



Original Research Article

Strategies for Excellence in Higher Education Fitness Centers: Mediating and Moderating Effects in a Structural Equation Model from Shanxi Province, China

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ABSTRACT

In this paper, organizational performance is used as a mediator variable, and technology and external environment are used as moderating variables to analyze the relationship between organizational management and fitness center excellence. Structural equation modeling was constructed and empirical research was conducted based on questionnaires. Using SPSS 25.0 and AMOS 26.0, the research hypotheses were tested. The study shows that, organizational management positively influenced organizational performance and organizational excellence. Organizational performance was also found to directly influence organizational excellence. Notably, the external environment and technology were identified as significant moderating variables, impacting organizational excellence with direct influences, respectively, both significant at their levels.

Introduction

Physical contests and recreational games have long been integral to human society, pushing the human body to its limits for improved athletic performance. Ancient Olympic Games are an early example. Today, sports and games are a lucrative industry, while leisure activities serve as socializing opportunities (Encyclopaedia Britannica., n.d.). Sports and recreation are central to holistic human well-being. This includes physical, mental, social, and intellectual health. The benefits that come from sports and recreation, aside from personal benefits, also have an important effect on the economic and social growth of the country at all levels, affecting the attainment of internationally accepted Giving importance to sports and recreation for human resource development results in citizens who are physically fit, mentally strong, attitude flexible, which is the backbone of the country's economic and social progress.

Many industries have adapted to the online world, such as reimagining art through digitization. At the sports level, wearable technology allows users to access information about their performance. Meanwhile, the sports fan experience can be improved through technology, both in the stadium and on screens at home. Even in the past, under the threat of the COVID-19 epidemic, this causes many people to stay in their homes for long periods of time (Statista, n.d.). Not only does this stop them from participating in their favorite pastime, it also stops them from participating in their favorite pastime. But it also prevents people from going out to live their lives, especially exercising, playing sports, or engaging in recreational activities. However, it seems that the development of online media, such as apps, has been well received by consumers. Exercise, games, or creating hobbies can be done at home, with many people even discovering new passions and hobbies during this crisis as well. Many Chinese view sport as a leisure activity with added health and recreational benefits, in part as a result of successful economic reforms that have led to the emergence of a growing middle class. So the twenty-first century, the expansion of sporting opportunities for the average Chinese citizen. The government sports sector will open up to further innovation and development projects that appeal to a wide variety of individual preferences (Haugen, 2016).

The scope of sports and entertainment is very broad, such as competitive sports, basketball, football, performing arts, cultural activities, etc. all fall into this category. Informal, non-competitive activities that are conducted for relaxation, entertainment and recreation are often called leisure activities. For example: hiking, camping, skating, skiing, rock climbing, boating, etc. in outdoor sports; reading, painting, puzzles, indoor badminton, indoor table tennis, bowling, etc. in indoor activities; movies, dramas, literature, etc. in cultural activities Music and dance etc (Statista, n.d.). Recreational activity participation has been linked to better physical, mental, and social wellbeing. Sports and leisure activities encourage the development of social skills including cooperation and teamwork. According to the United States Environmental Protection Agency (n.d.), the social advantages of recreational activities have also been connected to improved community health and decreased crime.

Recreation involves activities chosen for relaxation and enjoyment during free time, such as walking, swimming, or reading. Leisure is the time away from daily obligations, where individuals often engage in recreational or sporting activities. Sport is an organized physical activity with defined rules and competitive elements. It requires physical exertion, skill, and is governed by formal organizations. Active recreation primarily requires physical effort and is undertaken for relaxation, health, and enjoyment (Khasnabis et al., 2010). Essentially, recreation is pursued during leisure time for pleasure, addressing a fundamental human need for relaxation and fun.

Research Questions

1. How does organizational management relate to the excellence of physical fitness center in higher education institutes in Shanxi Province?
2. What role does organizational performance play as a mediator between organizational management and the excellence of physical fitness center?
3. How do the technological and external environmental moderating the relationship between organizational management, organizational performance, and the excellence of physical fitness center?
4. What guidelines or recommendations can be proposed to enhance the excellence of physical fitness center in Shanxi Province, based on the study's findings?

Research Objectives

1. To analyze the relationship between organizational management and the excellence of physical fitness center in higher education institutes in Shanxi Province.
2. To explore the role of organizational performance as a mediator in the relationship between organizational management and the excellence of physical fitness center.
3. To test and analyze the role of technological and external environmental moderating on the relationship between organizational management and the excellence of physical fitness center.
4. To develop strategies and recommendations to enhance the excellence of physical fitness center within the context of Shanxi Province.

Literature Review

This research has explored relevant literature and theories related to "Strategies for Excellence in Higher Education Fitness Centers: Mediating and Moderating Effects in a Structural Equation Model from Shanxi Province, China". A comprehensive review of pertinent literature and theoretical frameworks enhances the foundation of research. The theory and concept pertain to the systematic and meaningful examination and evaluation of the interconnections among different variables within research.

OB1, Physical activity, including through sport, is recognized as a powerful tool not only for improving physical health but also for its positive impact on mental health, community development, and societal wellbeing. Participating in sports can improve one's immunity and reduce the risk of non-communicable diseases, while also enhancing social cohesion. Sports play a vital role in public health. Therefore, it can bring benefits to people's physical health. When people's resistance is increased, they will reduce diseases and invisibly reduce medical costs in the long run. Engaging communities in sport is a sustainable strategy (Ding et al., 2016). Sports serve as community catalysts, fostering a sense of belonging, community pride, and unity. Collective participation in sports events can not only improve individual health but also fortify community bonds and contribute to social capital. Sports participation has emerged as a crucial medium to enhance mental health during stressful times. Especially in the context of global challenges like pandemics, sports can act as a coping mechanism, helping individuals deal with stress, anxiety, and depressive symptoms (Smith et al., 2020). It also encourages

community engagement, promotes life skills, and builds social connections, making it a holistic approach to overall health and well-being. Sport serves as an effective medium for individuals to adopt a lifestyle with regular physical activity.

Promoting participation in sports or engaging in recreational activities has been shown to enhance individuals' overall well-being. Based on extensive research undertaken in the field, it has been determined that providing assistance for sporting activities yields beneficial outcomes for various vital anatomical components, including the reduction of anxiety, depression, and the risk of chronic disease (Piercy et al., 2018). Sporting activities, as a subset of physical activities, enhance cardiovascular fitness, muscle strength, body composition, and flexibility. This comprehensive physical improvement serves as a foundation for promoting health and preventing chronic diseases. Engaging in regular sport and physical activity leads to substantial reductions in the risk of chronic diseases and decreases mortality risk such as cardiovascular disease, diabetes, and certain cancers, reinforcing the idea that 'some activity is better than none'. Incorporating sports into daily routines, especially for children and adolescents, has the potential to establish lifelong habits of physical activity. Such habits combat obesity, improve cardiovascular health, and set the foundation for a holistic well-being approach from an early life. Beyond the immediate health benefits of physical activity through sports, functional ability, and quality of life as people age, encouraging sports participation throughout the lifespan can play a pivotal role in combating age-associated health declines (Khan et al., 2012).

In sum, promoting physical activity is vital for public health and individual well-being. Regular exercise not only leads to weight loss but also reduces the risk of chronic diseases such as diabetes and heart disease, while also enhancing mental health and cognitive function. Despite these benefits, sedentary lifestyles are prevalent, underscoring the importance of campaigns, programs, and initiatives to encourage people of all ages to be more active. Effective promotion considers factors like accessibility, cultural relevance, and motivation, aiming to create a society where active living is the norm.

OB2, Planning, organizing, leading, and controlling the work of its members and all of its resources so that the organization can achieve its objectives effectively and efficiently constitutes management. This is achieved through the management, coordination, direction, and oversight of organizational resources. Organizational management is the process of working with people and resources. It involves coordinating human, financial, and material resources and planning, organizing, leading, and controlling an organization's resources, including human, financial, and physical resources. Organization management is the art and science of overseeing both tasks and people in business settings (Jones & George, 2015). It involves the conceptualization and upkeep of a setting wherein individuals collaborate in groups, harness human and material resources. Organization management is the dynamic process of leading and directing all or part of an organization, balancing effectiveness with efficiency.

The evolution of the concepts of management and organization throughout history is evident, as they might exhibit variations based on diverse models, cultures, and communities. The management isn't merely about directing tasks but is essentially the process of achieving goals by effectively organizing and coordinating individuals. This idea has firmly rooted itself as a cornerstone in our contemporary society. Indeed, the success of companies isn't just an outcome of their products or services but also hinges on a myriad of factors including the historical context, intricate social dynamics, and strategic geographical positioning. Given this,

the pivotal role of managers in weaving together these factors and steering organizational success cannot be overstated, a sentiment echoed (Ulandari ,2023).

Now, if we zoom out a bit, we'll observe that organizations and management are foundational pillars of the business landscape. Within this, the niche area of personnel management becomes crucial. It is all about ensuring that individuals within an organization are not just performing tasks but are harmoniously aligned with the firm's objectives, all while being motivated to tap into their full potential. On the other hand, Coppin (2017) shifts the lens to the more structural side of things, defining the concept of organization structure as a meticulously designed framework. It's not just about who reports to whom; it's about fostering an environment that regulates, synchronizes, and most importantly, inspires individuals towards collective success.

Taking it further, the intricate dance of management stretches beyond people. Kaehler & Grundei (2019) delve into how management plays a pivotal role in orchestrating various aspects of an organization, from the market dynamics, production nuances, to even the often-overlooked resource operations. Interestingly, this intricate role of management is not static. Just as societies evolve, the role and definition of management have witnessed transformations, especially in our capitalist era.

Broadly speaking, if we were to dissect management, it is an amalgamation of various activities. It's about envisioning the future (strategic thinking), ensuring today's actions lead to that future (planning), and keeping a check on today's progress (controlling). It's about not just organizing tasks, but also people, and in the process, cultivating an organizational culture that resonates with everyone .Furthermore, it's not just about having resources but efficiently allocating and utilizing them. This sentiment, echoed by Beyes et al. (2022), extends to ensuring a seamless coordination of activities and making decisions that propel the organization forward.

However, the realm of management is not devoid of challenges. It's about understanding the human psyche, facilitating motivation, and building positive relationships. In today's globalized world, understanding organizational behavior becomes paramount, presenting both challenges and opportunities (Picot et al., 2010).

The relationship between organizations and management is one of continuous evolution and deep-seated interdependence. It shows that management plays a central role in melding individual aspirations with organizational goals, aiming for synergistic outcomes. As we navigate the complexities of the modern era, the third millennium as it's often dubbed, the importance of understanding and mastering management concepts becomes paramount, a lifeline for businesses aiming to adapt, grow, and excel, as pointed out (Van Dam & Marcus, 2019).

In sum, the implementation of planning, organizing, leading, and regulating resources within an organization in order to accomplish its objectives in a timely and efficient manner is referred to as organizational management. This encompasses a broad spectrum of activities, from setting strategic objectives and coordinating resources to monitoring performance and ensuring that the organization remains adaptable to changing environments. Organizational management combines leadership skills with an understanding of organizational structure, culture, and behavior, ensuring that all parts of the organization work cohesively towards shared objectives. The ultimate aim is to optimize organizational performance, ensure sustainability, and enhance the overall value delivered to stakeholders.

OB3, Organizational performance is the capacity of an enterprise to operate efficiently, effectively, and align with its designated strategy, thereby fulfilling stakeholder expectations. It's

assessed by a combination of financial results, operational efficiency, customer satisfaction, and the capacity to innovate and change in accordance with market dynamics.

Organizational performance refers to the analysis and assessment of an organization's achievements within its specified timeframe compared to its intended objectives or benchmarks. It provides a comprehensive view of how an organization is progressing and functioning in various areas, including financial viability, market presence, process efficiency, employee competency, and innovation. The intention is to continually improve and adjust strategies to meet or exceed performance targets (Bourne et al., 2000). Organizational performance encompasses the achievement of objectives that an organization sets for itself in alignment with its strategic goals. Organizational performance encompasses the capacity of businesses to construct, integrate, and reconfigure internal and external competencies in response to environments that are undergoing rapid change (Eisenhardt & Martin, 2000).

Organizational performance is the tangible and intangible outcomes resulting from the activities and policies an organization implements to fulfill its mandate. Effective performance management systems provide a structured approach to aligning resources, systems, and employees to strategic objectives and priorities. Organizational performance is a multidimensional construct that includes not only the financial and operational results of an organization but also the speed and agility with which it responds to market changes and external threats. A high-performing organization is not just efficient; it also demonstrates a sense of urgency in adapting to new circumstances and seizing new opportunities. The overall performance of an organization can be defined as the cumulative outcomes of its various work procedures and activities. It involves assessing various metrics that reflect the organization's ability to achieve its short-term and long-term objectives, including profitability, stakeholder satisfaction, and market share growth, among other indicators (Richard et al., 2009).

Organizational performance is a complex concept that is difficult to define due to its polysemantic nature. Different authors have provided various definitions and perspectives on organizational performance. Some authors emphasize the achievement of economic and financial balance and customer satisfaction as the goals of organizational performance. Since organizational performance is a crucial concept in management research, there are various definitions and measurements proposed in the literature. Some studies suggest a multidimensional conceptualization of organizational performance, considering both internal and external perspectives as well as short-term and long-term outcomes. It also includes organizational performance in various dimensions, such as accounting results, financial performance, and non-financial performance. Organizational performance therefore depends on organizational agility, which includes factors such as human resource agility, information technology agility, and innovation agility in enhancing organizational performance (Alhadid, 2016).

It is known that the management of organizational performance is crucial for the overall performance of the organization and its competitive environment. Thus, to build and sustain a high-performance organization, leaders need to manage challenges such as increased competition, globalization, and technological changes, and most importantly, the evaluation and measurement of organizational performance have developed, but they don't focus only on financial indicators, also considering factors such as social, economic, and environmental aspects (Ait Jillali & Belkassah, 2022).

In sum, Organizational performance" is a comprehensive term that encapsulates the degree to which a business or institution achieves its predetermined goals. While often

associated with financial outcomes, it holistically spans across various facets including operational efficiency, human resource effectiveness, customer satisfaction, and adaptability to market changes. It serves as a barometer for gauging the success, health, and competitiveness of an organization in both short-term and long-term perspectives.

Research Methodology

This study is designed as a survey-based research project employing quantitative. Its primary focus is on developing a model that assesses organizational performance and its mediating role in organizational management. The aim is to enhance understanding of organizational excellence in Shanxi, China. Additionally, the study examines the moderating of technology and the environment on the relationship between organizational management and organizational excellence.

The subjects of this study include staff of sports and fitness centers in colleges and universities in Shanxi Province, China. As of the end of 2022, there are 83 higher education institutions of various types in Shanxi Province. Among them, there are 34 undergraduate colleges and 49 higher vocational colleges.

The research population includes administrative personnel, supervisors, department heads, and business personnel of colleges and universities, especially those related to the management of physical fitness centers. According to the requirements of the structural equation model, the final sample size of this study is 420.

Results

OB1. The subsequent section will include an explanation of the abbreviations and symbols utilized in the data analysis and the evaluation of the sample group's survey responses. Following this, the findings of the data analysis will be presented in the sequence that corresponds to the research objectives. This entails the establishment of the symbols and markings utilized for the causal model.

OB2. The analysis of demographic characteristics includes variables such as Gender, Age, Education, Work Experience, Types of Higher Education Institutions, Current Position, Current Position in Physical Fitness Centers, and Current Department Working. 31- 40 years old category, comprising 143 individuals or 34.05% of the sample. This is followed by the 21- 30 years old group, with 124 individuals making up 29.52%. The 41- 50 years old bracket includes 71 people, representing 16.90% of the sample, while those aged 51- 60 years account for 8.57% with 36 individuals. The youngest age group, under 20 years old, consists of 39 individuals or 9.29%, and the 60 years and older group is the smallest, with 7 individuals making up 1.67% of the sample.

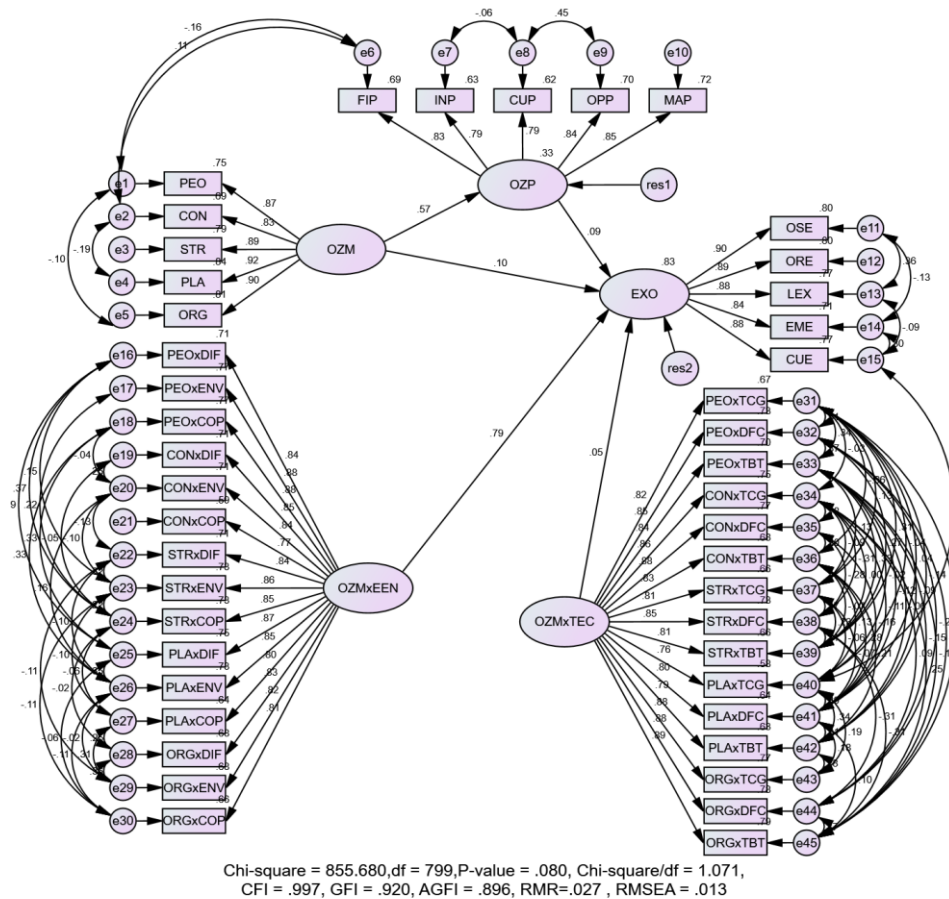


Figure 1 Results of Analysis of the Causal Relationship Model of Organization Management that Affects Organization Performance and Organizational Excellence, with External Environment and Technological is A Controlled Variable (After Adjusting the Model)

OB3. As shown in figure 1, in examining the coefficients of the observed variables of Organization Management, it was found that most pairs of variables had significant correlations at the 0.01 level, ranging from 0.706 to 0.827, with the highest correlation observed between Planning (PLA) and Organizing (ORG).

For the observed variables of Organization Performance, most pairs of variables also showed significant correlations at the 0.01 level, in the range of 0.603 to 0.816, with the strongest relationship being between Customer Performance (CUP) and Operational Performance (OPP).

When considering the coefficients for the observed variables of Excellence in Organizational Contexts, again most pairs of variables showed significant correlations at the 0.01 level, ranging from 0.729 to 0.868, with the highest correlation found between Organizational Structure Excellence (OSE) and Leadership Excellence (LEX).

There were significant correlations between most pairs of variables in the interaction between Organization Management and External Environment (OZMxTEEN). These correlations were found at the 0.01 level, ranging from 0.779 to 0.897. The strongest correlation was found between the interactions of Controlling and Difficult to Forecast (CONxDIF) and Controlling and Connecting Public (CONxCOP).

Finally, considering the coefficients for the observed variables in the joint interaction between Organization Management and Technological factors (OZMxTEC), most pairs of

variables were found to have significant correlations at the 0.01 level, ranging from 0.748 to 0.897, with the highest correlation occurring between the interaction of Controlling and TCGficult to Forecast (CONxDFC) and Planning and TCGficult to Forecast (PLAxDFC).

Conclusion

The study consists of 420 sampling, with 66.19% males and 33.81% females. Many respondents are aged 31- 40 years, with 143 individuals making up 34.05% of the sample. The 21- 30 years old group has 124 individuals, while the 41- 50 years old bracket has 71 individuals, representing 16.90%. The youngest age group is under 20 years old, with 39 individuals, or 9.29%. The smallest age group is the 60-year-olds, with 7 individuals, or 1.67%. The majority of respondents hold a Master's degree, followed by a Bachelor's degree, a Junior degree, and a Doctoral degree or higher. Employees make up 61.19% of the sample, followed by Lecturers, Assistant Professors, Associate Professors, and Professors. Operational staff make up 30.71%, followed by Section Heads, Department heads, Associate Directors, Division heads, and Directors. Executives are the least represented cohort, with 12 individuals, or 2.86%, making up 2.86% of the total. The study also reveals that many respondents are employees, with 257 individuals accounting for 61.19%. Lecturers make up 28.81%, while Assistant Professors make up 5.00%. Many respondents are operational staff, with 129 individuals accounting for 30.71%.

The study reveals that many respondents were operational staff, accounting for 30.71% of the total sample. Section heads made up 22.86%, followed by department heads with 68 individuals, and associate directors with 10.00%. Division heads and directors followed closely with 39 and 34 individuals, respectively. Executives were the least represented, with 12 individuals making up 2.86%. The Operation Division had the most respondents, accounting for 28.81%. Other Executive Office had 88 individuals, accounting for 20.95%. Administrative departments had 82 individuals, accounting for 19.52%. Building, Premises, and Supplies Department had 59 individuals, accounting for 14.05%. Financial and Accounting Plans and Planning and Information Departments had 42 and 34 individuals, accounting for 10.00% and 8.10%, respectively. Member Relations Plan and Logistics Departments had 26 and 15 individuals, respectively. The Service Division had 12 individuals, accounting for 2.86% of the population. Higher vocational colleges represented 59.52% of the sample, while undergraduate universities represented 40.48%.

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