

Comparative Analysis Of Sports Development In Public And Private Sector Universities Of Khyber Pakhtunkhwa (Pakistan): Mediation Role Of Financial Resources

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Abstract

This study provides a comparative analysis of sports development in public and private sector universities in Khyber Pakhtunkhwa, Pakistan, emphasizing the mediating role of financial resources. Data were gathered from 358 student-athletes and sports directors representing 34 public and private universities through a structured questionnaire. The findings revealed that financial resources significantly impact sports development in both public and private universities ($p = .000$), with public universities benefiting more. Public universities had higher mean scores for financial resources (3.1348) and sports development (3.9052), compared to private universities (3.0955 for¹ financial resources and 2.8554 for sports development). The mediation analysis showed that financial resources significantly mediate the relationship between sports development and the nature of universities (Coeff = 0.6401, $p = .000$), reducing the direct effect of sports development (Indirect Effect = -0.3141, Boot CI [-.386, -.253]). These findings highlight the critical importance of financial resources in enhancing sports development, especially in public universities, and demonstrate the mediating role of financial resources in university sports programs.

Keywords: Sports Development, Financial Resources, Public Sector, Private Sector Universities.

Introduction

One key aspect of sports development is nurturing sports within educational institutions, which includes physical fitness and talent identification and fosters partnerships among learners. This scientific introduction tries a comparative study regarding sports development in the public and private sector universities associated with the Khyber Pakhtunkhwa. The sports development initiatives actively address the mediation function of financial resources. Considering these aspects, this study aims to bring an alternative perspective on sports advancement by reflecting on organizations and offering some essential facts regarding their current state (Li, 2023).

One should not underestimate the value of sports development in educational institutions as it actively contributes to the student's health and well-being. Physical activity and involvement in sports activities are well understood to play vital roles in the physical condition, psychological state, and lifestyle quality. In addition, sports are the environments in which students acquire valuable life skills such as teamwork and leadership. The social

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responsibility of universities and other schools of thought is to encourage the development of sports activities among the students on their campuses (Tzanakis, 2024).

Regarding Khyber Pakhtunkhwa Province, comparing sports development between public and private sector universities has some relevance in Pakistan. Hence, the universities in the public sector supported by the government have been considered an ample supply of higher education for this zone. However, private colleges have recently risen as leading higher education providers. Additionally, there is a significant difference in the financing of sports facilities and structures on each side (Sun et al., 2024).

Sport development in universities plays a crucial role in fostering students' physical health, teamwork skills, and academic performance. Universities often implement sports programs not only to enhance students' well-being but also to build institutional prestige and community engagement. According to Schempp, Murnighan, and Tash (2020), university sports programs contribute significantly to student life, providing opportunities for skill development and personal growth. These programs often include various levels of competition and recreational activities designed to accommodate diverse student interests and abilities.

Moreover, university sports can impact students' academic outcomes, as participation in sports is associated with improved time management and increased motivation (Eime et al., 2013). Such involvement can lead to enhanced academic performance and higher retention rates, reflecting the integral role sports play in the broader educational experience. The effectiveness and reach of these programs, however, can vary widely depending on several factors, including institutional support and financial resources.

In Khyber Pakhtunkhwa, Pakistan, public and private sector universities exhibit notable differences in their approach to and implementation of sports programs. Public universities often receive funding from government sources, which can affect their resource allocation and program development. These institutions may face challenges such as limited budgets and bureaucratic constraints that can impact the quality and extent of their sports offerings (Ali & Khan, 2019).

In contrast, private universities in Khyber Pakhtunkhwa typically have access to different financial resources, including private funding, donations, and tuition fees. This financial flexibility allows them to invest more in sports facilities, programs, and scholarships, potentially leading to more robust and diverse sports offerings (Hussain, 2018). The disparity in financial resources between public and private universities can result in significant differences in the quality and scope of sports programs, affecting overall student participation and development.

Financial resources are a critical determinant of the success and extent of sports programs in universities. Adequate funding enables institutions to develop state-of-the-art facilities, hire qualified staff, and provide comprehensive training programs. According to Kearney and O'Brien (2017), financial resources directly influence the quality of sports programs and the ability to offer competitive opportunities for students.

In universities with limited financial resources, such as many public institutions, sports programs may be constrained by outdated facilities, insufficient staff, and limited program options (Jensen et al., 2016). Conversely, universities with greater financial means, often private institutions, can invest in high-quality resources and innovative programs, leading to enhanced student engagement and performance (Parker & Sullivan, 2014). The role of financial resources in mediating the differences between public and private sector universities highlights the need for targeted strategies to improve sports development across all types of institutions.

Objectives of the Study

- i. To find out the effects of Financial Resources on the sports development at universities of KP.
- ii. To determine the effects of financial resources as a mediating variable in relationship between sport development and nature of university
- iii. To determine the main difference among demographic attributes (nature of university,) in financial resources (MV) and sport development (IV).

Research Hypothesis:

- i. H_{A1}: Financial Resources significantly affected the sport development at universities of KP
- ii. H_{A2}: Public Sector Universities are more affected by financial resources and sport development as compared to Privet Sector Universities
- iii. H_{A3}: Financial Resources (MV) mediate the relationship between sports development (IV) and the nature of universities (DV).

Research Design:

The present study utilized a descriptive research design, which is well-suited for capturing the current situation, perceptions, and experiences of the sports director and student-athletes. This design allows for the comprehensive description and explanation of various factors influencing university sports development. By employing a descriptive design, the research aims to observe and document behavioral patterns within Pakistan's public and private sector universities in the Khyber Pakhtunkhwa region. This approach provided valuable insights into the nature of sports development in these institutions, considering the perspectives of both the sports director and student-athletes.

Population of the Study:

The study population consisted of all the sports directors (Game supervisors) and student-athletes studying in the public and private sector universities of Khyber Pakhtunkhwa, Pakistan. Including both directors of sports and student-athletes in the population ensures a comprehensive understanding of the sports development landscape from both administrative and participant perspectives.

By including public and private sector universities in the study, researchers ensure the generalizability of the findings to a broader context. This approach provides a comprehensive and inclusive perspective on the sports development scenario in Khyber Pakhtunkhwa, considering the unique characteristics and dynamics of both types of institutions. The study included game supervisors and student-athletes from public and private sector universities in Khyber Pakhtunkhwa, Pakistan. By incorporating directors for sports and student-athletes within the population, the study aims to capture perspectives from both managerial and individual viewpoints, providing insights into the dynamics of sports development within the field. As a result, the population also includes many universities from the public and private sectors, which ensures diversity of different amounts for infrastructure facilities and approaches to sports development at universities. The inclusive nature of this study allows for the generalizability of findings to both public and private sector universities, providing a comprehensive understanding of sports development endeavors undertaken by Khyber Pakhtunkhwa. This broad scope ensures that the insights gained from the study can be applicable and relevant to a wide range of institutions within the region.

1. 3.3. Sample and Sampling Technique:

There are 34 public and private sector universities in KP Pakistan, where in there are approximately 3370 students-athletes. It is almost impossible for the researcher to collect data

from the entire population. Therefore the researcher selected 358 students-athlete (slovin's formula) Using simple random technique.

2. 3.4. Mode of Data Collection (Questionnaire Design)

This study's primary instrument for data collection adopted questionnaire. The questionnaire designed based on established measures and existing literature on sports development. It consisted of structured questions that capture relevant information about sports infrastructure, resources, participation rates, challenges, and perceptions of director sports and student-athletes.

The questionnaire administered to the selected participants online or through face-to-face interviews, depending on their preferences and feasibility. Using a standardized questionnaire ensures consistency and comparability of responses, making data analysis more reliable and meaningful.

The methodology section provides a clear roadmap for the study, outlining the research design, population, sampling technique, and data collection method. By employed a descriptive research design, including a comprehensive population, convenient random sampling, and an adopted questionnaire, the study aims to gather valuable insights into sports development in universities in Khyber Pakhtunkhwa, Pakistan.

The primary data collection tool in this research adapted questionnaire. The questionnaire will be developed based on the existing measures and literature about sports development. The questionnaire used in this study is well-structured. It covers a range of essential aspects related to sports infrastructure, resources, participation rates, challenges faced in sporting activities, and the perspectives of the sports director. The questionnaire aims to gather comprehensive and relevant data for the research study by addressing these various issues.

The participants interviewed online or in person based on their consent and availability. Implementing a standardized questionnaire guarantees consistency and comparability among the responses, which makes the data analysis more reliable and meaningful.

The methodology section provides an exact road map for the study, explaining the research design population, sampling technique, and data collection procedure. A descriptive research design with a comprehensive population, convenient random sampling method, and the adopted questionnaire data collection tool within this study enable one to obtain valuable details regarding sports development in Khyber Pakhtunkhwa Universities of Pakistan.

Results

H_{A1}: Financial Resources significantly affected the development of Sport at universities of KP

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.107 ^a	.111	.119	.51797

a. Predictors: (Constant), Financial Resources Mean

The table titled **Model Summary** indicated the statistics for the model regression: R (relationship show), the correlation coefficient between the observed and predicted-values of the dependent variable. In this summary model, R has (.107), indicated a low correlation. R Square the coefficient of determination, represented the proportion of variance in the dependent-variable clarified by the independent variable. In this table "R Square" (.111), it

means that approximately (11.1%) of the variance in the dependent variable explained by Financial Resources.

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.109	1	1.109	4.135	.043 ^b
	Residual	95.510	356	.268		
	Total	96.620	357			

- a. Dependent Variable: Sport Development
 b. Predictors: (Constant), Financial Resources

The table titled of ANOVA it explained the analysis of variance for the model regression. Regression and Sum of Squares, the sum of squares and the regression model-value (1.109). The degrees of freedom for the regression model (1.) The mean square for the regression (1.109). The F-statistic for the regression model (4.135). Sig-value for the F-test (.043), indicated that the regression model is significant at the .05 level. The sum of squares for the residuals (95.510). The degrees of freedom for the residuals (356). The mean square for the residuals (.268). The total sum of squares (96.620). the total degrees of freedom (357).

This table interpretation shows that the regression model that uses Financial Resources to predict Sport Development, is statistically significant. The F-statistic=4.135 with a p-value=.043 suggested that there is a significantly affect between the predictor and the dependent variable.

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.628	.159		22.79	.00
	Financial Resources	.104	.051	.107	2.033	.043

- a. Dependent Variable: Sport Development

The table titled **Coefficients** delivers the unstandardized and standardized regression coefficients along with their respected t-values as well as significance-value. The unstandardized coefficient for the constant (3.628). The standard error of the constant (.159). The t-value for the constant (22.794). The p-value for the constant (.000), indicated that it statistically significant. B, the unstandardized coefficient for Financial Resources (.104), meaning that for each unit increase in Financial Resources, the Sport Development score is expected to increase by .104 units. The standard error of the Financial Resources coefficient (.051). The standardized coefficient (Beta=.107), indicated the strength of the relationship between Financial Resources and Sport Development in standard deviation units. The t-value for the Financial Resources coefficient (2.033). The p-value for Financial Resources (.043).

This explanation highlights that the Financial Resources has a positive and significant effect on Sport Development.

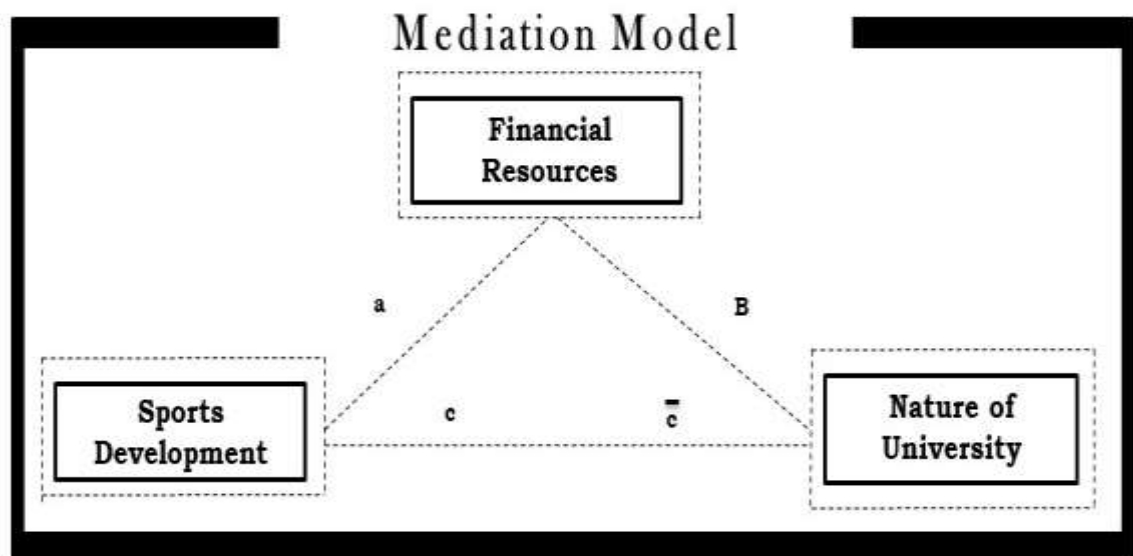
H_A: Public Sector Universities are more affected by financial resources and sport development as compared to Privet Sector Universities

Independent Samples Test

Descriptive Statistics					Levene's Test for Equality of Variances		t-test for Equality of Means		
	Nature of University	N	Mean	Std. Deviation	F	Sig.	T	Df	Sig. (2-tailed)
Financial Resources	Public	191	3.1348	.66041	103.573	.000	1.070	356	.000
	Private	167	3.0955	.34031			1.112	292.092	.000
Sport Development	Public	191	3.9052	.30638	.281	.050	26.644	356	.000
	Private	167	2.8554	.29489			26.713	352.712	.000

An independent-samples t-test showed to comparison the variable that financial resources, human resources and sport development between two public universities and private universities. The results indicated significantly differences across all variables. For financial resources variable public universities Mean= 3.13, and SD = 0.66) scored higher than private universities Mean=3.10, and SD=.34; Df=292.092 and t= (1.112) p=.000. While, in sport development, public universities (M = 3.91, SD = 0.31) scored higher than private universities (M = 2.86, SD = 0.29); Df=352.712, t=26.71 and p=.000.

H_A: Financial Resources (MV) mediate the relationship between sports development (IV) and the nature of universities (DV).



The first Step (Path a)

Model: 4

Y: Nature of University X: Sports Development M: Financial Resources n= 358

OUTCOME VARIABLE Financial Resources

Model Summary

R	R-sq	MSE	F	df1	df2	P
.3937	.1550	.1097	369.1641	1.0000	356.0000	.0000

Model

	Coeff	Se	T	P	LLCI	ULCI
Constant	2.6975	.0103	262.6351	.0000	2.6773	2.7176
Sports Development	.1311	.0068	19.2136	.0000	.1177	.1444

The above table show a direct path between independent variable of sports development and mediating variable financial resources positive and statistically significant (b=.1311, s.e = .0068, p< .001) path a.

The Second and Third Step (Path b and c')

OUTCOME VARIABLE Nature of University **Coding of Binary Y for Logistic Regression**
Public Sector= 1 (.00) Private Sector= 2 (1.00)

Model Summary

-2LL	ModelLL	Df	P	McFadden	CoxSne II	Nagelkrk
356.2953	274.4372	2.000	.0000	.1192	.1274	.1870

Model

	Coeff	Se	Z	P	LLCI	ULCI
Constant	4.9422	.4656	10.6137	.0000	4. 0295	5. 8548
Sports Development	.6401	.0546	11.7138	.0000	.5330	.7472
Financial Resources	-2.3967	.1759	-13.6241	.0000	-2.7415	-2.0519

Log-odds metric

The path from independent variable sports development and dependent variable universities nature is positive and significant ($b=.6401$, $s.e=.0546$, $p<.001$) path c' , indicating that students belongs to private university score higher on sports development while public sector university score lower on the measure. The direct effect of financial resources on nature of university is negative and significant ($b= -2.3967$ $s.e= .1759$, $p<.001$) path b , indicating a lower response from the students of private universities on the measure of financial resources as compared to the scores of public sector universities.

Direct effect (c') = .6401

Indirect effect= $a*b$ $[(.1311) *(-2.3967)] = -.3142$

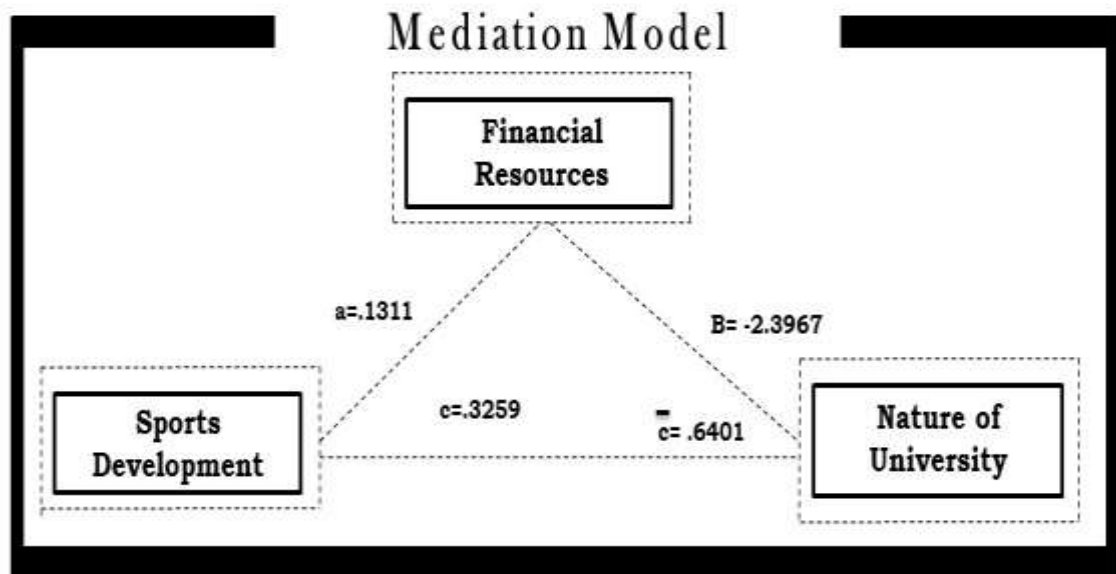
Total effect= Direct effect+ indirect effect
 $= [(.6401) + (-.3141)] = .3259$

The alpha value for the total effect is considered significant because it is the sum of the significant direct effect (c') and the significant indirect effect (ab).

A value of McFadden's R-squared 0.1192 suggests that the full model explains about 11.92% of the variance in the outcome variable compared to the null model. Although this might seem low, in the context of logistic regression, McFadden's R-squared values are typically lower than those in linear regression.

A value of Cox & Snell R-squared 0.1274 means that about 12.74% of the variability in the outcome variable is explained by the model.

A value of 0.1870 indicates that the model explains approximately 18.70% of the variance in the outcome variable. This adjustment makes Nagelkerke's R-squared more comparable to the R-squared in linear regression.



DIRECT, AND INDIRECT EFFECTS OF X ON Y

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Direct effect of X on Y					
Effects	Se	Z	P	LLCI	ULCI
.6401	.0546	11.7138	.0000	.5330	.7472

Indirect Effect (s) of X on Y				
	Effects	BootSE	BooLLCI	BootULCI
Financial Resources	-.3141	.0338	-.3859	-.2528

The above table showing the indirect effect of sports development on nature of university (-.3141) which was found statistically significant by using non-parametric bootstrapping with 95% confidence interval.

In the model financial resources play mediating role in the relationship between sports development and nature university of the students in the province of Khyber Pakhtunkhwa (KP), Pakistan. The model depicts the competitive mediation in which direct effect ($b=.6401$ & $p<.001$) and indirect effect ($b= -.3141$ & $p<.001$) opposite in direction. While the complementary mediation refers to the direction of direct and indirect effect in the same direction (Khan et al., 2024). Therefore, based on the significant results of indirect effect H1 is accepted and on the basis of significant results of direct effect H2 was also accepted. Consequently, given the significant direct, indirect, and total effects, a partial mediation was identified within the model.

Findings

According to the findings the analysis discovered that financial resources significant effected on sport development among different student-athletes from public sector universities and private sector universities from Khyber Pakhtunkhwa (KP), Pakistan, $n=358$. The sigma-value was .000 indicated a highly statistically significant effected, as it is below the p-value (.05). So, this finding highlights the critical role of financially resources in enhance sport development within the university's context.

The research findings showed that public sector universities institution more significant effected by financially resources, human resources, and material resources, as well as sport development, to compared private universities institutions among the student-players in PK, Pakistan, $n=358$. The mean scores of financially resources (public sector universities= 3.1348 , private sectors universities= 3.0955), and sport development (public sector universities = 3.9052 , private sector universities= 2.8554), all with a sigma value of .000, Therefore, the study highlight the more effect of these aspects on public universities, and all results indicated significance below the p-value (0.05).

According to the mediation data results indicated that financially resources significant mediated the association between sports development and the nature of universities sectors among student-players in KP, $n=358$. They directed influenced of sports development on the nature of universities institution was significant (Coeff = 0.6401 , and sig= 0.000), while the indirect influenced through financially resources also significantly and negatively (Indirect Effect= -0.3141 , and BootCI [$-.386, -.253$]). So, these results indicated that while sports

development positive effected the nature of universities, financially resources mediate this relationship, reduce its all effect.

References

1. Ali, A., & Khan, M. S. (2019). Challenges faced by public universities in Pakistan: A case study of Khyber Pakhtunkhwa. *Journal of Higher Education Policy and Management*, 41(1), 58-72.
2. Eime, R. M., Harvey, J. T., Charity, M. J., & Casey, M. M. (2013). The role of sport participation in the development of physical activity and health outcomes. *Sports Medicine*, 43(9), 825-839.
3. Hussain, I. (2018). Private sector universities and their role in educational development in Khyber Pakhtunkhwa. *International Journal of Education and Development*, 15(2), 144-156.
4. Jensen, C., Lund, J., & Ross, S. (2016). Financial resources and their impact on university sports programs. *Journal of Sports Management*, 30(5), 550-563.
5. Kearney, J., & O'Brien, M. (2017). Resource allocation and its effect on sports program effectiveness in higher education. *Higher Education Research & Development*, 36(3), 477-492.
6. Li, Z. (2023). Research on physical education management in Chinese colleges and universities.
7. Parker, D., & Sullivan, J. (2014). Investing in university sports programs: A comparative study of public and private institutions. *Journal of Educational Administration*, 52(4), 457-472.
8. Schempp, P. G., Murnighan, K., & Tash, M. (2020). The impact of sports on student development and institutional success. *Journal of College Student Development*, 61(2), 189-204.