consistently have more coaches than the average sections in the system. In the 2014-2024 interval, the differences decrease but remain mostly positive, ranging from values close to zero (4-5%) to episodes with a 20-26% advantage for basketball (for example in 2018, 2021 and 2023). Over the entire period 1992-2024, the average percentage difference is on the order of 30%, which means that, structurally, the Romanian Basketball Federation sections have, on average, about one third more coaches than sports sections as a whole.

In the logic of human resource analysis in Romanian basketball, these results suggest that, although the Romanian Basketball Federation has consistently benefited from a technical structure slightly superior to the national average (more coaches per section), its advantage is more modest than in the case of athletes per section. In other words, basketball sections concentrate not only a very large number of athletes, but also a relatively higher number of coaches; however, the growth rates are not perfectly synchronised. Episodes in which the Romanian Basketball Federation approaches or falls slightly below the national average signal moments of tension between the expansion of the participant base and the capacity to adjust the coaching workforce. In the long term, the ratio between the average number of coaches per sports section at national level and the average number of

coaches per section in the Romanian Basketball Federation sketches the image of a system in which basketball generally enjoys a relatively denser technical infrastructure than Romanian sport as a whole, but also of a field in which the balance between technical and competitive resources remains fragile and requires careful monitoring (Figure 6).

Ratio Between the Number of Coaches and Registered Athletes in Sports Sections of the Romanian Basketball Federation

The series for the period 1992-2024 makes it possible to analyse the relationship between the participant base and the technical resource by means of the indicator “average number of athletes per coach”, calculated both for all sports federations in Romania and separately for the Romanian Basketball Federation. The percentage difference between the two indicators directly expresses the degree of workload of basketball coaches compared with coaches in the sports system as a whole.

At national level, the average number of athletes per coach decreases from 42.4 athletes/coach in 1992 to 26.5 athletes/coach in 2024, with a minimum of 12.4 athletes/coach in 2007. The mean for the entire interval is 21.78 athletes/coach. Two major developments stand out: first, a rapid reduction of the ratio in the 1990s and early 2000s, when values fall from over 40 to almost 20 athletes per coach; second, a long-term stabilisation with values generally between 19 and 26 athletes/coach after 2005. For 1992-2000, the average is 25.62 athletes/coach; between 2001 and 2004, 22.08 athletes/coach; between 2005 and 2013, 16.76 athletes/coach; and in the interval 2014-2024 the average rises to 22.65 athletes/coach. From the point of view of organising the technical resource, the national sports system thus evolves from a highly loaded model in the early 1990s towards a much more balanced model in the last two decades.

In the Romanian Basketball Federation, values are systematically higher in the long term and show a different internal dynamic. The average number of athletes per coach starts from 20.1 athletes/coach in 1992, drops to a minimum of 13.1 athletes/coach in 2003, and rises to 76.9 athletes/coach in 2024. The mean over the entire interval is 37.27 athletes/coach, that is, 15.49 athletes/coach above the national average. In the sub-period 1992-2000, the Romanian Basketball Federation records an average of 32.64 athletes/coach (versus 25.62 nationally), which means that a basketball coach works, on average, with 7.02 more athletes than an “average” coach in Romania. Between 2001 and 2004, the relationship is reversed: the Romanian Basketball Federation’s average is 18.28 athletes/coach, below the national average of 22.08, an interval that also corresponds, in other indicators, to a phase of contraction and reorganisation of the basketball system. In 2005-2013, the

Romanian Basketball Federation average increases to 23.82 athletes/coach compared with 16.76 nationally, and in 2014-2024 it climbs to 58.96 athletes/coach, while the national average is 22.65. This last sub-period thus marks a change in scale: a basketball coach coordinates, on average, more than 58 athletes, compared with roughly 23 in the rest of the system.

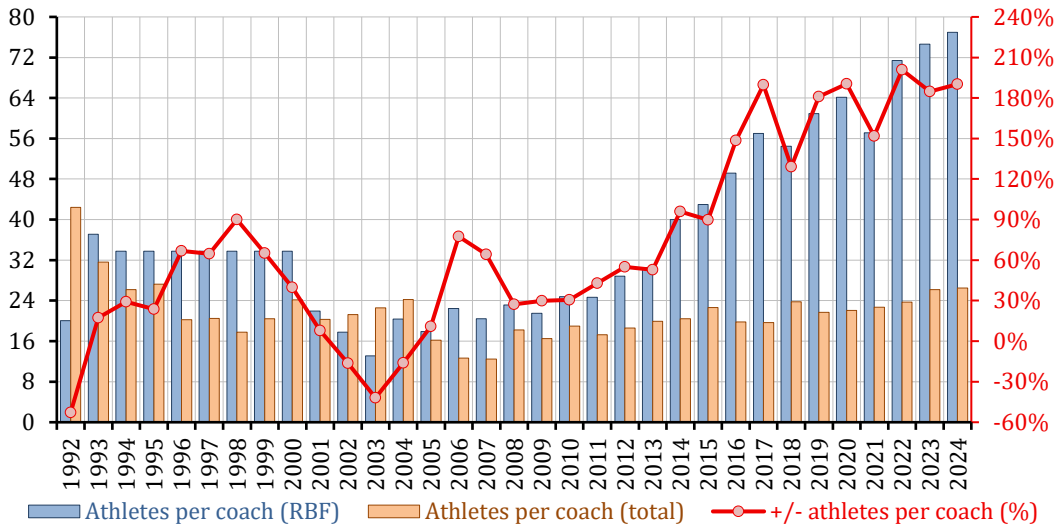


Figure 7. The average number of athletes per coach in the Romanian Basketball Federation, the average number of athletes per coach at the national level, and the percentage difference between the average number of athletes per coach in the Romanian Basketball Federation and the average number of athletes per coach at the national level in the period 1992-2024

The percentage difference between the two indicators synthesises this evolution. Over the entire 1992-2024 interval, the mean difference is 73.36%, which means that, on average, a coach in the Romanian Basketball Federation is responsible for 73.36% more athletes than a coach in the set of all federations. In 1992-2000, the mean difference is 38.22%: the Romanian Basketball Federation is already above the national level, but in a still moderate band. Between 2001 and 2004, the mean difference becomes negative, -16.50%, reflecting the fact that in those years basketball coaches are less loaded than the national average, in line with the phase of institutional contraction. In 2005-2013, the mean difference rises to 43.33%, and in 2014-2024 it reaches 159.36%. This last value corresponds to an average the Romanian Basketball Federation / national ratio of 2.60, that is, a coach in the Romanian Basketball Federation works with 2.60 athletes for every one athlete assigned to a coach in the set of all federations.

Taken together, these results show that the growth of the number of registered athletes in the Romanian Basketball Federation has clearly outpaced the expansion capacity of the coaching corps. At the beginning of the analysed interval,

basketball benefits from a relatively favourable situation, with an athletes/coach ratio below the national average, meaning more comfortable technical coverage. After the mid-1990s, as the national average decreases and the Romanian Basketball Federation maintains or increases the number of athletes per coach, basketball enters a regime in which coaches are more loaded than in the rest of the system. Following the rebalancing episode in the early 2000s, the differential gradually widens, and in the last decade basketball coaches end up working structurally with more than two and a half times as many athletes as coaches in other sports.

The ratio between the average number of athletes per coach at national level and in the Romanian Basketball Federation points to a structural tension in the technical component of human resources in basketball. Basketball sections manage to attract and retain a very large number of athletes, but the distribution and sizing of the coaching corps have not kept pace. This situation raises direct questions regarding the quality of the training process, the possibility of individualising training, and the need for policies to strengthen and expand the technical human resource in Romanian basketball (Figure 7).

Discussion

The longitudinal analysis of the period 1992-2024 shows that Romanian basketball has undergone a profound process of institutional consolidation within the national sports system. The number of sports sections in the Romanian Basketball Federation more than doubles, and their share in the total number of sections rises from a marginal level to a stable position above three percent in the last decade. This evolution is fully consistent with sport-development models that regard club density and section networks as basic indicators of organisational capacity (De Bosscher et al., 2015; Sherry et al., 2024). The temporary contraction of 2002–2003, followed by rapid recovery and stabilisation on a higher plateau, can be interpreted as a recalibration phase typical of post-transition systems in Central and Eastern Europe, where institutional restructuring and changes in funding mechanisms periodically reconfigure the club landscape (Iconomescu et al., 2014).

At the level of the playing population, the results are even more pronounced. The number of athletes registered in the RBF increases more than eightfold, and their share in the national total moves from around one percent to values above ten percent, with a maximum in the early 2020s. From the perspective of sport-development literature, this trajectory signals the successful positioning of basketball as a mass-participation team sport, comparable to the objectives formulated in development plans of other European federations, where increasing the number of registered players and teams is a central strategic priority (Basketball England, 2018; Radu, 2019). The RBF thus moves, over the three decades analysed,

from the status of a secondary discipline to that of a core component of the Romanian sports portfolio, with a robust and diversified participant base (Erdely et al., 2020).

The evolution of the technical human resource reveals a more nuanced picture. The number of coaches affiliated to the RBF more than doubles, and their share of the national coaching workforce climbs from around two–three percent to a higher plateau between three and five percent, with a clear structural leap in 2005. This expansion indicates that basketball has gradually built a substantial technical infrastructure, in line with the emphasis placed by human resource management literature on the central role of coaches in organising the training process and mediating performance outcomes (Mathis et al., 1997; Armstrong & Taylor, 2024). At the same time, the dynamics are not perfectly synchronised with those of the athlete base. While the number of registered players grows very rapidly, especially after 2004, the coaching corps expands at a slower pace, and the RBF's relative advantage in terms of coaches per section tends to diminish over the last decade. This desynchronisation suggests a gradual erosion of the “buffer” that coaches provide in managing the enlarged participant base.

The trajectory of the referee corps is marked by stepwise consolidation. Starting from a modest share of around one percent of all sports referees, the number of basketball referees and their national share roughly double over the period, with a first structural leap in the mid-2000s and a new upward step after 2018. The sequence of contraction and reconstruction at the beginning of the 2000s, followed by stabilisation and subsequent expansion, is compatible with findings from international research on basketball officials, which underline the sensitivity of this category to certification rules, development opportunities and organisational support (Ferdinand, 2019). By the end of the period, basketball officiating has moved from a relatively discreet presence to a stable and visible component of the national refereeing system, able to support an expanded competition calendar. However, the relative growth of referees remains more moderate than that of athletes, suggesting that the officiating resource, while strengthened, must be carefully monitored in relation to the volume and density of competitions.

The derived indicators clarify the internal relationships between these components of human resources and highlight the main structural tensions. At national level, the “average section” operates with approximately 30–40 athletes throughout the period, and the average number of athletes per coach decreases substantially, reflecting a long-term trend towards reducing individual workload and improving the balance between technical staff and participants. In contrast, RBF sections become organisational units with a very high athlete density: the average number of athletes per section rises from around 34 at the beginning of the period

to more than 130 at the end, and for most of the last decade basketball sections consistently manage at least twice, and often more than three times, as many athletes as the national average. From the perspective of human-resource development models in basketball (Radu, 2019; Jawad et al., 2025), such concentrations can be read simultaneously as a sign of the sport's attractiveness and of potential pressure on institutional and technical capacities.

The ratio of coaches per section reinforces this interpretation. Over the whole interval, RBF sections generally benefit from a slightly denser technical infrastructure than the "average" sports section in Romania, with an overall surplus of roughly one third more coaches per section. This relative advantage, however, is modest compared with the much sharper differences recorded for athletes per section, and it tends to narrow in the most recent decade. Isolated years in which the indicator falls to or below national levels signal episodes of under-dimensioning of the coaching resource in relation to the expansion of the competition and training network. In the language of human resource management in sport (Taylor et al., 2024), the RBF appears to have built an acceptable quantitative base of coaches, but faces increasing challenges in aligning the size and distribution of this workforce with the accelerated growth of the athlete population.

The most sensitive indicator is the athletes-to-coach ratio. While the national sports system evolves from a highly loaded model in the early 1990s towards a more balanced configuration – with the average number of athletes per coach decreasing and stabilising at relatively moderate values – the RBF follows an opposite trajectory. After a short period of rebalancing at the beginning of the 2000s, the ratio increases steadily, and in the last decade basketball coaches work, on average, with more than two and a half times as many athletes as their colleagues in other sports. From the viewpoint of long-term athlete development and training quality, such values raise legitimate concerns. The literature on coaching and youth basketball emphasises the importance of manageable group sizes and of individualised feedback in supporting technical and tactical progression (Radu, 2015, 2019). When the athlete-to-coach ratio rises to very high levels, the capacity to offer differentiated training, to monitor workload and to prevent injuries is likely to be diminished, even if the formal number of coaches appears "sufficient" at aggregate level.

Taken together, these results draw the profile of a sport that has been highly successful in expanding its institutional base and attracting participants, but in which the human infrastructure responsible for training and officiating has not fully kept pace with this expansion. In SPLISS terms, basketball in Romania has strengthened pillars related to participation and club network, while pillars associated with coaching and support staff have evolved more slowly and unevenly

(De Bosscher et al., 2015; Papp et al., 2019). From a policy perspective, the main vulnerability of the system is no longer the volume of the selection base, but the balance between this base and the technical and officiating capacities that sustain it. In line with international guidelines on coaching competences (European Commission, 2020) and with national analyses of sports-club management (Iconomescu et al., 2014), the findings suggest that the next stage in the development of Romanian basketball should prioritise the consolidation of the corps of coaches and referees – quantitatively, territorially and qualitatively – so that the internal structure of human resources becomes coherent with the size, ambitions and performance objectives of the Romanian Basketball Federation.

Conclusions

The study shows that a longitudinal, indicator-based perspective on sections, athletes, coaches and referees offers a coherent diagnosis of Romanian basketball as a system, revealing structural tensions and trajectories that cannot be captured through isolated statistics or results tables. By positioning the Romanian Basketball Federation within the wider national sports system and operationalising concepts from human resource management and sport-development models, the analysis turns abstract frameworks into a concrete tool for monitoring institutional and technical capacity in a single team sport. From a policy perspective, the findings support a reorientation from purely quantitative expansion goals towards integrated human-resource strategies that coordinate the recruitment, education and territorial distribution of coaches and referees with the scale of the participant base; future research should complement similar indicator sets with qualitative data on competence profiles, career paths and organisational practices, in order to evaluate not only the volume but also the quality and sustainability of human resources in Romanian basketball.

Author contributions: Conceptualization, I.F., J.M.G. and M.I.S.; methodology, I.F. and M.I.S.; formal analysis, J.M.G. and M.I.S.; investigation, M.I.S.; writing - original draft preparation, I.F., J.M.G. and M.I.S.; writing - review and editing, J.M.G. and M.I.S.; supervision, I.F. All authors have read and agreed to the published version of the manuscript.

Acknowledgements: Not applicable.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this paper may be obtained on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Armstrong, M., & Taylor, S. (2024). *Manualul Armstrong : managementul resurselor umane : ghid de teorie și bune practici [Armstrong's Handbook: Human Resource Management – A Guide to Theory and Good Practice]*. Prior, Bucharest, Romania.
- Basketball England. (2018). *Basketball England talent plan 2018* [Policy document]. Basketball England.
- BASKI Consortium & FIBA Europe. (2019). *Basketball for life skills (BASKI): Coach-the-coach curriculum and open resource toolbox*. Erasmus+ Programme of the European Union. Project number: 613606-EPP-1-2019-1-CY-SPO-SCP.
- De Bosscher, V., Bingham, J., Shibli, S., Van Bottenburg, M., & De Knop, P. (2008). *The global sporting arms race: An international comparative study on sports policy factors leading to international sporting success*. Meyer & Meyer Sport, Aachen, Germany.
- De Bosscher, V., Shibli, S., Van Bottenburg, M., De Knop, P., & Truyens, J. (2010). Developing a method for comparing the elite sport systems and policies of nations: A mixed research methods approach. *Journal of Sport Management*, 24(5), 567-600. <https://doi.org/10.1123/jsm.24.5.567>
- De Bosscher, V., Shibli, S., Westerbeek, H., & Van Bottenburg, M. (2015). *Successful elite sport policies: An international comparison of the Sports Policy factors Leading to International Sporting Success (SPLISS 2.0 in 15 nations)*. Meyer & Meyer Sport, Aachen, Germany.
- Erdely, Ș., Caciora, T., Șerbescu, C., Papp, B. M., Tamas, F. A., Bujorean, E., ... & Herman, G. V. (2020). Trends in the lifestyle of students. Case study of a high school in Oradea, Romania. *Geosport for Society*, 12(1), 1-12.
- European Commission. (2020). *Guidelines regarding the minimum requirements in skills and competences for coaches*. Publications Office of the European Union.
- Feflea, I., Gherdan, J.M., & Stupariu, M.I. (2023). Theoretical aspects of the impact of geographical factors on the basketball game. *Geosport for Society*, 19(2), 132-144. <https://doi.org/10.30892/gss.1909-103>
- Ferdinand, N. (2019). *Basketball officials' training and development: Links to retention* (Master's thesis, University of Mississippi). University of Mississippi, Electronic Theses and Dissertations, 1751.
- Giurgiu, L.R., Damian, C., Sabău, A. M., Caciora, T., & Călin, F.M. (2023). Depression related to COVID-19, coping, and hopelessness in sports students. *Brain Sciences*, 14(6), 563. <https://doi.org/10.3390/brainsci14060563>
- Iconomescu, T.M., Mindrescu, V., & Badau, D. (2014). *Importance of human resources in sports clubs and in sports performance management*. Gymnasium: Scientific Journal of Education, Sports and Health, 15(2).
- Ilieș, A., Caciora, T. (2020). Mapping the Scottish university football competitions. A dual performance model: organized sports and professional training. *Geosport for Society*, 12(1), 72-90. <https://doi.org/10.30892/gss.1208-061>
- Jawad, A.H., Tabesh, S., & Dousti, M. (2025). Designing a model of human resource development indicators in the Iraq basketball system. *Human Resource Management in Sport*, 12(1), 197-214. <https://doi.org/10.22044/shm.2024.14364.2631>
- Manolescu, A. (2001). *Managementul resurselor umane [Human resource management]* (3rd ed.). Editura Economică, Bucharest, Romania.
- Martinescu, F. (2014). Techniques and strategies for the evaluation of basketball referees. *Buletin Științific*, 19(1).
- Mathis, R.L., Nica, P.C., & Rusu, C. (1997). *Managementul resurselor umane [Human resource management]*. Editura Economică, Bucharest, Romania.
- Papp, B.M., Șerbescu, C., Caciora, T., Baidog, A., Varodi, M.O. (2019). The Effects of a Physical Activity Program on Body Composition and Physical Condition in the Overweight Adult. *Analele Universității din Oradea. Fascicula Educație Fizică și Sport*, 29(1), 1-9.

- Pop, C., Feflea, I., & Marinău, M. (2021). Aspects Regarding Geographic and Spatial Dispersion Determined by Romanian National Men's Basketball League (2006-2019). *Geosport for Society*, 14(1), 1-11. <https://doi.org/10.30892/gss.1401-070>
- Radu, A. (2010). *Basketball: Skills, techniques and tactics*. Crowood Press, Marlborough, England.
- Radu, A. (2015). *Basketball coaching: Putting theory into practice*. Bloomsbury, London, England.
- Radu, A., (2019). *The science of basketball*. Routledge, London, England.
- Sherry, E., Schulenkorf, N., Phillips, P., & Rowe, K. (Eds.). (2024). *Managing sport development: An international approach* (2nd ed.). Routledge, London, England.
- Sotiriadou, P., & De Bosscher, V. (Eds.). (2013). *Managing high performance sport*. Routledge, London, England.
- Taylor, T., Doherty, A., & Kerwin, S. (2024). *Managing people in sport organizations: A strategic human resource management perspective* (3rd ed.). Routledge, London, England.

Web-sites sources:

- <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (accessed at: 04.03.2025);
- <https://www.frbaschet.ro/federatie/despre-federatie> (accessed at: 09.12.2025).