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Developing a Policy Model for the Promotion of Grassroots Sports in Iran with an Emphasis on Leisure Management and Student Talent Identification

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ABSTRACT

The purpose of this study was to design a model for sports talent identification among students aged 8–12 years based on the utilization of leisure time. The present study is applied in terms of purpose. Regarding data collection and information gathering, it is classified as a field study, and the implementation method follows a mixed (qualitative–quantitative) approach. The qualitative statistical population consisted of university faculty members in the field of sports management—particularly experts in leisure studies—physical education teachers, and specialists in sports talent identification. The sampling method in this section was purposive, continuing until theoretical saturation at 16 participants. The quantitative statistical population consisted of planners and administrators of the Ardabil Department of Education, totaling 3,178 individuals. Using stratified random sampling and Morgan's table, a sample size of 432 participants was determined, from which 425 valid and unblemished questionnaires were obtained. The data collection instrument was a researcher-developed questionnaire with 61 items measured on a five-point Likert scale. Data analysis was performed using SPSS and LISREL software through structural equation modeling tests. According to the results derived from analyzing the research questions, the contribution of factors influencing the use of leisure time among students aged 8–12 years for sports talent identification included: organizational development and collaboration (57%) as the least influential factor; expansion of social and communicative capacities (72%); establishment of supportive and motivational infrastructures (80%); educational and cultural infrastructures (70%); specific and coherent planning (89%); development and enhancement of relevant human resources (96%) as the most influential factor; and economic policymaking (65%). All research instruments demonstrated acceptable and appropriate levels of model fit.

Keywords: Leisure time, students, sports talent identification, sports management, talent management

Introduction

The identification, development, and promotion of sport talent among children and adolescents have become a strategic priority in many countries, particularly in educational systems where early detection of athletic potential can create pathways

for long-term athletic achievement and national sport development. The conceptualization of sport talent has shifted from a purely biological or innate perspective to a multidimensional understanding that incorporates physiological, psychological, social, and environmental factors (Zhao et al., 2024). Contemporary evidence shows that talent detection, identification, development, and selection are distinct yet interconnected processes, each requiring its own scientific approaches and management frameworks (Zhao et al., 2024). The role of structured leisure time—especially among school-aged children—has become a critical dimension in this evolving paradigm. Leisure is no longer perceived merely as "free time," but as a fertile developmental context where physical activity, play, and social engagement help shape children's motor, cognitive, and psychosocial competencies, preparing them for more advanced sport involvement later in life (Sefidgar et al., 2024).

The significance of leisure time management within educational environments becomes more pronounced in societies where children's daily routines are increasingly dominated by academic pressure, digital media use, and sedentary behaviors. For this reason, scholars emphasize the importance of transforming students' leisure periods into meaningful physical-activity-oriented experiences that support physical literacy, positive emotions, and long-term engagement in sport (Li & Zeng, 2025; Sefidgar et al., 2024). Poorly structured leisure time can lead to decreased physical activity, weakened social connections, and disengagement from sport, while enriched and supervised leisure time can serve as a powerful mechanism for fostering sport interest, early motor skill development, and identification of emerging talent (Abdollahi et al., 2021). In this context, the identification of sporting talent through natural leisure behaviors—such as spontaneous play, informal games, or participation in school sports activities—has been recognized as a promising and practical avenue, particularly in resource-limited educational systems (Acheampong et al., 2024).

International research highlights the importance of aligning talent identification with children's routine environments, particularly school settings where physical education, extracurricular sports, and free-play opportunities act as natural laboratories for observing performance patterns and motivational tendencies (Prieto-Ayuso et al., 2020). Systematic reviews confirm that physical education lessons can provide valuable insights into children's motor abilities, coordination, adaptability, and willingness to engage in competitive or cooperative physical tasks (Prieto-Ayuso et al., 2020). This supports the notion that sport talent identification should be embedded within everyday educational and leisure structures, allowing educators, coaches, and specialists to observe children in realistic and stress-free environments (Ribeiro et al., 2021). According to the nonlinear pedagogy and athletic skills model, talent development thrives in rich, varied, and learner-centered environments—conditions that leisure time programs can provide effectively (Ribeiro et al., 2021).

Within Iran, the topic of managing children's leisure time and linking it intentionally to sport talent identification has gained substantial attention across various academic disciplines. A number of studies have analyzed how educational systems can incorporate leisure-based physical activities to enrich students' lives, enhance participation, and promote early sport engagement (Asadollahi et al., 2023; Shahr Sabz, 2023). For example, research on female students' leisure time in Mashhad emphasizes that well-planned educational–sport interventions create measurable improvements in physical activity behaviors and talent-related readiness (Abdollahi et al., 2021). Parallel research in Tehran similarly underscores the importance of designing leisure policies grounded in physical activity principles, confirming that structural, cultural, and managerial constraints within schools significantly affect students' opportunities for meaningful engagement (Esmaeili et al., 2022). The complexities of leisure time management, therefore, require strategic planning and informed policymaking to connect everyday activities with long-term sport development goals.

Talent identification models specifically designed for the Iranian context further emphasize the need for integrated, systematic approaches that align with local educational, cultural, and infrastructural realities. Grounded theory research on student sports talent management in Iran reveals that talent pathways must consider environmental conditions, educational support, family dynamics, and motivational factors simultaneously (Mortazaeian et al., 2022). Similarly, national studies on talent identification in football and basketball highlight gaps in talent detection processes, assessment tools, and training systems within schools, indicating the need for modernized frameworks and evidence-based identification protocols (Darvishi, 2018; Dostdari et al., 2016; Tahmasbpour Shafiei et al., 2025; Zareiee Bidsorkhi, 2019). These studies collectively show that talent identification in Iran remains fragmented and heavily dependent on expert judgment rather than systematic, data-driven evaluation.

Moreover, research on younger, elementary-aged students confirms that early sport talent identification faces numerous challenges related to infrastructure availability, limited teacher training, weak coordination between educational institutions and sport federations, and inadequate monitoring systems (Bahmani & Bahmani, 2024; Faridniya et al., 2024). Despite these challenges, scholars consistently emphasize that elementary school years (ages 8–12) represent a critical developmental window during which fundamental motor skills, cognitive processing abilities, and sport-related interests rapidly emerge. Therefore, early screening and talent monitoring must be prioritized in these age groups (Acheampong et al., 2024; Siahaan & Sinulingga, 2019).

Global studies complement these observations by illustrating how countries with successful talent development systems integrate leisure time programs into broader national sport strategies. For instance, research on talent transfer and development in paddle sports demonstrates how systematic monitoring and structured activity exposure contribute to more efficient identification of sport-specific competencies (Teunissena et al., 2021). Studies on young footballers in Cameroon further reveal that transitions between cultural and developmental environments can either support or hinder talent pathways, underscoring the importance of stable, enriching, and psychologically supportive contexts—qualities that well-managed leisure programs can foster (Waffo & Hauw, 2025). Perspectives from Kenya and other African countries also show that socioeconomic conditions, access to sport facilities, and family engagement significantly influence youth talent development, reinforcing that schools must play a stronger, more interventionist role when home environments lack sport-related opportunities (Jacob, 2014).

From a management and human capital perspective, the design of talent identification systems requires the development of organizational competencies, leadership structures, and professional skill frameworks. Human capital development research emphasizes the importance of structured competency models, organizational alignment, and skill-based evaluation processes in building effective talent systems (Farahi et al., 2014; Pourabedi et al., 2016). These management frameworks offer valuable insights for sport talent programs, which require coordination among schools, educational authorities, coaches, and governing bodies. In the sport context specifically, talent management scholarship shows that effective systems must incorporate strategic planning, stakeholder collaboration, and continuous evaluation mechanisms (Karami et al., 2024). Supply chain management perspectives even suggest that sport talent systems can be conceptualized as multi-stage pipelines that require optimization, communication, and resource alignment at each phase—from identification to development to performance realization (Memari et al., 2024).

Furthermore, the family and community environments surrounding children play crucial roles in shaping athletic involvement. Studies reveal that parental support, social norms, and community sport culture significantly affect children's access to sport opportunities and their likelihood of being recognized as potential talents (Hopwood et al., 2014; Yazdanparast & Badami, 2022). International comparisons also show that training environments, cultural expectations, and social support systems differ notably across countries, impacting both the development and identification of young athletes (Prieto-Ayuso et al., 2020; Yazdanparast & Badami, 2022). These findings underscore the need for context-sensitive models that integrate local cultural and institutional characteristics, instead of relying solely on imported talent identification frameworks.

Studies in Iran reaffirm that leisure time is often underutilized in its potential to promote physical activity and talent development. Many students—especially those in urban centers—engage heavily in sedentary digital activities, limiting their exposure to organized and unorganized sport opportunities (Li & Zeng, 2025; Sefidgar et al., 2024). To counter this, researchers propose revitalizing leisure management through gamified physical activity programs, play-based interventions, and integrated educational–sport initiatives that engage students more effectively (Sefidgar et al., 2024). These interventions have been shown to improve motivation, enjoyment, social connection, and physical readiness—all of which are essential components for spotting and nurturing sport potential in early childhood.

At the same time, political intelligence, structural reforms, and change management capabilities are essential for ensuring long-term sustainability and institutional alignment of such programs (Saberi & Aminazad, 2019). This aligns with broader talent development theories that emphasize the importance of adaptive governance, policy coordination, and systemic institutional support to achieve desired outcomes across sport sectors (Ribeiro et al., 2021; Rommers & Rössler, 2019). When educational, cultural, managerial, and community systems work synergistically, the likelihood of identifying and developing young athletic talent increases significantly.

Given these collective insights, the literature clearly underscores the necessity of creating comprehensive, multifaceted, and contextually grounded models that integrate leisure time, school structures, family participation, and sport development strategies to identify talent effectively in children aged 8–12. Despite the breadth of existing studies, a coherent and empirically validated structural framework specifically linking leisure time management with sport talent identification among Iranian elementary students remains underdeveloped. Addressing this gap is essential for strengthening school-based sport pipelines, improving national sport systems, and promoting equitable opportunities for children to discover and cultivate their athletic potential.

Therefore, the aim of the present study is to design a comprehensive structural model for sport talent identification among students aged 8–12 years based on the systematic use and management of their leisure time.

Methodology

The present study is applied in terms of its purpose. With respect to data collection and information gathering, it falls within the category of field studies, and its implementation follows a mixed-methods approach (qualitative–quantitative). The qualitative research strategy is exploratory, while the quantitative strategy is correlational. The qualitative research method applied is thematic analysis based on the Braun and Clarke approach, including the identification, categorization, and prioritization of factors. The qualitative statistical population consisted of university faculty members in sports management—particularly experts in leisure studies—physical education teachers, and specialists in sports talent

identification. The sampling method in this section was purposive, continuing until theoretical saturation at 16 individuals. The process and stages of thematic analysis in this study involved collecting the data and synthesizing the conducted interviews, followed by identifying themes and categories related to the utilization of leisure time by students aged 8–12 years for sports talent identification through open coding.

The quantitative statistical population consisted of planners and administrators in the Ardabil Department of Education, totaling 3,178 individuals. Using stratified random sampling and Morgan's table, a sample size of 432 respondents was selected. Considering the likelihood that some questionnaires would be incomplete or distorted, approximately 500 questionnaires were distributed among the statistical population, resulting in 425 valid and undistorted questionnaires. The data collection tool was a researcher-developed questionnaire comprising 61 items on a five-point Likert scale. Data analysis was conducted using SPSS and LISREL software through structural equation modeling tests.

Findings and Results

Based on the collected data, 58.6% of the respondents were male and 41.4% were female; 12.2% of the respondents—representing the lowest frequency—were aged 50 years or older, while 49.9%—representing the highest frequency—were in the age group of 40–49 years. Regarding educational attainment, 1.2% had the lowest frequency with an associate degree, and 58.4% had the highest frequency with a master's degree. Furthermore, 24.2% of respondents had less than 10 years of work experience—the lowest frequency—while 50.8% had 10–20 years of work experience—the highest frequency. In this section, through analysis of the data derived from semi-structured, in-depth interviews with qualitative participants, efforts were made to analyze sports talent identification among students aged 8–12 years based on the use of leisure time. Ultimately, after coding the interviews into basic, organizing, and overarching themes, the levels were presented. Overarching themes, to the extent that they are coherently articulated and carry analytical meaning, have significant value.

Overarching themes are more abstract and represent a higher level. They are produced through an analytical process of comparison used for identifying similarities and differences in lower-level themes. Grouping overarching themes reduces the number of units that must be analyzed. The process of classifying concepts that appear to relate to similar phenomena is referred to as categorization. At this stage, shared patterns identified through comparison acquire the title of overarching themes. It should be noted that overarching theme names are typically chosen by the researcher. The selected name must logically correspond to the data represented by the overarching theme and should be coherent enough to instantly evoke its referent, enabling reflection and, most importantly, analytical interpretation. Some names may derive from conceptual frameworks previously encountered in professional studies within the field. Using terminology from existing literature also provides advantages when such overarching themes are well-defined and analytically meaningful.

Table 1. Overarching Themes

Row	Organizing Themes	Overarching Themes
1	Organizational policymaking	Organizational development and collaboration
2	Organizational goal-setting	
3	Organizational structural reforms	
4	Expanding discourse on sports talent identification	Expansion of social and communicative capacities
5	Regulating relations with institutions and families	
6	Identifying capacities and potentials	
7	Organizational and social support for specialized sports	
8	Educational and training facilities	Establishing supportive and motivational infrastructures
9	Encouragement and support for athletes	
10	Sports expertise and knowledge	Educational and cultural infrastructures

11	Role-modeling and improving public attitudes toward physical and sports activities	
12	Enhancing coaches' knowledge	
13	Participation in sports classes	Specific and coherent planning
14	National and international competitions	
15	Coaching systems	
16	Valid and diverse methods and tests	Development and advancement of related human resources
17	Talent motivation management	
18	Decision-making skills	
19	Financial resource management	Economic policymaking
20	Financial and incentive support	
21	Financing the procurement of sports equipment	

According to the results obtained from the above table, seven main dimensions were identified:

1. **Organizational development and collaboration**, with indicators including organizational policymaking, organizational goal-setting, and organizational structural reforms;
2. **Expansion of social and communicative capacities**, with indicators including expanding the discourse on sports talent identification, regulating relations with institutions and families, identifying capacities and potentials, and organizational and social support for specialized sports;
3. **Establishing supportive and motivational infrastructures**, with indicators including educational and training facilities, and the encouragement and support of athletes;
4. **Educational and cultural infrastructures**, with indicators including sports expertise and knowledge, role-modeling and enhancement of public attitudes toward physical and sports activities, and improvement of coaches' knowledge;
5. **Specific and coherent planning**, with indicators including participation in sports classes, national and international competitions, and coaching systems;
6. **Development and advancement of related human resources**, with indicators including valid and diverse methods and tests, talent motivation management, and decision-making skills;
7. **Economic policymaking**, with indicators including financial resource management, financial and incentive support, and financing the procurement of sports equipment.

Based on the synthesis of interviews and extracted codes classified under organizing and overarching themes, the questionnaire for the quantitative section was developed and administered. Statistical analysis is presented below.

Table 2. Results of the Kolmogorov–Smirnov Test for Determining Normality of the Research Variables

Statistic	Organizational Development and Collaboration	Expansion of Social and Communicative Capacities	Establishing Supportive and Motivational Infrastructures	Educational and Cultural Infrastructures	Specific and Coherent Planning	Development and Advancement of Related Human Resources	Economic Policymaking
K–S z-value	1.053	0.969	1.163	0.196	1.422	1.175	1.60
Significance level	0.218	0.305	0.134	0.114	0.066	0.126	0.129

According to the results of Table 2, and considering that the significance level of the test error at the 95% confidence level is greater than 0.05, it can be concluded that the distribution of the variables (organizational development and collaboration; expansion of social and communicative capacities; establishing supportive and motivational infrastructures; educational and cultural infrastructures; specific and coherent planning; development and advancement of related human resources; and economic policymaking) is normal. Therefore, parametric tests should be used to analyze the hypotheses.

The results of reliability using item–total correlations, item reliability, and convergent and discriminant validity of the extracted constructs based on the final model are presented in the following tables.

Table 3. Reliability Analysis and Convergent Validity of Factors Related to the Use of Leisure Time Among Students Aged 8–12 Years for Sports Talent Identification

Variables	Dimensions	Items	Item Reliability	Item–Total Correlation	Cronbach's Alpha	AVE	CR
Organizational Development and Collaboration	Organizational Policymaking	Strengthening evaluation and reporting systems	0.70	0.54	0.73	0.49	0.85
		Strengthening sports infrastructures	0.73	0.58			
		Updating school sports equipment	0.68	0.54			
		Developing justice-oriented distribution of sports resources	0.68	0.57			
	Organizational Goal-Setting	Accessibility of sports facilities in schools	0.70	0.57			
		Evaluation of key organizational infrastructures	0.70	0.57			
		Continuous review of student sports activities	0.72	0.54			
	Organizational Structural Reforms	Macro-level legal reforms for student leisure	0.71	0.50			
		Continuous removal of organizational defects	0.75	0.56			
		Structural reforms based on local sport specialization	0.75	0.56			
Expansion of Social and Communicative Capacities	Expanding Sport Talent Identification Discourse	Needs assessment of sport activities	0.78	0.57	0.86	0.54	0.89
		Holding educational courses	0.73	0.58			
		Holding recreational and sport competitions	0.70	0.50			
		Evaluation of Ministry of Education activities	0.73	0.57			
		Specialized management of student sports	0.74	0.54			
	Regulation of Relations with Institutions and Families	Redesigning sports services for user needs	0.75	0.57			
		Providing equal access opportunities	0.73	0.58			
		Encouraging presence of prominent athletes in schools	0.73	0.56			
	Identifying Capacities and Potentials	Holding recreational and sport competitions	0.74	0.52			
		Identifying and evaluating student sport potentials	0.73	0.55			
	Organizational and Social Support for Specialized Sports	Social/specialized gatherings	0.75	0.54			
		Demonstrating attractiveness of group/local sports	0.73	0.55			
		Social acceptance of sport participants	0.73	0.56			
Establishing Supportive and Motivational Infrastructures	Educational and Training Facilities	Continuity of learning process	0.73	0.54	0.75	0.55	0.93
		Growth and development of human resources	0.74	0.57			
	Encouragement and Support for Athletes	Consulting with sport veterans	0.75	0.58			
		Establishing sport advisory councils	0.73	0.56			
Educational and Cultural Infrastructures	Sport Expertise and Knowledge	Filling free time with activity	0.75	0.58	0.80	0.61	0.89
		Specialized courses with national/international experts	0.73	0.50			
		Using experiences of successful countries	0.75	0.55			
	Public Attitudes Toward Physical Activity	Role-modeling successful individuals	0.73	0.56			
		Using capabilities of successful athletes	0.79	0.50			
		Academic/social incentives for student athletes	0.78	0.57			
	Enhancing Coaches' Knowledge	Continuous training sessions	0.79	0.59			

		Institutionalizing specialization	0.78	0.51			
		Coordination among schools	0.77	0.54			
Specific and Coherent Planning	Participation in Sport Classes	Designing monitoring/evaluation systems	0.80	0.53	0.70	0.63	0.87
		Updating sports technology/equipment	0.79	0.57			
		Coach empowerment programs	0.78	0.50			
	National and International Competitions	Cooperation with leading countries	0.79	0.53			
		Learning from successful countries	0.77	0.59			
		International organizational activities	0.78	0.50			
	Coaching Systems	Strengthening coaches' sport skills	0.79	0.58			
		Supporting prominent coaches	0.78	0.53			
		Encouraging and supporting successful coaches	0.78	0.51			
Development and Advancement of Human Resources	Valid and Diverse Tests	Conducting continuous assessments	0.80	0.56	0.82	0.60	0.90
		Expanding talent identification centers	0.78	0.56			
	Talent Motivation Management	Addressing student athlete needs	0.75	0.56			
		Consulting experts from various fields	0.77	0.51			
	Decision-Making Skills	Strengthening creativity/talent	0.78	0.56			
		Enhancing sport knowledge levels	0.75	0.52			
		Establishing advisory/collaborative councils	0.77	0.51			
Economic Policymaking	Financial Resource Management	Solving financial issues / attracting investors	0.71	0.54	0.75	0.50	0.83
		Supportive policies for student athletes	0.66	0.59			
		Senior-level meetings to resolve financial issues	0.70	0.58			
		Solving financial issues / attracting investors	0.71	0.52			
	Financial and Incentive Support	Financial support for talented students	0.71	0.54			
		Increasing family financial capability	0.66	0.59			

The results of the above tables indicate that item–total correlations were above 0.30 and item reliability exceeded 0.50, demonstrating that the items possess adequate precision in designing the model for the use of leisure time among students aged 8–12 years for sports talent identification. Furthermore, Cronbach's alpha values exceeded 0.60 and composite reliability (CR) values exceeded 0.70, confirming that all seven factors have sufficient reliability in designing the model for the use of leisure time for sports talent identification among students aged 8–12 years in accordance with the capacity of relevant industries.

Additionally, the results show that for each construct, CR > AVE and AVE > 0.50, indicating satisfactory convergent validity. In partial least squares analysis, Fornell–Larcker criteria are used to assess discriminant validity, which reflects partial correlations between a construct's indicators and those of other constructs. The Fornell–Larcker criterion requires that the square root of each construct's Average Variance Extracted (AVE) be greater than its correlations with other constructs. Values on the main diagonal of the matrix must therefore be greater than all corresponding off-diagonal values. Table (4) presents the Fornell–Larcker matrix for factors related to the use of leisure time among students aged 8–12 years for sports talent identification.

Table 4. Fornell–Larcker Matrix for Factors Related to the Use of Leisure Time Among Students Aged 8–12 Years for Sports Talent Identification

Variable	Organizational Development and Collaboration	Expansion of Social and Communicative Capacities	Establishing Supportive and Motivational Infrastructures	Educational and Cultural Infrastructures	Specific and Coherent Planning	Development and Advancement of Related Human Resources	Economic Policymaking
Organizational Development and Collaboration	1.89						
Expansion of Social and Communicative Capacities	0.87	1.51					
Establishing Supportive and Motivational Infrastructures	0.65	0.74	1.16				
Educational and Cultural Infrastructures	0.60	0.73	0.80	1.08			
Specific and Coherent Planning	0.59	0.66	0.76	0.66	1.01		
Development and Advancement of Related Human Resources	0.59	0.50	0.67	0.69	0.63	0.76	
Economic Policymaking	0.54	0.45	0.55	0.58	0.52	0.52	0.60

As can be seen, the values on the main diagonal of the matrix are greater than all other values in their respective columns, indicating that the model enjoys appropriate discriminant validity. These findings show that all seven factors correctly estimate the target of the questionnaire, namely the factors related to designing a model for the use of leisure time among students aged 8–12 years for sports talent identification (convergent validity). The results also indicate that the subscales are not so highly correlated with one another that they collapse into a single construct; therefore, the components are not redundant (discriminant validity).

Structural equation modeling is a comprehensive approach to testing hypotheses about relationships between observed and latent variables. It is sometimes referred to as covariance structure analysis, causal modeling, or LISREL; however, the dominant term in current usage is Structural Equation Modeling (SEM). One of the strongest and most suitable methods of analysis in behavioral and social science research is multivariate analysis, because such topics are multivariate in nature and cannot be addressed adequately through bivariate methods (in which each time, one independent variable is examined in relation to one dependent variable). Structural equation modeling is a powerful tool for the researcher, assisting in the development of the theoretical framework of the study in the form of measurement and structural models. In addition, by using empirical data, SEM enables the researcher to test the proposed models as a whole and, through the fit indices it provides, guides the researcher in revising and improving the model. What makes structural equation modeling powerful is, first, its high methodological precision—because it treats latent variables as constructs measured with error—and second, its practical proximity to real social life, since it allows data analysis in a multivariate context.

Research Question: What is the structural equation model of talent identification among students aged 8–12 years based on the use of their leisure time?

As shown in Figure (1), all factors and components related to the use of leisure time among students aged 8–12 years for sports talent identification are among the influential factors in the use of leisure time for this purpose. Therefore, it can be stated that the dimensions and components of the mental model identified in this study are among the effective factors in

the use of leisure time among students aged 8–12 years for sports talent identification. The contribution of the factors influencing the use of leisure time among students aged 8–12 years for sports talent identification, as observed in Figure (1), is as follows: organizational development and collaboration, 57%; expansion of social and communicative capacities, 72%; establishing supportive and motivational infrastructures, 80%; educational and cultural infrastructures, 70%; specific and coherent planning, 89%; development and advancement of related human resources, 96%; and economic policymaking, 65%.

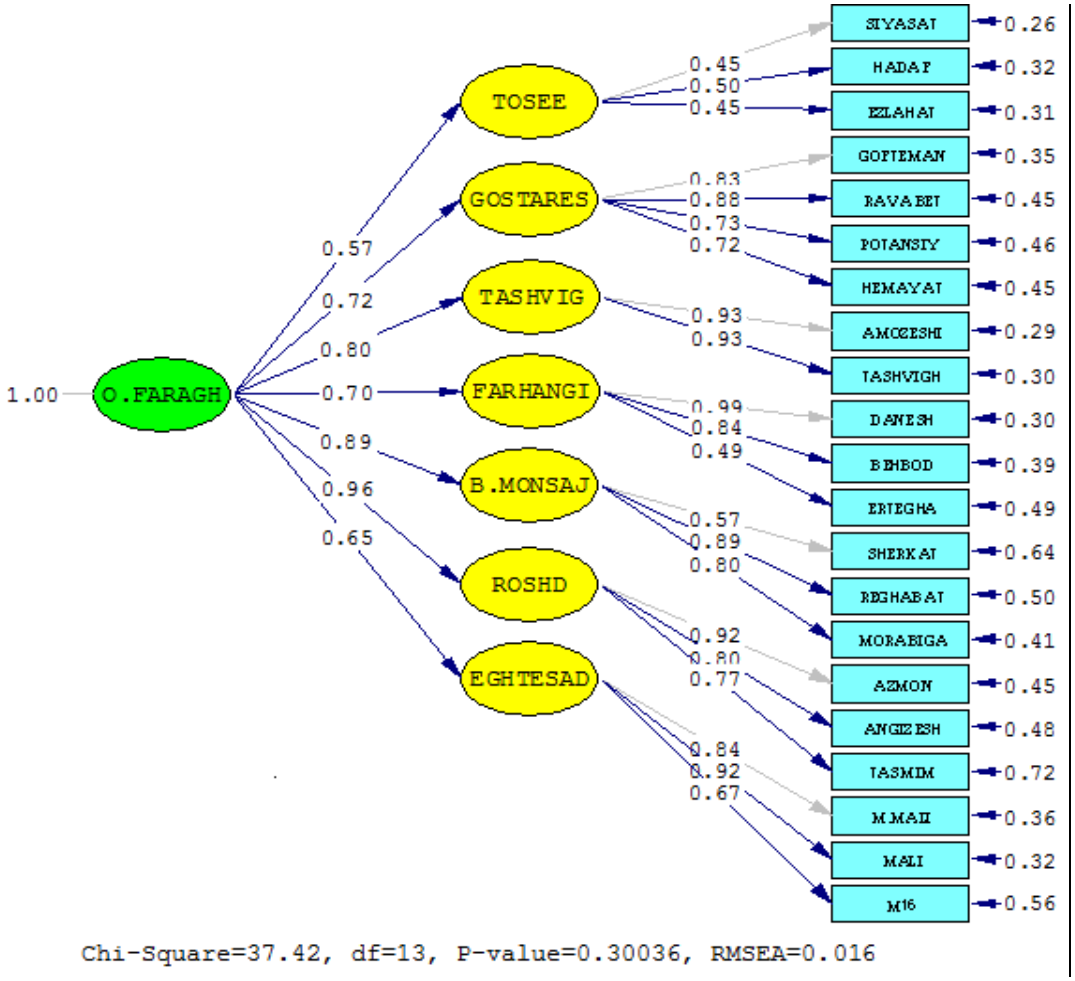

Figure 1. Factor Loadings for the Use of Leisure Time Among Students Aged 8–12 Years for Sports Talent Identification

As shown in Figure (1), the results of the study indicate that all relationships between the constructs are established. The values of the fit indices are presented in Table (6), demonstrating an appropriate fit of the model.

Table 6. Model Fit Results

Model Fit Criteria	Index	Obtained Value	Acceptable Threshold	Result
Ratio of Chi-square to Degrees of Freedom	χ^2/df	2.87	Less than 3	Good fit
Root Mean Square Error of Approximation	RMSEA	0.016	Less than 0.10	Good fit
Root Mean Square Residual	RMR	0.025	Close to zero	Good fit
Normed Fit Index	NFI	0.97	Greater than 0.90	Good fit
Non-Normed Fit Index	NNFI	0.95	Greater than 0.90	Good fit
Comparative Fit Index	CFI	0.91	Greater than 0.90	Good fit
Incremental Fit Index	IFI	0.91	Greater than 0.90	Good fit
Relative Fit Index	RFI	0.99	Greater than 0.90	Good fit
Goodness-of-Fit Index	GFI	0.94	Greater than 0.90	Good fit
Adjusted Goodness-of-Fit Index	AGFI	0.97	Greater than 0.90	Good fit

In light of the model fit indices for the structural equation model of the research question and the measurement instruments, it can be stated that the chi-square statistic in the structural equation model of the research question is significant at the 5% error level. Moreover, the ratio of chi-square to degrees of freedom in the structural equation model of the research question, given the adopted criterion, indicates a good model fit. The value of the RMSEA index falls within the acceptable range, which also indicates an acceptable level of error in the structural equation model of the research question. The values of the CFI, GFI, AGFI, NFI, and NNFI indices in the structural equation model of the research question, evaluated against the recommended thresholds, were satisfactory, indicating a good fit of the structural equation model of the research question. Therefore, based on the results of the structural equation model, it can be concluded that all research instruments exhibit an appropriate and acceptable level of model fit.

Discussion and Conclusion

The findings of this study demonstrated that seven major dimensions—organizational development and collaboration, expansion of social and communicative capacities, establishment of supportive and motivational infrastructures, educational and cultural infrastructures, specific and coherent planning, development and advancement of human resources, and economic policymaking—collectively shape the effectiveness of using leisure time to identify sport talent in students aged 8–12 years. The structural equation model showed that all seven components had significant and positive influences, with human resource development showing the highest level of influence and organizational development the lowest. These results highlight the multifaceted nature of talent identification and affirm that talent is not a product of isolated variables but emerges from the dynamic interplay between individual readiness, environmental support, and systemic structures (Zhao et al., 2024). This finding aligns with contemporary perspectives that conceptualize talent as a complex, nonlinear, and context-sensitive construct that requires multidimensional support systems to flourish (Ribeiro et al., 2021).

The relatively lower influence of organizational development and collaboration suggests that despite existing structures within schools and sports organizations, there are gaps in coordination, policy alignment, and resource distribution. Research emphasizes that organizational efficiency, inter-institutional coordination, and clear policy direction are essential for effective sport talent pathways, particularly in countries where educational institutions serve as primary talent pools (Asadollahi et al., 2023). Similar findings have been reported in studies highlighting deficiencies in talent identification infrastructures, administrative inconsistencies, and inadequate monitoring systems across Iranian schools (Bahmani & Bahmani, 2024). Thus, the current study reiterates that without robust organizational collaboration, even well-designed talent identification programs cannot be fully implemented.

The moderate-to-strong influence of social and communicative capacities underscores the importance of school–family–community partnerships. Children's initial sport engagement is strongly shaped by social encouragement, peer interaction, cultural norms, and parental support (Yazdanparast & Badami, 2022). This pattern is consistent with global research indicating that talent development environments must be socially enriched, inclusive, and motivational to sustain children's long-term engagement in physical activity (Rommers & Rössler, 2019). Additionally, the emphasis on community relationships and inter-organizational coordination supports previous findings suggesting that sport talent identification benefits greatly from integrated community involvement, accessible local events, and opportunities for informal sport

exposure (Acheampong et al., 2024). Schools alone are often insufficient; broader societal support systems play a significant role during the foundational years.

One of the strongest predictors identified in this study was the establishment of supportive and motivational infrastructures. This dimension encompasses training facilities, learning continuity, and structured opportunities for students to receive encouragement and mentorship. The importance of such infrastructures has been widely documented in research showing that enriched learning environments promote motor development, confidence building, and sustained sport interest (Prieto-Ayuso et al., 2020). The emphasis on supportive infrastructures also aligns with the athletic skills model, which emphasizes structured variability, guided exploration, and motivational climates as essential conditions for identifying and developing talent (Ribeiro et al., 2021). In the context of Iran, where resource disparities are common across schools and regions, the significance of infrastructure becomes even more pronounced, reaffirming earlier work that highlighted gaps in facilities, unequal access, and the shortage of developmentally appropriate sport spaces (Karami et al., 2024).

Educational and cultural infrastructures were another highly influential dimension, reflecting the importance of knowledge-based approaches to talent identification. This includes the expertise of coaches, cultural attitudes toward sport, and the availability of training and educational resources. Previous studies confirm that coach expertise, teacher professionalization, and culturally supportive environments enhance the accuracy and sustainability of talent identification systems (Teunissena et al., 2021). Moreover, evidence from comparative international studies shows that cultures that value sport from early childhood tend to produce more effective and inclusive talent pathways (Jacob, 2014). The results of this study are consistent with research demonstrating that combining pedagogical knowledge with sport-specific competencies is critical for creating a talent-sensitive educational environment (Lee, 2015). In Iran, where cultural attitudes toward competition, physical activity, and children's free time vary widely, educational and cultural infrastructures serve as crucial mediators that influence students' initial sport engagement and long-term development.

Specific and coherent planning emerged as one of the strongest components, reflecting the necessity of structured, systematic, and well-coordinated approaches to managing leisure time for talent identification. The high influence of this component mirrors global evidence that ad hoc or unstructured physical activity programs are insufficient for identifying early signs of talent (Prieto-Ayuso et al., 2020). Coherent planning—such as monitoring systems, formal screening tools, and progression pathways—is essential for creating continuity and standardization across schools and sport institutions (Dostdari et al., 2016). The strong relationship observed here resonates with studies emphasizing that planned exposure to various sport activities helps children display diverse skills, adaptability, and preferences, all of which are vital for identifying both general and sport-specific talent (Suryadia, 2020). This finding is also aligned with investigations highlighting that structured sport interventions in leisure time can significantly improve physical readiness and reveal latent potential among young learners (Sefidgar et al., 2024).

The most influential factor—development and advancement of human resources—confirms that the professionalism, knowledge, and decision-making competence of coaches, teachers, and sport specialists are pivotal. Prior research has consistently shown that talent identification systems fail not because of student limitations, but due to insufficient expertise among evaluators, inconsistent assessment methods, or inadequate professional development opportunities for sport educators (Hopwood et al., 2014). This aligns strongly with grounded theory analyses that identified human capital advancement as the backbone of effective talent identification systems in Iran (Mortazaeian et al., 2022). International studies

reinforce that high-quality talent identification depends on skilled practitioners who understand motor development trajectories, psychological readiness, and the complexity of talent emergence (Zhao et al., 2024). The current study's findings amplify this argument by showing that human resource development is the most decisive predictor of success in linking leisure time to talent discovery.

The final component—economic policymaking—also had a meaningful effect, demonstrating that financial resources, incentives, and investment structures remain key elements of talent identification. Economic capacity influences the availability of equipment, access to sport facilities, school-based program funding, and support for talented children from lower-income families (Faridniya et al., 2024). These findings correspond with earlier studies reporting that financial constraints, unequal access to sport opportunities, and lack of governmental or institutional investment hinder talent development in elementary school settings (Bordbar, 2015). International literature similarly emphasizes that economic inequalities, resource shortages, and poor financial planning can severely limit the inclusivity of talent identification systems (Siahaan & Sinulingga, 2019). Therefore, the consistency between the current findings and prior research suggests that economic policy reforms are essential for strengthening early talent identification across diverse social environments.

Overall, the results of this study show strong alignment with global and national research underscoring the necessity of holistic, ecosystem-based approaches to early sport talent identification. By demonstrating that leisure time—when effectively planned, resourced, and supervised—can serve as a powerful platform for discovering sport potential, this study reinforces emerging theoretical models that view talent as the outcome of systemic interactions rather than isolated traits (Li & Zeng, 2025; Ribeiro et al., 2021). The convergence between the present results and previous scholarship emphasizes that successful talent identification in children aged 8–12 requires not only supportive environments and skilled professionals but also coherent planning and institutional collaboration to build sustainable pathways for future athletic success.

The limitations of this study include the use of self-report questionnaires, which may introduce biases in responses due to social desirability or misinterpretation of items. The data were collected from one geographical region, limiting the generalizability of findings to other provinces with different cultural, economic, or infrastructural characteristics. Furthermore, observational or performance-based assessments were not included, which might have captured more objective indicators of talent potential.

Suggestions for future research include expanding the study across diverse regions to compare geographical or cultural variations in leisure-based talent identification. Future studies could incorporate mixed observational–behavioral assessments to triangulate findings and increase the accuracy of talent detection. Longitudinal tracking of students identified as talented during the leisure-time assessment process would also provide valuable insights into the predictive validity of early identification models.

Practical recommendations include improving school infrastructure, enhancing teacher training in talent identification, and strengthening collaboration between education departments and sport federations. It is also essential to design structured, engaging leisure-time activities that expose children to a wide range of physical experiences, enabling educators to observe and identify emerging talent naturally.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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