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Analyzing the causes of the quantitative and qualitative decline in demand for admission to the field of physical education and sports sciences at universities in the Kurdistan Region–Iraq and providing improvement solutions

(Mustal Research)

Prof. Dr. Sardar Mohammadi , Dr. Salam Kareem zamn , Asst. prof. Ali Karim Ali

Garmian University. School of Basic Education/Sport Department

sardarmohammadii@gmail.com Salam.karim@garmian.edu.krd

Ali.karim@garmian.edu.krd

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Abstract

This applied study investigated the causes behind falling enrollment in Physical Education and Sports Sciences programs in Kurdistan Region universities and developed a prioritized set of improvement strategies. A descriptive–comparative survey was conducted, gathering data from 108 academic managers and faculty members using a reliable and validated questionnaire. The research quantitatively assessed perceptions across four key areas: professional and curricular factors, environmental and ecosystem factors, organizational and systemic factors, and individual and behavioral factors, while also evaluating the perceived efficacy of corresponding solutions. The findings identified a clear hierarchy of causes, with professional and curricular issues, notably poor career prospects and unclear employment paths (mean=4.32), ranked as most critical, followed by environmental and ecosystem factors (3.95), organizational and systemic weaknesses (3.52), and lastly, individual and behavioral aspects (2.95). Statistical tests confirmed significant differences in these rankings and revealed divergent perspectives between managers and faculty, with managers emphasizing economic and career-related obstacles more heavily. The analysis of proposed strategies yielded a corresponding priority order for intervention: organizational and systemic solutions (weight=0.91), such as enhancing university–sports sector collaboration and activating career services, were deemed most effective, followed by professional and curricular reforms (0.87), environmental and ecosystem initiatives (0.82), and finally individual and behavioral programs (0.77). In conclusion, the study recommends a focused action plan that prioritizes systemic reforms to clarify career pathways and strengthen institutional partnerships, as these areas were consistently identified as having the greatest potential impact on reversing the enrollment decline.

Keywords: admission decline causes, physical education demand, university enrollment factors, Kurdistan Region sports, improvement strategies sports.

Introduction

Higher education systems worldwide are undergoing rapid and profound transformations, shaped by shifting socioeconomic demands and evolving student aspirations. Within this dynamic context, certain academic disciplines face growing challenges in sustaining their appeal and maintaining viable enrollment levels. A particularly striking manifestation of this trend is the notable decline in both the number and academic caliber of applicants to physical education and sports sciences programs at universities in the Kurdistan Region of Iraq, a development that has become an increasing concern for academic and administrative stakeholders alike (Mustafa et al., 2024). The consequences extend well beyond departmental statistics, affecting the supply of qualified professionals needed to advance the sports sector, support public health initiatives, and contribute to the region's broader educational development (Ahmed & Any, 2022).

The decision to pursue a particular university specialization is rarely straightforward; it is shaped by a complex interplay of factors, most notably perceptions of future career prospects, the social prestige associated with a given field, and the expected return on educational investment (Budur et al., 2018; Qasim et al., 2021). When sports science programs are perceived as lacking clear and stable employment pathways, their attractiveness diminishes considerably, a pattern well-documented in international literature (Chacón-Araya, 2017; Spittle et al., 2021). This effect is further amplified in economically uncertain environments, where pragmatic labor market considerations become decisive in shaping students' educational choices (Dzaye, 2023).

Beyond employment perceptions, the intrinsic quality of academic programs and their pedagogical approaches play a central role in determining their attractiveness. Research consistently links student satisfaction and engagement to teaching quality, curriculum relevance, and access to modern learning resources (Hussein, 2022). Assessments of physical education faculties in Iraq point to several concerning areas, including outdated curricula, limited practical training opportunities, and insufficient integration of digital tools and technologies (Salih & Numan, 2023; Abdullah, 2024). Such shortcomings can trigger a negative feedback cycle in which declining perceptions reduce enrollment, which in turn strains institutional resources and further erodes program quality (Ali & Abdul, 2024).

The enrollment challenge must also be understood within the broader context of higher education governance and policy. Quality assurance frameworks, admission criteria, and institutional credibility all exert significant influence on program sustainability (Atrushi & Woodfield, 2018; O'Neill et al., 2014). The Kurdistan Region's higher education landscape is characterized by rapid expansion, resource constraints, and the ongoing imperative to align academic outputs with national development priorities (Vernez et al., 2016). Notably, enrollment decline is not confined to sports sciences alone, with similar patterns observed in fields such as statistics and political science, suggesting that systemic factors related to program relevance and labor market signaling may be broadly at work (Blbas et al., 2025).

Against this backdrop, global trends in sports science education point toward innovation, professionalization, and community engagement as sustainable pathways forward. Contemporary scholarship advocates for curricula that cultivate entrepreneurship, digital literacy, and meaningful industry linkages through modalities such as service-learning and applied research (Chiva-Bartoll et al., 2019; Matic et al., 2022). Strategic program modernization, grounded in rigorous

evaluation and faculty development, is widely recognized as essential to restoring relevance and attractiveness (Sabut et al., 2025).

Accordingly, this study systematically analyzes the multifactorial causes underlying the declining demand for admission to physical education and sports sciences programs in the Kurdistan Region and, on this basis, proposes a coherent set of improvement strategies rooted in both local realities and international best practices.

research gap and problem

The Kurdistan Region of Iraq's higher education sector faces mounting pressures amid post-conflict reconstruction and rapid socioeconomic change. Within this competitive academic environment, physical education and sports sciences programs have experienced a pronounced and worsening decline in student demand, posing serious threats not only to the institutional viability of these departments but also to the region's long-term capacity to develop qualified professionals in public health, physical activity promotion, and sports industry development.

Despite the visibility of this decline, its root causes remain poorly understood. Administrators and policymakers currently rely on anecdotal evidence rather than systematic inquiry, leaving them ill-equipped to design effective interventions. Critical questions remain unanswered: Is the decline driven by students' perceptions of limited career prospects? By outdated curricula and inadequate facilities? Or by deeper structural failures in educational policy and labor market alignment? Without a rigorous, multidimensional analysis capable of disentangling these interrelated factors, intervention efforts risk being speculative, fragmented, and ultimately ineffective.

The problem is compounded by a widening gap between global trends in sports science education and local program realities. Internationally, the discipline has

evolved into a dynamic, technology-driven field offering clear career specializations. Local programs, however, appear to lag significantly behind in adopting these modern paradigms, reinforcing perceptions of obsolescence and poor return on investment among prospective students.

Existing research has addressed related issues only tangentially, examining isolated variables rather than offering a holistic explanatory model. No dedicated study has placed the enrollment crisis in physical education and sports sciences at the center of its inquiry or produced an integrated framework linking external perceptions, internal quality indicators, and systemic factors to student demand outcomes. This gap leaves decision-makers without the evidence base needed for strategic planning.

The consequences of inaction are far-reaching. A continued decline in graduate numbers threatens the supply of qualified physical education teachers, trained sports professionals, and evidence-based policy practitioners across the region. Schools, sports clubs, rehabilitation centers, and public health institutions will all feel the impact, ultimately undermining the region's ability to foster a healthy, active society and a credible sports industry.

This study therefore addresses an urgent and significant research gap by providing a contextualized, empirical diagnosis of the causes behind the enrollment decline and deriving from it a coherent, prioritized set of improvement strategies. The aim is to replace uncertainty with evidence and reactive management with informed action, equipping educational leaders with the insights needed to revitalize these programs and realign them with student aspirations and regional development priorities.

Literature and research background:

A systematic review of domestic and international scholarship reveals a rich but fragmented body of knowledge surrounding student enrollment trends, program selection determinants, and the academic development of physical education and sports sciences. By synthesizing these contributions, this review maps the existing intellectual territory, identifies established theoretical paradigms, and clarifies the specific gap this study seeks to address.

Domestic research in Iraq and the Kurdistan Region has addressed the broader higher education context alongside discipline-specific concerns. Foundational work has examined how secondary schools prepare students for university and evaluated quality improvement initiatives (Kakamad, 2013; Vernez et al., 2016), while structural analyses have scrutinized quality assurance reforms and documented systemic decline (Ali, 2017; Atrushi & Woodfield, 2018; Darwish & Mihyawi, 2023). Within physical education specifically, studies have addressed sustainable development requirements, investment needs, teaching performance, organizational values, and e-learning quality standards (Musa, 2020; Ahmed & Any, 2022; Hussein, 2022; Salih & Numan, 2023; Hamoo et al., 2025). More recent scholarship has turned to technological modernization, exploring AI integration barriers, digital development models, and faculty competency advancement (Abdullah, 2024; Ameen, 2025; Sabut et al., 2025). The student experience has been explored through studies on practical course evaluation, writing anxiety, and sports media perceptions (Ali & Abdul, 2024; Jameel et al., 2024). Crucially, enrollment decline has been documented in related disciplines including political science and statistics, signaling a broader regional pattern (Mustafa et al., 2024; Blbas et al., 2025), while research on university choice consistently identifies career expectations and expected income as primary decision-making drivers (Budur et al., 2018; Qasim et al., 2021; Dzaye, 2023).

International scholarship provides a comprehensive exploration of variables shaping the appeal and outcomes of sports science education globally. Research on admission mechanisms examines their relationship to dropout rates, learning performance, and labor market integration (O'Neill et al., 2014; Prihanto et al., 2018; Ardelean et al., 2022; Masoudi et al., 2024; Silva et al., 2025). A prominent strand addresses employability, career perceptions, and student motivation, consistently demonstrating that the perceived diversity and quality of career pathways are strong determinants of program attractiveness (Chacón-Araya, 2017; Spittle et al., 2021; Matic et al., 2022; Turhan & Canpolat, 2023; Saquing et al., 2025). Pedagogical and curricular evolution constitutes a further key area, encompassing service-learning, competency-based frameworks, sustainability-oriented education, and technology integration including AI (Chiva-Bartoll et al., 2019; Solmon, 2021; Kittel et al., 2023; Molina-García et al., 2024; Berroudj, 2025). Additional studies investigate academic success factors and career readiness (Hastings, 2022; Muindi, 2022).

A critical synthesis of this literature reveals four distinct gaps. First, domestic research lacks a focused empirical investigation that causally links the documented challenges to the specific decline in demand for physical education programs in the Kurdistan Region. Second, international findings, while theoretically robust, have not been adapted or tested within the region's distinctive socioeconomic and post-conflict environment. Third, no existing study employs a holistic framework that simultaneously integrates external perceptual factors, internal academic quality indicators, and systemic governance dimensions. Fourth, prior research largely stops at diagnosis, leaving a significant absence of context-sensitive, actionable improvement strategies derived from systematic root-cause analysis. This study is designed to bridge all four gaps.

Methodology

This research is a descriptive-comparative study conducted through a survey approach and is applied in its purpose. The selection of this research design is due to the main objective, which is not only to describe the current situation and identify factors affecting the decline in demand but also to systematically compare the perspectives of two key stakeholder groups (executive managers and faculty members) regarding these factors and improvement solutions. The survey approach, through the distribution of a standardized questionnaire, enables the collection of coherent and generalizable quantitative data from a large sample of the target population. The applied nature of the research stems from the fact that its findings directly lead to the presentation of practical and executable strategies and recommendations for senior university administrators, educational policymakers in the Kurdistan Region, and physical education department faculty to reverse the trend of declining demand and enhance the quality of this field.

The statistical population of this study includes all senior and executive managers (including deans, vice deans of education and research, department heads, and faculty deputies) as well as all faculty members (including professors, associate professors, assistant professors, and lecturers) in the field of physical education and sports sciences at public and private universities in the Kurdistan Region. Given the need to obtain opinions from informed and involved experts, a non-probability purposive sampling method with a snowball approach was employed. In this method, initial contact was made with a number of well-known and experienced managers and professors in this field, who were then asked to introduce other eligible colleagues. The main criteria for sample selection were having at least five years of teaching or management experience in this field and sufficient familiarity with the student recruitment process and its educational challenges. Accordingly, the final sample consisted of 108 individuals. This sample size was deemed

sufficient and appropriate considering the comparative nature of the research and the need to perform the intended statistical tests.

The present study was conducted with the participation of 108 managers and faculty members from physical education and sports sciences departments and faculties in universities of the Kurdistan Region. The sample consisted of 27 women (25%) and 81 men (75%). Regarding educational attainment, 21 individuals (19.4%) held doctoral degrees, 46 individuals (42.6%) held master's degrees, and 41 individuals (38%) held bachelor's degrees. In terms of professional position, 45 participants (41.7%) held managerial and executive roles (including heads, deputies, and department chairs), and 63 participants (58.3%) participated as professors and lecturers. The mean age of the respondents was 43.19 years, ranging from 28 to 76 years, and their mean work experience was 16.23 years, ranging from 5 to 28 years.

The main data collection instrument was a researcher-made questionnaire, systematically developed in two separate sections. The first section of the questionnaire was dedicated to measuring the factors affecting the quantitative and qualitative decline in demand for the physical education major. This section was designed based on a review of the research literature and models for analyzing higher education demand, organized into four main dimensions: individual and behavioral causes (5 items), professional and curricular causes (6 items), organizational and systemic causes (7 items), and environmental and ecosystem causes (12 items), totaling 30 items. The second section of the questionnaire was designed to evaluate proposed solutions for improving the situation and was itself divided into three hierarchical levels: general strategies (at the dimension level), sub-strategies (at the component level), and operational and specific measures. For both sections, a five-point Likert scale was used, ranging from "very low = 1"

to "very high = 5" for the perceived impact of each factor in the causes section, and for the perceived effectiveness of each solution in the strategies section.

To ensure the content validity of the questionnaire, after its initial development based on theoretical foundations, it was reviewed by 12 experts in the field of sports management (with specializations in educational management, sports marketing, and human resource management in sports) and physical education curriculum planning. This panel of experts evaluated the questionnaire in terms of the clarity and lack of ambiguity of the items, their relevance to the research objectives, the comprehensiveness of the dimensions and components, and their alignment with the local conditions of universities in the Iraqi Kurdistan Region. Their feedback was qualitatively analyzed and incorporated into the final version of the questionnaire. Furthermore, for greater assurance, the Content Validity Index (CVI) and Content Validity Ratio (CVR) were calculated for each item. Items that did not meet the acceptable threshold (above 0.79 for CVI and above 0.56 for CVR, given the number of experts) were revised. To examine the reliability of the instrument, the questionnaire was pilot-tested on 30 individuals from the target population (who did not participate in the main sample). Calculation of Cronbach's alpha coefficient yielded a value of 0.91 for the entire questionnaire and values between 0.82 and 0.89 for its subscales, all of which are above the acceptable threshold of 0.7, indicating excellent internal consistency and acceptable reliability of the research instrument.

The collected data were processed using SPSS version 26 for statistical analysis and Microsoft Excel for drawing descriptive charts and graphical data presentation. Analyses were conducted at two levels. At the level of descriptive statistics, measures of central tendency and dispersion such as frequency, percentage, mean, median, standard deviation, and variance were used to describe the demographic characteristics of the sample and summarize their responses to the items in both

sections of the questionnaire. The results of this section were primarily presented in the form of tables and column and pie charts created in Excel. At the level of inferential statistics, and to answer the comparative research questions, given the non-parametric distribution of the data (confirmed by the Kolmogorov-Smirnov test), appropriate non-parametric tests were used. To compare the ranking and prioritization of the mean ranks of the four main dimensions and their components (both in the causes and solutions sections), the Friedman test was employed. To compare the views of the two independent groups, "faculty members" and "executive managers," regarding the impact level of each dimension of causes and the effectiveness level of each dimension of solutions, the Mann-Whitney U test was used. The significance level for all tests was set at 0.05.

Findings and results

This section presents all quantitative results from the questionnaire analysis in two distinct parts. The first part explores the perceived causes of declining demand, while the second part analyzes the improvement strategies for increasing demand.

A) Perceived Causes for Declining Demand:

This section presents the descriptive and comparative analysis of participants' perceptions regarding the factors influencing the demand decline. The findings are structured around four main dimensions (professional and curricular causes, environmental and ecosystem causes, organizational and systemic causes, and individual and behavioral causes) and their underlying components.

Descriptive Analysis of Perceived Causes for Declining Demand: The descriptive analysis of perceptions regarding the decline in demand for physical education and sports sciences programs in Kurdistan Region universities.

Table 1. Demographic Characteristics of the Delphi Panel and IPA Sample

Dimension (Mean/SD)	Component	Mean	SD	Item (Causes)	Item Mean	Item SD
Professional and Curricular Causes (4.32 / 0.72)	Weak Attractiveness and Relevance of Educational Content	4.21	0.85	Low attractiveness of theoretical and practical course content for students	4.07	0.94
				Insufficient alignment of courses with skills required by the sports job market	4.42	0.79
				Limited effectiveness of practical training in enhancing students' specialized skills	4.14	0.97
	Ambiguity in Career Paths and Professional Opportunities	4.43	0.68	Lack of clarity in employment paths within the physical education field	4.58	0.71
				Students' low awareness of skills needed in the sports market	4.39	0.70
				Limited understanding of professional advancement opportunities after graduation	4.32	0.87
Environmental and Ecosystem	Economic Conditions and Social Attitudes	4.19	0.84	Low income and career prospects of the field for applicants	4.83	0.45

Causes (3.95 / 0.76)				Negative impact of competition from other fields on student choice	3.81	0.98
				Limited and negative public perception towards the physical education field	3.93	1.05
	Insufficient Adaptation to Technology and Lifestyle	3.59	0.91	Students' inadequate familiarity with modern sports technologies	3.68	0.92
				Incompatibility of youth lifestyle with physical activities and sports	3.73	0.88
				Students' limited access to technological tools for sports learning	3.36	0.96
	Limited Regional Opportunities and Capacity	4.04	0.73	Inadequate access to relevant job opportunities in the Kurdistan region	4.17	0.78
				Limited opportunity for graduates to work in local sports environments	4.06	0.84
	Weak Sports Culture and Regional Identity	3.64	0.86	Limited capacity for absorbing sports talents in the region	3.94	0.71
				Few opportunities for students to participate in sports collaboration networks	3.99	0.82
				Limited influence of public culture in promoting	3.57	0.93

				student sports participation		
				University's sports identity plays a minor role in student interest	3.71	0.80
Organizational and Systemic Causes (3.52 / 0.89)	Inadequate Infrastructure and Educational Facilities	3.88	0.97	Shortage of equipment and facilities for practical training	3.81	1.04
				Limited student access to standard university sports spaces	3.95	0.95
	Weak Academic Support and Professional Networks	3.46	0.92	Insufficient university support for student participation in projects	3.30	0.98
				Limited opportunity for student interaction with clubs and sports organizations	3.53	0.90
				Lack of career counseling and academic guidance services related to the field	3.55	0.93
	Ineffective Recruitment and Promotion Policies	3.03	0.78	Mismatch between recruitment policies and regional sports needs	2.98	0.82
				University advertising for introducing the field is insufficiently effective	3.08	0.85
Individual and Behavioral	Weak Student Attitude and Interest	3.17	0.80	Low desire and motivation of applicants to continue studying in this field	3.26	0.86

Causes (2.95 / 0.84)				Decline in student interest in practical sports activities	3.08	0.89
	Limited Personal Management and Planning Ability	2.73	0.92	Low student participation in practical projects and programs	2.85	0.96
				Inadequate use of personal planning for academic success by students	2.69	0.98
				Poor time management for assignments and educational/sports activities	2.65	1.02

The descriptive analysis reveals the following order of influence for the main dimensions, from highest to lowest mean score: Professional and Curricular Causes (4.32), Environmental and Ecosystem Causes (3.95), Organizational and Systemic Causes (3.52), and Individual and Behavioral Causes (2.95). Among the specific components, Ambiguity in Career Paths and Professional Opportunities (4.43) within the professional dimension was rated as the most influential, followed by Economic Conditions and Social Attitudes (4.19) from the environmental dimension and Weak Attractiveness and Relevance of Educational Content (4.21) from the professional dimension. The least influential components were Limited Personal Management and Planning Ability (2.73) and Ineffective Recruitment and Promotion Policies (3.03). At the individual item level, the two causes with the highest perceived influence were "Low income and career prospects of the field for applicants" (4.83) and "Lack of clarity in employment paths within the physical education field" (4.58), while the two with the lowest influence were "Poor time management for assignments and educational/sports activities" (2.65) and "Inadequate use of personal planning for academic success by students" (2.69).

Based on the previous table, Figure 1 presents a description of the components of the causes of the decrease in demand in order.

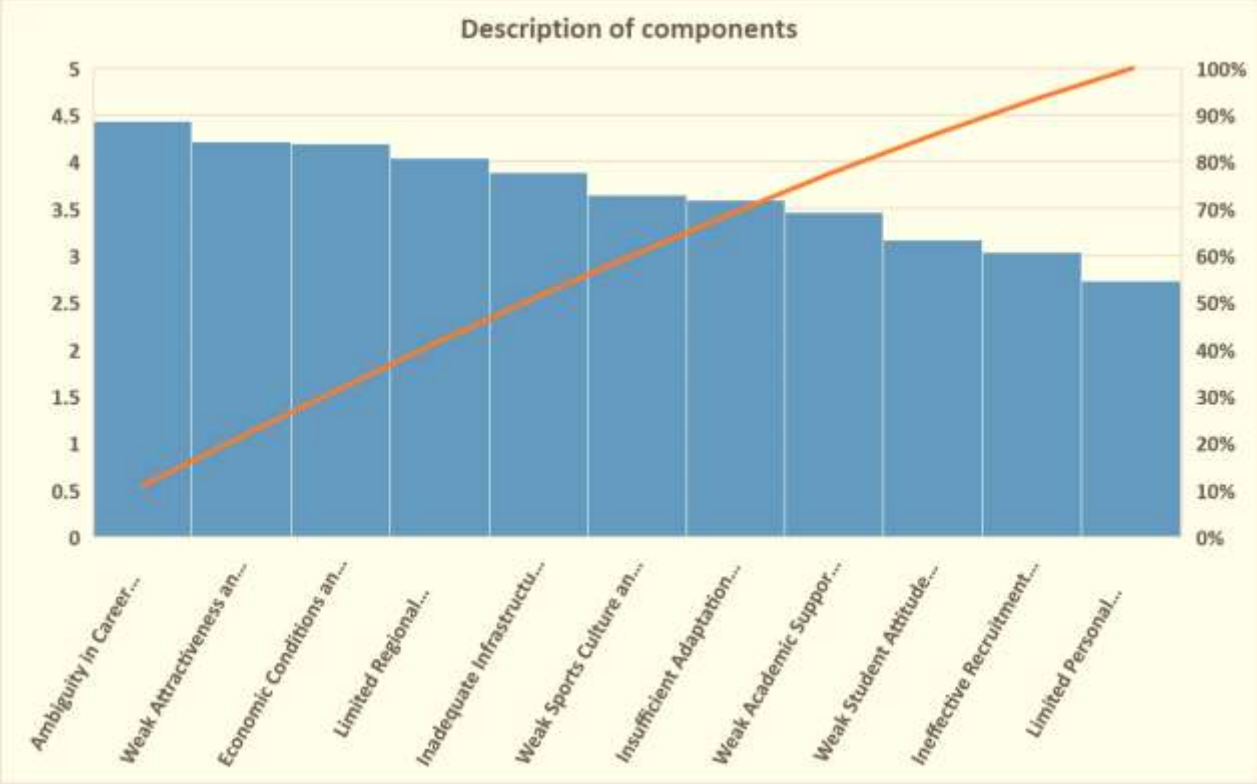

Figure 1. Description of the components of the causes of demand decline

Based on the previous table, Figure 1 describes the general dimensions of the causes of the decline in demand in order.

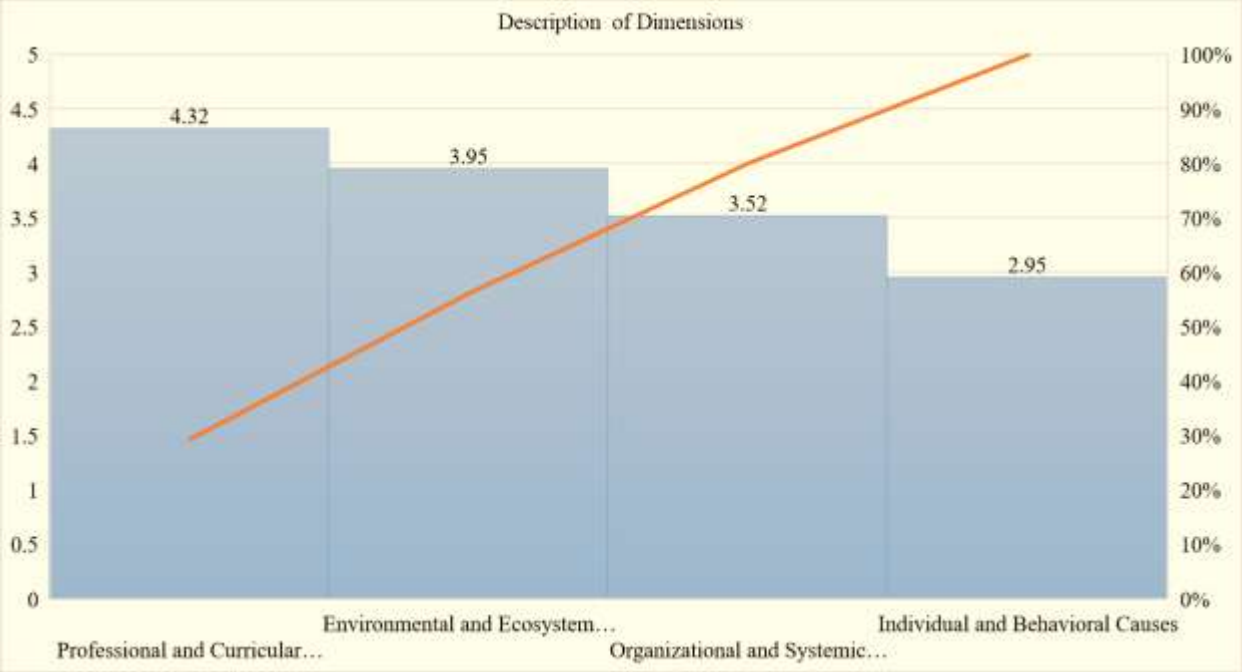

Figure 2. Description of the dimensions of the causes of demand decline

Friedman Test Results for Prioritizing Dimensions and Components: The Friedman test was employed to assess the existence of statistically significant differences in the perceived level of influence among the four main dimensions and, separately, among the eleven underlying components. The results indicate a significant overall difference in the ranking of both the dimensions ($\chi^2 = 87.41$, $p < .001$) and the components ($\chi^2(10) = 245.83$, $p < .001$). The mean ranks derived from the analysis reveal the order of perceived priority. For the dimensions, Professional and Curricular Causes (Mean Rank = 3.41) was rated as the most influential, followed by Environmental and Ecosystem Causes (Mean Rank = 2.88), Organizational and Systemic Causes (Mean Rank = 2.02), and finally Individual and Behavioral Causes (Mean Rank = 1.69). For the components, Ambiguity in Career Paths and Professional Opportunities (Mean Rank = 9.82) and Economic Conditions and Social Attitudes (Mean Rank = 9.15) were perceived as the two most critical factors, while Ineffective Recruitment and Promotion Policies (Mean Rank = 2.67) and Limited Personal Management and Planning Ability (Mean Rank = 1.77) were ranked as the least influential.

Table 2: Friedman Test Results for Main Dimensions

Variables		M.R	χ^2	df	Sig(p)
Dimension	Professional and Curricular Causes	3.41	87.41	3	< 0.001
	Environmental and Ecosystem Causes	2.88			
	Organizational and Systemic Causes	2.02			
	Individual and Behavioral Causes	1.69			
Component	Ambiguity in Career Paths and Professional Opportunities	9.82	245.83	10	< 0.001
	Economic Conditions and Social Attitudes	9.15			
	Weak Attractiveness and Relevance of Educational Content	8.74			
	Limited Regional Opportunities and Capacity	7.96			
	Inadequate Infrastructure and Educational Facilities	6.53			
	Weak Sports Culture and Regional Identity	5.88			
	Insufficient Adaptation to Technology and Lifestyle	5.12			
	Weak Academic Support and Professional Networks	4.91			
	Weak Student Attitude and Interest	3.45			
	Ineffective Recruitment and Promotion Policies	2.67			
	Limited Personal Management and Planning Ability	1.77			

M.R: Mean Rank. χ^2 :Chi-Square. Df: Degrees of Freedom. Sig(p) : Significance Level (p-value)

Mann–Whitney U Test Results for Comparing Management and executive members (Managers) and teaching and faculty members (Lecturers) Perspectives: The Mann–Whitney U test was conducted to identify significant differences in perspectives between Managers (n=45) and lecturers (n=63) regarding the influence of both the four main dimensions and the eleven specific components. Significant differences were found for two of the four dimensions. For Professional and Curricular Causes, Managers (Mean Rank = 61.32) rated this dimension as significantly more influential than faculty staff did (Mean Rank = 50.14), U = 1234.5, p = .028. Conversely, for Organizational and Systemic Causes, faculty staff (Mean Rank = 58.73) perceived it as significantly more critical than Managers (Mean Rank = 48.21), U = 1150.0, p = .009. No significant differences were found for the Environmental and Ecosystem Causes (p = .059) or Individual and Behavioral Causes (p = .216). At the component level, significant differences emerged for five specific factors. Managers attributed significantly greater importance to Economic Conditions and Social Attitudes (U = 1215.5, p = .026), Ambiguity in Career Paths (U = 1260.0, p = .041), and Ineffective Recruitment Policies (U = 1165.0, p = .013). In contrast, faculty staff rated Inadequate Infrastructure and Educational Facilities (U = 980.5, p < .001) and Weak Academic Support and Professional Networks (U = 1070.0, p = .005) as significantly more influential.

Table 3: Mann-Whitney U Test Results for Main Dimensions

Variables		M.R		U	P
		Managers	Lecturers		
Dimension	Professional and Curricular Causes	61.32	50.14	1234.5	0.028
	Environmental and Ecosystem Causes	57.84	52.38	1301.0	0.059
	Organizational and Systemic Causes	48.21	58.73	1150.0	0.009
	Individual and Behavioral Causes	53.17	55.42	1420.5	0.216
Component	Ambiguity in Career Paths and Professional Opportunities	59.81	50.92	1260.0	0.041
	Economic Conditions and Social Attitudes	55.23	53.88	1389.5	0.371
	Weak Attractiveness and Relevance of Educational Content	60.45	50.02	1215.5	0.026
	Limited Regional Opportunities and Capacity	52.18	55.90	1395.0	0.405
	Inadequate Infrastructure and Educational Facilities	58.76	51.57	1280.5	0.061
	Weak Sports Culture and Regional Identity	49.33	57.52	1220.0	0.080
	Insufficient Adaptation to Technology and Lifestyle	44.92	60.38	980.5	0.001
	Weak Academic Support and Professional Networks	46.50	59.21	1070.0	0.005
	Weak Student Attitude and Interest	62.10	49.12	1165.0	0.013
	Ineffective Recruitment and Promotion Policies	50.45	56.64	1320.0	0.175
	Limited Personal Management and Planning Ability	51.88	56.08	1368.0	0.298

M.R: Mean Rank. U : U Statistic. Df: Degrees of Freedom. Sig(p) : Significance Level (p-value)

B) Improvement Strategies for Increasing Demand:

This section is dedicated to evaluating and prioritizing the proposed strategies for reversing the demand decline trend. The strategies are weighted and analyzed at the general (dimension), subsidiary (component), and operational (specific action) levels. Based on the survey responses regarding the perceived efficacy of the proposed solutions, each strategy was assigned a weight on a scale from 0 to 1, calculated as the average Likert score divided by 5.

Table 4. Weighting of Improvement Strategies for Increasing Demand

Dimension (Core Strategies)	Weight	Component (Sub-Strategies)	Weight	Action Item (Specific Measures)	Weight
Organizational & Systemic Strategies	0.91	Expanding University-Sports Collaboration	0.93	Activating academic and career counseling centers related to sports	0.94
				Developing collaboration between the university and regional sports institutions	0.92
				Providing financial and equipment support for student projects	0.91
		Promoting the Field and Introducing Career Opportunities	0.88	Showcasing successful graduate role models to attract applicants	0.89
				Organizing festivals and sports events to strengthen field identity	0.87
				Using media to introduce career opportunities in physical education	0.86

		Improving Educational Facilities and Practical Technology	0.86	Increasing access to suitable sports spaces for training	0.88
				Modernizing university sports equipment for practical training	0.85
				Providing interactive educational technologies	0.84
Professional & Curricular Strategies	0.87	Strengthening Professional Pathways and Skills	0.89	Creating internship opportunities in clubs and sports centers	0.90
				Involving professional coaches in teaching specialized skills	0.88
				Enhancing educational programs for sports employment skills	0.86
		Revising Educational and Specialized Content	0.84	Developing new specializations needed by the sports industry	0.85
				Increasing the share of practical courses to enhance skills	0.83
				Revising syllabi based on modern sports technologies	0.82
Environmental & Ecosystem Strategies	0.82	Expanding Employment and Entrepreneurship Opportunities	0.85	Supporting sports knowledge-based businesses to absorb graduates	0.86
				Creating new jobs in sports tourism in the region	0.84
				Developing inter-university collaboration to reduce talent migration	0.83

		Advancing Innovative Sports Technologies	0.80	Developing digital platforms for exercise and practical training	0.81
				Using technology to enhance students' practical experience	0.80
				Providing technological infrastructure for modern sports learning	0.79
				Supporting the creation of specialized educational sports applications	0.78
		Promoting Sports Culture and Social Awareness	0.76	Strengthening the role of media in promoting physical activity culture	0.77
				Producing cultural programs to promote the field's importance in society	0.76
				Creating sports campaigns to increase public awareness	0.74
Individual & Behavioral Strategies	0.77	Developing Personal and Academic Skills	0.79	Implementing individual goal-setting workshops for students	0.80
				Teaching self-management skills for academic progress	0.78
		Strengthening Student Motivation and Interest	0.75	Designing participatory activities to strengthen a sense of belonging to the field	0.76
				Planning to boost motivation for practical and research activities	0.75
				Formulating motivational programs to increase student interest in this field	0.73

The analysis reveals a clear hierarchy in the perceived importance of the four main strategic dimensions. Organizational and Systemic Strategies were weighted highest (0.91), followed by Professional and Curricular Strategies (0.87), Environmental and Ecosystem Strategies (0.82), and finally Individual and Behavioral Strategies (0.77). At the component (sub-strategy) level, the most impactful were "Expanding University-Sports Collaboration" (0.93) and "Strengthening Professional Pathways and Skills" (0.89), while the least impactful were "Promoting Sports Culture and Social Awareness" (0.76) and "Strengthening Student Motivation and Interest" (0.75). At the specific action item level, the two with the highest weights were "Activating academic and career counseling centers related to sports" (0.94) and "Creating internship opportunities in clubs and sports centers" (0.90).

This chart illustrates the relative weights of the four macro-dimensions of proposed improvement strategies, facilitating a comparison of their perceived priority.

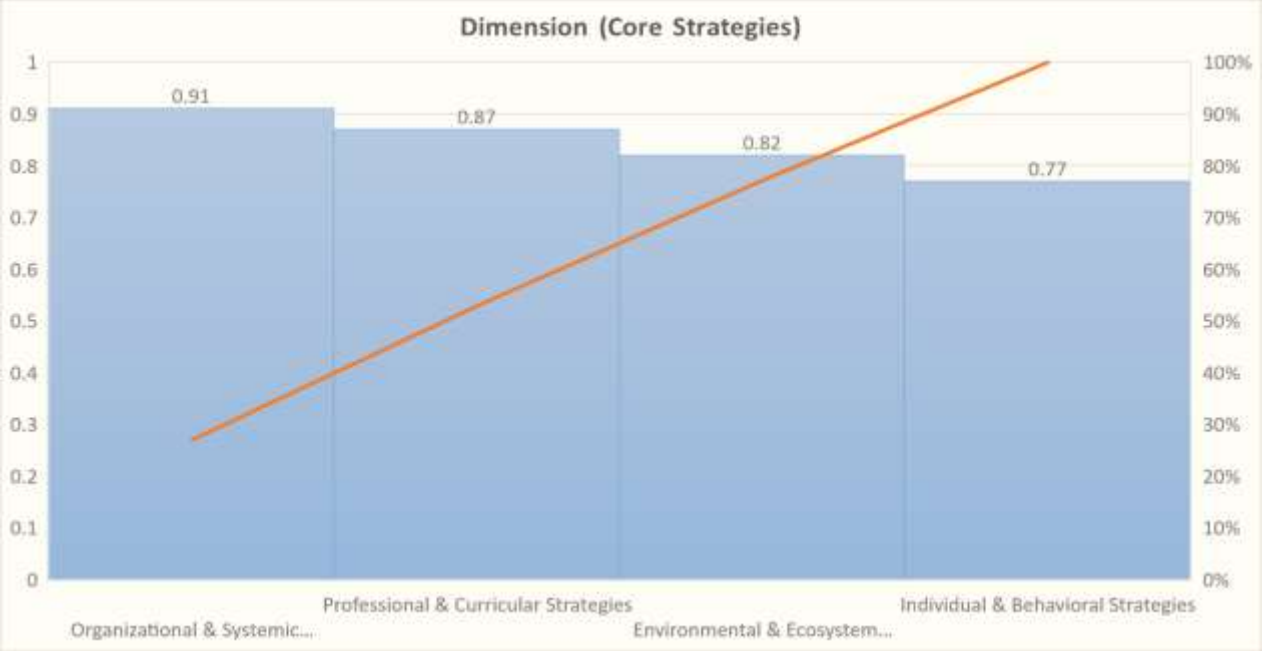

Figure 3. Descriptive Weight of Core Strategic Dimensions for Demand Improvement

This chart displays the weights of various sub-strategies, comparing the variations in perceived effectiveness across different tactical components.

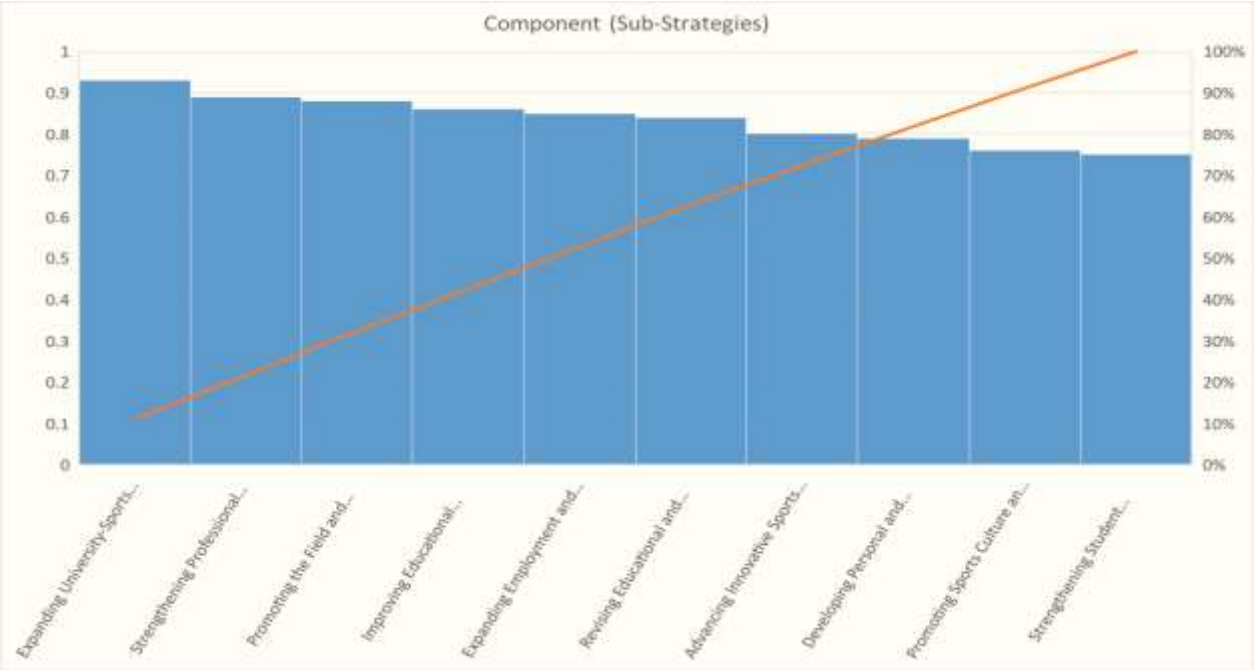

Figure 4. Distribution of Weights for Strategic Sub-Components in Demand Improvement

Discussion

This study offers a comprehensive diagnosis of the declining demand for physical education and sports sciences programs in the Kurdistan Region, with findings that are both internally consistent and well-supported by international literature.

The most decisive finding is the primacy of professional and curricular causes, particularly ambiguous career prospects and low expected income, as the principal barriers to student recruitment. This reflects a broader perception problem: while the global sports industry continues to expand, public awareness in the region largely confines this field to teaching and coaching, overlooking careers in sports management, community health, sports technology, and beyond. The issue, therefore, is not simply a weak job market but a failure in communicating the field's full professional potential, a concern echoed in studies on university choice in the Kurdistan Region (Qasim et al., 2021) and in international sports science literature (Spittle et al., 2021).

Conversely, the low ranking of individual and behavioral causes signals that respondents view student disengagement as a consequence of structural failures rather than a root cause. When programs lack clear career pathways, relevant curricula, and meaningful industry connections, declining motivation is a natural outcome. This interpretation shifts responsibility from students to the systems that serve them, consistent with findings by Hastings (2022) on the role of academic support and experiential learning in shaping student outcomes.

The divergence in perspectives between administrators and faculty further enriches the analysis. Administrators, confronted with enrollment figures and budgetary pressures, tend to emphasize economic and career-related barriers from a strategic standpoint. Faculty, by contrast, highlight operational deficiencies such as inadequate facilities, outdated equipment, and limited resources for applied learning. This misalignment risks producing fragmented responses, where administrators

pursue external marketing solutions while faculty contend with unresolved internal resource deficits (Albyati & Al-Essa, 2024).

On the solutions side, the high priority assigned to organizational and systemic strategies, particularly university-industry collaboration and career counseling services, reflects a clear institutional consensus that meaningful reform must come from within. These strategies directly address the two core drivers of decline by reducing career ambiguity through structured internships and institutional partnerships, while equipping students with market-relevant competencies (Ahmed & Any, 2022; Ameen, 2025). The strong endorsement of curriculum modernization and technology integration further signals awareness of a growing gap between program content and contemporary professional practice, where data analytics, video analysis, and digital tools have become standard (Matic et al., 2022; Molina-García et al., 2024).

The relatively low weight assigned to individual and behavioral strategies in the solutions framework reinforces the systemic logic running throughout the findings: when programs offer clear career prospects, relevant content, and a well-resourced learning environment, student motivation and engagement will follow naturally.

In sum, the demand crisis in this field is fundamentally one of credibility and relevance. Reversing it requires not recruitment campaigns, but a strategic repositioning of physical education faculties as integrated centers of education, professional development, and regional sports ecosystem engagement, a transformation that demands coordinated action among universities, ministries, sports federations, and the private sector.

Conclusion

The comprehensive analysis of this study leads to several definitive conclusions that move beyond a simple diagnosis of the declining enrollment in physical education and sports sciences programs. The evidence overwhelmingly points to a systemic disconnect between the academic offerings of these university departments and the evolving realities of the professional sports landscape and student aspirations within the Kurdistan Region. The perceived causes are not random or isolated but form a coherent narrative centered on a deficit of future-oriented clarity and practical relevance. While student motivation is a factor, it is largely contextual and reactive, shaped more by the perceived value and trajectory of their chosen field of study than by inherent disinterest. The significant divergence in perspectives between faculty and administrators underscores a critical internal challenge; strategic vision and day-to-day operational realities are not fully aligned, which can hinder the implementation of coherent, effective reforms. Therefore, addressing the enrollment crisis is not a matter of better marketing alone but requires a fundamental reassessment of the program's value proposition to prospective students and the regional community.

The proposed improvement strategies, as weighted by the expert respondents, provide a clear and actionable roadmap for this necessary transformation. The high prioritization of organizational and systemic solutions reflects a mature understanding that sustainable change must be institutionally embedded. Key among these is the imperative to forge authentic, structured partnerships with the sports industry—clubs, federations, private enterprises, and community organizations. This goes beyond occasional guest lectures to include curriculum co-design, guaranteed internship pipelines, and collaborative applied research projects. Concurrently, the modernization of educational content to integrate digital literacy, data analytics, sports technology, entrepreneurship, and contemporary

management practices is no longer optional but essential for maintaining academic currency. Furthermore, establishing a robust, proactive career development and counseling function within the faculties is crucial. This unit would not only guide current students but also actively gather labor market intelligence, showcase alumni career pathways, and demystify the diverse employment opportunities within the broader sports ecosystem, thereby directly countering the primary cause of ambiguity.

Ultimately, the revitalization of these academic programs hinges on a strategic pivot from being traditional custodians of physical education theory to becoming dynamic hubs of sports innovation and professional development for the Kurdistan Region. This requires a committed, multi-stakeholder effort. University leadership must champion this shift, allocating resources for infrastructure, industry engagement, and faculty development. Faculty must embrace curricular innovation and applied pedagogies. Crucially, regional sports authorities and the private sector must recognize universities as vital partners in human capital development and engage with them as such. By successfully executing this integrated strategy, the faculties of physical education can transform the current crisis into an opportunity. They can produce graduates who are not just knowledgeable but are skilled, adaptable, and immediately valuable contributors to the region's sporting, health, and economic sectors. This enhanced relevance and demonstrable graduate success will naturally restore the program's appeal, ensuring its longevity and amplifying its positive impact on the social and professional fabric of the Kurdistan Region.

Limitations

This research offers a focused examination of the demand challenges facing physical education programs within a specific regional context. While providing a robust diagnostic analysis, the scope of the study inherently presents certain constraints. The geographical focus on the Kurdistan Region means the findings are deeply contextualized by its unique socio-economic environment, the structure of its local sports industry, and the specific dynamics of its higher education sector. Consequently, the direct applicability of these results to other regions or national systems with differing cultural values towards physical activity, varying economic development of the sports sector, or alternative university governance models may be limited. The study's perspective is also primarily institutional, capturing the views of academics and administrators within the university system. This focus, while critical, means that the perceptions and decision-making criteria of other vital stakeholder groups such as prospective students, their families, and employers in the wider sports economy remain areas for further exploration. Their inclusion in future research could yield a more comprehensive, multi-angled understanding of the demand crisis. Additionally, the methodological approach, relying on perceptual data collected at a single point in time, provides a powerful snapshot but cannot account for evolving trends or measure the causal impact of potential interventions. These limitations do not undermine the validity of the findings for the intended context but rightly define the boundaries for their interpretation and highlight fruitful avenues for subsequent scholarly investigation.

Suggestions and Recommendation

To address the systemic issues identified, a concerted and strategic effort is required from all stakeholders connected to higher education and sports development in the region.

For Academic Program Leadership: The most critical step is a fundamental shift from an inward-looking academic model to an outward-facing, industry-integrated one. This necessitates the formal establishment of dedicated units or officer roles responsible for partnership development, career readiness, and curriculum innovation. Concrete actions should include creating a mandatory industry internship program woven into the degree requirements, instituting a curriculum advisory board with majority representation from sports employers, and launching a "Sport Careers" outreach initiative that regularly brings alumni and professionals into the classroom and onto campus for networking events. The curriculum itself requires modernization to balance theoretical knowledge with applied competencies in areas like sports analytics, digital marketing for sport, facility management, and grassroots sports development.

For University and Governmental Policymakers: Systemic change requires enabling policies and strategic investment. University leadership should develop incentive structures to reward faculty for engaging in applied research, curriculum redesign, and industry collaboration. Funding mechanisms must be adapted to support the infrastructure for practical learning, including technology and specialized facilities. At a governmental level, the ministries responsible for higher education and sports should collaborate to create a joint framework that recognizes universities as vital pipelines for human capital in the sports sector. This could involve co-funding applied research projects, jointly accrediting internship hosts, and supporting national campaigns that elevate the public perception of sports-related professions, highlighting their diversity and economic relevance.

For Future Research: To build upon this work, researchers should pursue longitudinal studies that track the relationship between specific program reforms and long-term outcomes like student enrollment, graduate satisfaction, and employment rates. Comparative case studies analyzing successful turnaround strategies in analogous academic fields or in similar regions would provide valuable transferable lessons. Furthermore, investigative work exploring the effectiveness of different stakeholder partnership models between universities and sports organizations would deliver practical blueprints for implementation.

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