






# International Journal of Sport Studies for Health

Journal Homepage



## Innovative Strategies and Competitive Dynamics in Non-Profit Sports Clubs: From Transformation to Performance



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### Article Info

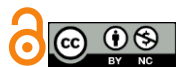
#### Article type:

Original Research

#### How to cite this article:

García-Fernández, J., Karimi, J., Pashaie, S., Golmohammadi, H., & Piątkowska, M. (2025). Innovative Strategies and Competitive Dynamics in Non-Profit Sports Clubs: From Transformation to Performance. *International Journal of Sport Studies for Health*, 8(4), 1-13.

<http://dx.doi.org/10.61838/kman.intjssh.8.4.7>



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### ABSTRACT

**Objective:** This paper examines the impact of IB, ED, and CA on OP in NPSOs. Given the increasing challenges such as economic and social changes and increasing competition, the present study identifies factors that can help improve the performance of these clubs.

**Methods and Materials:** In this research, we have proposed a theoretical model and empirically tested the model in a sample of 391 board members of NPSOs in Tehran province of Iran.

**Findings:** The findings support the proposed model, and the structural equation modeling (SEM-PLS) evaluation suggests that, IB has a positive and significant effect on OP and CA acts as a mediating variable in this relationship. Also, ED also has a positive effect on OP. Overall, the findings indicate that innovation and the ability to adapt to environmental changes can significantly contribute to improving OP.

**Conclusion:** This research adds to the richness of the sports management literature and recommends that NPSO managers focus on enhancing innovation and adaptation to environmental changes to gain sustainable CA.

**Keywords:** *Innovative behavior, environmental dynamics, competitive advantage, organizational performance, Nonprofit Sports Clubs.*

### 1. Introduction

In recent years, nonprofit organizations (NPOs), particularly nonprofit sports clubs (NPSCs), have faced numerous challenges, including financial constraints, technological advancements, shifts in consumer behavior,

administrative burden, and voluntary affiliations (1-3). To differentiate themselves from commercial sport providers, NPSCs must leverage their resources and knowledge to foster innovation, which is crucial in the competitive sports market (4, 5). As organizations navigate rapidly changing regulations and emerging technologies, the importance of

Article history:

Received 20 May 2025

Revised 08 July 2025

Accepted 19 July 2025

Published online 01 October 2025

innovation in the sports sector becomes increasingly evident (6-8). However, the movement of service organizations, especially NPSCs, along with other organizations, towards globalization requires attention to innovation with the aim of responding to changing customer needs and capturing market opportunities (9, 10), which in terms of underexplored academically (11).

In this research, we develop a preliminary model of factors that enhance innovative behavior (IB) in NPSCs. The challenges faced by these clubs necessitate the adoption of IB to thrive in dynamic environments (12-14). IB is a process in which employees generate, development, testing, modification and commercialization of ideas (15). Rapid technological and social changes underscore the necessity of IB among employees (16). Evidence shows that the success of innovation in non-profit sport organizations (NPSOs) heavily relies on the attitudes of key individuals within the organization (17, 18). Several researchers have concentrated on innovation within NPSCs (19-21).

Dynamic capability is a key factor in achieving competitive advantage (CA) and enhancing organizational performance (OP) (22). Innovation and environmental dynamism (ED) are critical for achieving organizational goals (23-25). Evidence suggests that innovation aids in adapting to environmental changes, contributing to CA and ultimately improving OP (26-28). For NPSCs, enhancing performance and competitiveness is vital for achieving long-term objectives, attracting participants, and positively impacting society (21, 29, 30).

Furthermore, ED notably influences the relationship between IB and OP (31-33). In more dynamic environments, the impact of innovation on performance is amplified (32, 34), as organizations must quickly adapt to changes (35-37). CA can be enhanced through IB, increasing an organization's capacity to differentiate itself (38-40). For NPSCs, which often contend with resource constraints and competition from commercial clubs, adopting IB is important for maintaining CA (20, 41).

Since, the role of NPSCs extends beyond promoting public health (42); they also foster social solidarity (43) and contribute to the economic development of communities (2, 44, 45). In this study to address these gaps, we focus on key board members (i.e. president, board member, general secretary) of NPSCs (21), because they have the highest strategic or managerial positions and are knowledgeable about club development and innovation implementation (12). Our study contributes to the literature on innovation and OP by highlighting the roles of IB, ED, and the potential

mediating variable CA in NPSCs. Previous studies confirm that innovations can be a source of CA (46, 47). NPSCs play a crucial role in community engagement and sports development, and enhancing their performance requires a deep understanding of the interplay between innovative behavior, environmental dynamics, and competitive advantage. In this study, the impact of IB and the ED is examined by examining the mediating role of CA on OP. On the other hand addresses the specific challenges faced by NPSCs, such as digitalization and shifts in user behavior.

Innovative behavior means creating, promoting, implementing and achieving creative ideas. The IB of employees refers to their contribution to organizational development; This behavior should not only describe the mental processes of generating new ideas, it should also introduce and apply new ideas with the aim of improving OP (48). In recent years, organizations have had to compete in a original environment and move toward more innovation, higher quality delivery and more effective response to consumer needs and preferences (49). IB and creativity in sports clubs is known as a key factor in creating CA and improving OP (50). Sports clubs are encouraged to change to meet customer satisfaction and expectations. Due to the growth of commercialization and professionalism of the sports industry, the ability of sports clubs to create innovation and innovative performance is important (6, 51). Innovation in this area can include developing new practice methods, improving customer service (52), and using new technologies that help increase member satisfaction and retention (53).

Research shows that clubs that pay more attention to innovation can to increase productivity and reduce costs, thereby improving their overall performance (54). The findings show IB has positive and meaningful effects on the customer capital, human capital and organizational capital (48). Evidence suggests that IB has a positive effect on OP (55), is in line with the findings of various studies that have investigated the relationship between innovation and performance in sports organizations (12). In particular, these researches show that innovation not only helps to improve service quality, but can also lead to increased customer loyalty (56) and ultimately improve the financial results of clubs (57). Therefore, the first hypothesis is, presented as follows:

**H1.** Innovative behavior positively influences organizational performance.

The social function of NPSCs is undeniable, so it is vital to analyze the factors affecting their performance (58).

According to the literature on strategic change, OP is inextricably linked with the strategy of an organization, because it is the strategy of an organization that can empower it in terms of competitiveness and ultimately affect the performance (59). ED is recognized as one of the key factors in organizational success, especially in NPSCs (54). Rapid and continuous changes in the economic, social and technological environments can have substantial effects on the performance of these organizations (60). In fact, research has shown that organizations that can adapt to environmental changes usually perform better (61). For example, in the field of sports, clubs that respond quickly to the changing needs of customers and market conditions can attract more loyalty from their members and thus achieve improved financial and social performance (6, 62). With the increasing impact of changes in environmental factors on the performance of organizations, the necessity of IB to create a CA on OP is felt more. Therefore, the second hypothesis of this research indicates that ED can have a notable impact on OP, so that NPSCs should pay special attention to these dynamics to be successful in the increasing competition. Hence, the second hypothesis states:

**H2.** Environmental dynamics influences organizational performance.

The concept of CA is directly related to the values desired by the customer. In other words, the closer the values provided by an organization are to the desired values of the customer or in line with them, the organization can have an advantage over its competitors in one or more competitive criteria (63). In sports management literature, CA is known as a key factor in the success and sustainability of sports clubs (64, 65). IB, as a mediating factor, can significantly affect the CA of these organizations (40, 66). Innovation in processes, products and services can help clubs respond to changing customer needs (13) and provide innovative experiences that ultimately lead to attracting (67) and keep more fans (6). Also, research has shown that organizations that pay more attention to innovation can differentiate themselves in the market and increase their market share (68). Moreover, the results show that IB has a positive and significant effect on CA (69). In particular, CA allows clubs to attract more customers in turbulent sports markets by offering unique services and products, thereby improving their financial and social performance (70). Therefore, the hypothesis 3 that IB positively affects CA is strengthened by the available evidence in this field. Therefore, we hypothesis that:

**H3.** Innovative behavior positively influences competitive advantage.

Organizational performance refers to the way of performing organizational activities, tasks and missions and the results obtained from them (48). OP shows how the organization achieves its mission and goals (71). In today's world, sports clubs as economic and social institutions face many challenges that double the need to improve OP (72). As can be seen, due to the wider and heterogeneous demand, sports clubs have had to improve their structure, adjust the services provided and achieve greater professionalism to meet the expectations and needs of their members and users (73). One of the most key factors in this regard is the CA that can help increase the efficiency and effectiveness of these organizations (74). In this regard, the findings show that, CA has positive and meaningful effects on OP (48). Research has shown that sports clubs that are able to create and maintain CA are not only more successful in attracting and retaining members, but can also lead to improved service quality and increased customer satisfaction (62, 75). As can be seen, CA can have a direct, positive impact on OP (74). Therefore, our fourth hypothesis is expressed as follows:

**H4.** Competitive advantage positively influences organizational performance.

Innovation is recognized as a key factor in improving the performance of NPOs (76), and in this regard, perceived service CA can act as an effective mediator. To maintain a CA, it is important for companies to invest in the IB of managers and employees through training. Management should create an environment that supports the generation of new ideas by employees and the coordination of these ideas to improve products and services (69). Innovation in the management of sports organizations is a subject of great interest, because it helps to improve the performance of organizations and increase their CA (77). For example, sports clubs have increased their efficiency and effectiveness by taking advantage of innovation (78), and as a result, they have succeeded in gaining a CA (17). Flexibility and innovation are critical to organizational performance and goal achievement, as these factors help optimize processes and maximize profits (79). Value creation in sports goods and services has emerged as an opportunity to foster innovation and exploit market opportunities (80).

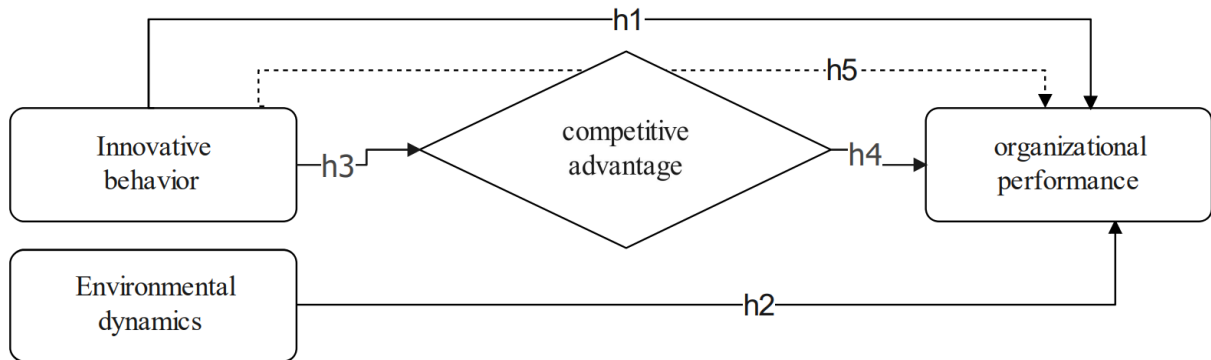
Specifically, CA allows organizations to provide differentiated services that, in turn, increase the satisfaction of stakeholders and community members (81). In this regard, IB can lead to improving the quality of services and increasing the effectiveness of programs and projects, which

ultimately helps to improve OP (82). Based on these arguments, we hypothesise that perceived service CA plays a mediating role in the relationship between IB affects OP. Therefore, our hypothesis is expressed as follows:

**H5:** Competitive advantage plays a mediating role in the relationship between innovative behavior affects organizational performance.

Figure 1 illustrates the conceptual model of the research, depicting the relationships between innovative behavior, environmental dynamics, competitive advantage, and

organizational performance. This model examines the mediating role of CA within these relationships. Solid lines represent direct effects, while dashed lines indicate indirect effects. In this model, hypotheses are formulated based on the impact of IB on OP and the influence of ED on organizational success. This structure aids in a better understanding of the relationships between innovation, competition, and performance, providing strategies for enhancing the effectiveness of NPSCs.



**Figure 1.** Conceptual mediation model and hypotheses.

## 2. Methods and Materials

### 2.1 Study Design and Participants

This study aimed to assess the innovative behavior, environmental dynamics, competitive advantage, and organizational performance in NPSCs by examining the role of competitive advantage. To test the proposed conceptual model, a quantitative research method is adopted in this study, as the conceptual model is developed based on past theories; therefore, a deductive approach is used to test the model (83).

This study took place in 2024, with data collected through an online survey targeting board members of non-governmental sports clubs in Tehran Province, Iran. Because of its 3100 non-governmental sports clubs, geographical and sociological variety, and accessibility for academics, Tehran province was chosen as the study location. Initially, the province was divided into four geographical sections (North, South, East, West), and cluster sampling was employed. A total of 125 clubs were randomly selected from each area, resulting in the distribution of 500 questionnaires. The geographic dispersion of the clubs and the sensible

placement of samples in various areas justified the use of this strategy. The sample size was estimated according to the guidelines provided Cochran (84), which indicated the need for 384 respondents. Ultimately, 391 complete questionnaires were collected from the 500 distributed, yielding a response rate of 78.2%. According to Comrey and Lee (85), sample size of 300-500 is good, 500-1000 is very good and 1000 is brilliant for structural equation modeling (SEM). The size of the sample of this research (N= 391) is acceptable and good, which means the sample size for this study was in accordance with the most important rule of thumb quoted in the academic literature.

To select the statistical samples, only key board members and senior managers (i.e. president, board member, general secretary) with at least two years of management experience were selected to ensure their familiarity with operational processes. Clubs were also required to verify the respondents' competence in terms of knowledge of innovation, competitive advantage, and environmental dynamics. These criteria were intended to ensure the accuracy and precision of the data collected. Demographically, the majority of participants were male

(73%), with most respondents aged between 31 and 40 (43%) and holding a bachelor’s degree (48%).

2.2 Measures

To ensure the anonymity of the survey and the exclusive use of the data for research purposes, an invitation was sent to participants, specifically key board members from non-governmental sports clubs. After a one-month reminder to encourage participation, 391 board members completed the survey, each representing a club in their respective region. The questionnaire was generated using the Press Line website, and a link was distributed to the study samples. Managers were required to complete an informed consent form, ensuring them of the confidentiality of the collected data. The questionnaires, which had established content validity through prior scientific research, were slightly modified to align with the indicators of this study.

The IB questionnaire by Scott and Bruce (86) includes six items assessing factors impacting workplace innovation. The OP questionnaire, adapted from Mafini and Poee (87), consists of eight items. The CA questionnaire, derived from Azeem, Ahmed (88), comprises five items, while the ED questionnaire, based on Surty and Scheepers (89), contains four items measuring the impact of ED. All questionnaires utilized a five-point Likert scale (from 1 = strongly disagree to 5 = strongly agree).

To validate the questionnaire, six university professors specializing in sports management reviewed it for content and form, providing suggestions for clarification. After summarizing their comments, the final version consisted of 23 main questions. To assess internal consistency and reliability, Cronbach’s alpha ( $\alpha$ ) and the overall correlation of all factors were analyzed, which is a standard practice in quantitative studies to ensure validity.

2.3 Data Analysis

This study utilized PLS-SEM to evaluate model fit and the relationships among variables. Reliability was assessed through composite reliability (CR), with values exceeding 0.70 indicating satisfactory internal consistency (90). Convergent validity was established using factor loadings greater than 0.707 and average variance extracted (AVE) values above 0.50, following guidelines by Fornell and Larcker (91). Discriminant validity was evaluated by comparing the square root of AVE with correlation coefficients (90).

Additionally, path analysis with bootstrapping (5000 repetitions) was employed to test hypotheses and evaluate significant indirect effects (92). Model adequacy was assessed using RMS-Tehta and standardized root mean square residual (SRMR) indices, emphasizing the balance between model fit and predictive power in PLS-SEM (93).

Key indices used in evaluating the structural part of the model included the coefficient of determination ( $R^2$ ) and the predictive power index ( $Q^2$ ).  $R^2$  values of 0.19, 0.33, and 0.67 indicated weak, moderate, and strong explanatory power, respectively (94). The  $Q^2$  index indicated predictive power, with values classified as 0.01 (weak), 0.25 (moderate), and 0.36 (strong) according to Purwanto and Sudargini (95). These indices assist researchers in accurately assessing the performance and capability of their structural models.

3. Results

The results highlight the reliability and validity of the constructs, with Composite Reliability (CR) values above .70 and Average Variance Extracted (AVE) scores above .50, ensuring internal consistency and convergent validity. Additionally, strong correlations among factors and significant path coefficients underscore the positive effects of IB, CA, and ED on OP.

Table 1. Psychometric properties of the measures.

| Variable | Item | $\Lambda$ | CR   | AVE  | A    |
|----------|------|-----------|------|------|------|
| CA       | CA1  | .818      | .898 | .696 | .891 |
|          | CA2  | .877      |      |      |      |
|          | CA3  | .779      |      |      |      |
|          | CA4  | .854      |      |      |      |
|          | CA5  | .840      |      |      |      |
| ED       | ED1  | .791      | .796 | .611 | .789 |
|          | ED2  | .776      |      |      |      |
|          | ED3  | .799      |      |      |      |
|          | ED4  | .761      |      |      |      |
| IB       | IB1  | .782      | .884 | .626 | .888 |

|    |     |      |      |      |      |
|----|-----|------|------|------|------|
|    | IB2 | .706 |      |      |      |
|    | IB3 | .820 |      |      |      |
|    | IB4 | .823 |      |      |      |
|    | IB5 | .824 |      |      |      |
|    | IB6 | .784 |      |      |      |
| OP | OP1 | .788 | .917 | .627 | .915 |

As a next step, Cronbach’s alpha was used to examine the reliability of the measures. Yount (96) suggested that the acceptable values of Cronbach’s alpha would range from .70 to .95. In the current study, a cut-off value of 0.70 was adopted. Furthermore, the optimal inter-item correlations mean or factor loadings ( $\lambda$ ) should range from 0.2 to 0.4, in

order for the factor to be reliable (97). However, in this study, a value of 0.4 and above was adopted. Furthermore, the psychometric properties in Table 1 confirm the reliability and validity of the constructs, with all CR values above 0.70 and AVE scores above 0.50, ensuring internal consistency and convergent validity.

**Table 2.** Correlations among the second-order factors.

| Item | CA    | ED    | IB    | OP    |
|------|-------|-------|-------|-------|
| CA   | .834  |       |       |       |
| ED   | .591  | .782  |       |       |
| IB   | .592  | .488  | .791  |       |
| OP   | .587  | .531  | .612  | .792  |
| Mean | 3.867 | 3.804 | 4.035 | 4.114 |
| SD   | .855  | .763  | .706  | .670  |

Table 2 indicates strong correlations among the second-order factors, with CA correlated with ED (.591) and IB (.592), highlighting their interconnectedness. OP is positively correlated with all factors, particularly IB (.612), suggesting that innovation plays a vital role in enhancing performance outcomes. The highest mean value is for OP (4.114), indicating the greater importance of this factor compared to the others, while its standard deviation (.670) is the lowest, indicating greater stability of the data in this factor. Overall, these results indicate positive and significant relationships between the different factors.

T-values, standard beta, R-square, and predictive relevance ( $Q^2$ ) were measured to assess the proposed model. Moreover, the coefficient of determination ( $R^2$ ) was the other indicator of the goodness of fit, revealing the study’s internal variables. SRMR is Standardized Root Mean Square Residual where according to Yamin (98), SRMR is a measure of the fit model. This value is obtained from the difference between the data correlation matrix and the estimated model correlation matrix. In Sarstedt, Ringle (90), an SRMR value below 0.08 indicates a fit model. Nonetheless Schermelleh-Engel, Moosbrugger (99) stated that the SRMR value of 0.08 – 0.10 is still an acceptable fit.

**Table 3.** Model Fit

| SRMR | $Q^2$ | $R^2$ | Variable |
|------|-------|-------|----------|
| .081 | .237  | .350  | CA       |
|      | .292  | .479  | OP       |

Table 3 shows an acceptable model fit with an SRMR of .081, indicating minimal residuals. The  $R^2$  values of .350 for CA and .479 for OP demonstrate moderate explanatory power, while  $Q^2$  values (.237 and .292) confirm predictive relevance, all significant at  $p = .001$ . The estimation result of the model is 0.081, it shows that the model used is fit.

Notably, the potential relationships between the variables were examined using t-test. According to Table 4, the results

of the t-tests on all the proposed sub hypotheses (Hypotheses 1-5) led to the support of the main research hypothesis (Hypothesis 0). Moreover, the beta coefficients ( $\beta$ ) were calculated to measure the pathways for all the hypotheses. Based on the effects of the predictive variables, the independent variables can only slightly account for the observed changes in the dependent variables.

**Table 4.** Parameter estimators in the hypothesized structural model.

|    | Path coefficients | $\beta$ | t      | Sig   | Result    |
|----|-------------------|---------|--------|-------|-----------|
| H1 | IB -> OP          | 0.364   | 6.063  | 0.001 | Supported |
| H2 | ED -> OP          | 0.206   | 4.146  | 0.001 | Supported |
| H3 | IB -> CA          | 0.592   | 14.565 | 0.001 | Supported |
| H4 | CA -> OP          | 0.250   | 5.320  | 0.001 | Supported |

Finally, the outcomes of PLS3 software could confirm the obtained critical values higher than 1.96, given the confidence level of 95%. The path coefficients reveal that IB has a significant positive effect on OP (H1;  $\beta = 0.364$ ), indicating that organizations that prioritize innovation tend to achieve better outcomes. ED also positively influence OP (H2;  $\beta = 0.206$ ), highlighting the role of adaptability to external changes. Furthermore, IB enhances CA (H3;  $\beta = 0.592$ ), which in turn positively affects OP (H4;  $\beta = 0.250$ ).

Variance accounted for (VAF), which is one method of calculating the role of mediator variables. With the VAF, it is possible to determine the extent to which the variance of

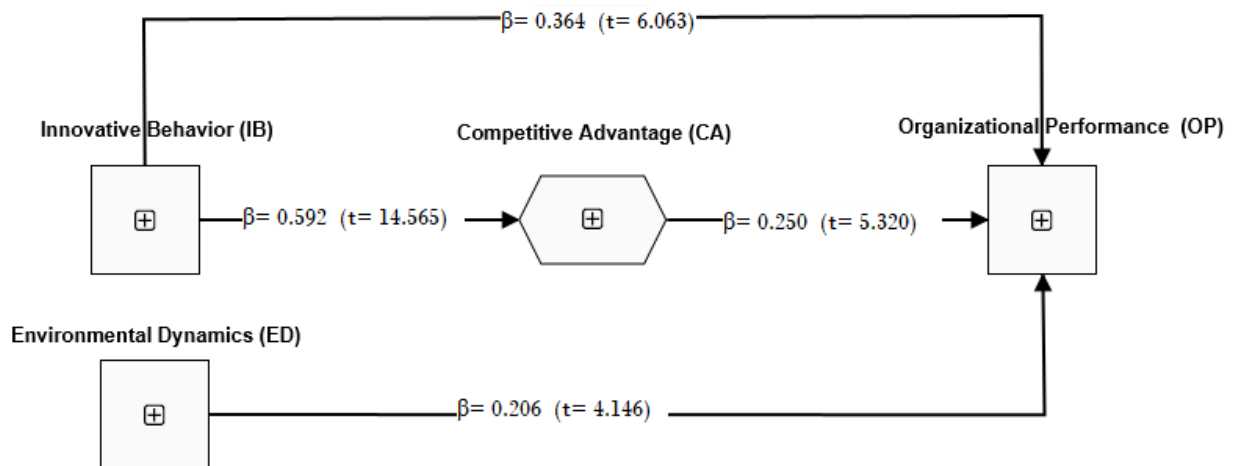
the dependent variable is explained directly by the independent variable, how much of the target variance is explained by indirect relationships and how much of the target variance is explained by indirect relationships through the mediating variable. This method is used in partial least squares, regression, path analysis, and structural equation modelling. If the VAF value is less than 0.20, the mediation has not occurred; if it is between 0.20 and 0.80; it is moderate; and if it is higher than 0.80, it has a strong and high mediating role (100). As a result, VAF is a value between 0 and 1. The closer this value is to 1, the stronger the effect of the mediating variable.

**Table 5.** Direct, Indirect (Mediation), Total Effects and VAF

|    | Path            | Direct effects | Indirect effects | Total effects | VAF |
|----|-----------------|----------------|------------------|---------------|-----|
| H5 | IB-->CA ---> OP | .36            | .14              | .50           | .28 |

Considering that the amount of VAF in this model is obtained (Table 5), it can be said that all VAF paths are positive and significant research models. This means that .28

total effects of IB on OP are indirectly explained by the CA mediating variable. Given that VAF are in the range of .20–.80, CA has a partial mediation role on the OP.



**Figure 2.** The structural model of research

According to Figure 2, there is a positive and strong relationship between the structures and all research hypotheses are confirmed at the level of 95%. The mediating role of CA in the relationship between IB and OP is

particularly emphasized in this model. This structure helps to provide a better understanding of the relationship between innovation, ED, and CA to improve the performance of non-governmental sports clubs.

#### 4. Discussion and Conclusion

The study's findings show that all of the research hypotheses have been significantly confirmed, and they emphasize the critical roles that CA, ED, and IB play in enhancing the OP of NPSOs. These findings not only support the findings of earlier studies, but they also advance our knowledge of how the variables being examined affect sports management. Additionally, this study highlights how crucial IB is for gaining a CA and adjusting to shifting environmental conditions. Furthermore, the findings demonstrate that NPSOs might enhance member happiness and performance by giving these elements more consideration. We will look more closely at these findings in the sections that follow:

The first hypothesis received support, indicating that IB exerts a positive influence on OP within the NPSOs. This outcome is consistent with earlier research (12, 48, 55, 77), which highlighted that process and service innovation not only raises customer satisfaction and overall organizational productivity, but also improves the quality of service delivery. In the highly competitive world of sports clubs, managers' flexibility and inventiveness in strategy can directly improve OP. Studies in the field of innovation show that IB increases the ability to play an effective role and the speed of accumulation of human and organizational resources (101). In service organizations (such as NPSCs), IB in addition to developing functional characteristics, such as new organizational knowledge, causes changes in human resources (102). As a result, by strengthening the impact of IB in OP and providing various training programs to employees, alternative solutions can be introduced to solve existing problems. These programs encourage employees to "Think outside the box" and increase their awareness and creativity (48). Also, encouraging employees to manage their creative ideas will improve effective thinking and action in the workplace and provide new services.

The second hypothesis, which posited that ED significantly influences the OP, garnered support from the study's findings, which is consistent with previous (22, 54, 59, 61). Today, for competing, all organizations must adapt themselves to the external environment. Since the business environment is highly competitive and the rate of change is on the increase, what should be constantly considered and evaluated by all the organizations is the amount of dynamism in the business environment. Therefore, because of the dynamics of the business environment, changing the organization's strategy is inevitable, and all organizations

must learn to predict and identify changes and respond intelligently to the ED and try to make strategic changes promptly to align with the environment and gain a CA for better OP (59). Sports clubs that have a high ability to adapt to rapid environmental changes can take advantage of new opportunities and turn challenges into a CA. In this regard, economic, social and technological dynamics play an important role in the success of these organizations.

Furthermore, the study showed IB directly and positively affects CA. This result is consistent with studies like (17, 22, 47, 63, 69, 77, 103), which found that businesses stand out in the market and draw in devoted clients through service and product innovation. Non-governmental sports organizations can boost their market share and maintain their competitive position by implementing creative strategies.

It was also confirmed that CA has a positive effect on OP. Because it builds mutual trust in NPSCs, improves organizational innovation capabilities and intra-organizational network communications, and ultimately improves OP. This result is consistent with researches (22, 48, 74) that have shown that organizations that have a sustainable CA perform better in attracting and retaining customers, improving service quality, and increasing financial results. This is especially important for non-governmental sports clubs that face limited resources.

This study demonstrated that the association between IB and OP is significantly mediated by CA. According to Jansen, Van Den Bosch (47) and Fatoki (69), this study demonstrates that innovative conduct increases CA, which in turn improves OP. Through innovation, sports clubs are able to strengthen their market position and provide clients with greater value thanks to this mediation.

This study emphasizes the value of creativity and the capacity to adjust to shifting conditions to enhance the success of non-governmental sports organizations. It also demonstrates how, as a crucial lever, competitive advantage can boost the influence of creative behavior on organizational success. To stay ahead of the competition in this ever-changing market, sports club managers should create strategies to boost innovation, build their competitive advantages, and keep an eye on environmental changes.

This study includes several limitations worth noting. Firstly, longitudinal research may provide a more comprehensive view of the interactions between CA, ED, and IB over time. Additionally, as the study focuses on NPSOs within a single region, the results may lack generalizability due to differences in cultural and

organizational contexts; broader sampling could help address this.

The self-reported data used in this research may also introduce bias, such as social desirability bias, which could be minimized by utilizing objective performance metrics. Moreover, this study does not account for moderating factors like organizational size or leadership style, which could influence the effects of CA, ED, and IB on OP. Future research could investigate these elements for a more detailed understanding. Finally, although the study emphasizes innovation and adaptability, it does not clarify which types of innovation are most effective. Future studies should examine specific types of innovations and adaptive strategies that best promote sustained CA and OP in the sports industry.

The findings of this study provide valuable practical implications for sports organizations, particularly NPSOs, seeking to enhance their competitive edge and performance in dynamic environments. Firstly, fostering IB is crucial for improving service delivery and member satisfaction. Sports organizations should invest in creating a culture that encourages creativity by offering training programs, allocating resources for innovation projects, and empowering employees to develop new solutions. This focus on innovation can lead to enhanced OP and increased stakeholder engagement.

Secondly, building and maintaining a CA is important for sustained success. Sports organizations should develop strategies to differentiate themselves from competitors by leveraging technology, improving operational efficiency, and tailoring their services to the needs of their members. Additionally, the ability to adapt to ED plays a pivotal role in organizational success. Managers should continuously monitor economic, social, and technological trends, enabling their organizations to anticipate and respond effectively to changes. This proactive approach can help sports organizations turn challenges into opportunities and maintain relevance in competitive markets.

Finally, the study highlights the importance of performance measurement and customized innovation strategies. By adopting objective performance metrics and feedback systems, sports organizations can evaluate the impact of their strategies more accurately, reducing biases from self-reported data. Furthermore, identifying specific innovation types—such as product, process, or service innovations—that align with organizational goals can maximize impact. Emphasizing member-centric approaches, such as addressing preferences and enhancing engagement,

will not only improve retention rates but also bolster the organization's reputation and overall success.

This study demonstrates that CA plays a crucial role in amplifying the positive relationship between IB and OP in NPSOs. The findings reveal that ED is vital for NPSOs, as it enables them to quickly adapt to external changes, seize new opportunities, and overcome challenges. As a mediating factor, CA not only enhances the impact of IB on OP but also helps sports organizations differentiate their products and services, thereby increasing their market share and improving their competitive position. Given these insights, it is important for NPSO managers to focus on fostering innovation, analyzing external changes, and building sustainable CA. By prioritizing innovation in management practices and service delivery, NPSOs can remain resilient in the face of dynamic market conditions and improve their performance. Continuous adaptation to environmental changes and innovation will enable sports organizations to stay competitive and better meet the needs of their members. Furthermore, the study suggests that policymakers and sports managers should design targeted support programs and training initiatives that enhance innovation and change management within NPSOs. These programs will help organizations build the necessary capabilities to foster creativity, adapt to external shifts, and sustain long-term growth, ultimately improving their performance in a competitive sports environment.

### Authors' Contributions

All authors equally contributed to this study.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

### Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

### Declaration of Interest

The authors report no conflict of interest.

## Funding

According to the authors, this article has no financial support.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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