

DESIGNING A PRODUCTIVITY MANAGEMENT MODEL FOR SPORTS FACILITIES IN IRAQ WITH AN EMPHASIS ON SUSTAINABLE DEVELOPMENT

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Abstract

The main aim of this research is to design a productivity management model for sports facilities in Iraq with an emphasis on sustainable development. This research utilizes qualitative approaches to construct a conceptual model using the Grounded Theory method proposed by Strauss and Corbin. Participants in this research include university professors and faculty members in physical education and sports sciences, experienced managers and consultants from the Iraqi Ministry of Sports, professional athletes, coaches, users of facilities and spaces, sports marketers, and managers of sports facilities and spaces. A snowball sampling method was used until theoretical saturation was achieved (15 interviews). The research findings outline a paradigmatic model consisting of influencing factors on the productivity management of sports facilities (4 axes), contextual factors (4 axes), core categories (3 axes), intervening factors (4 axes), strategies (5 axes), and outcomes (5 axes). It is suggested to create a clear picture of productivity management in sports facilities through management, specifying tasks for each person, creating coordination, and sharing existing experiences among individuals.

Keywords: Sports Facilities, Sustainable Development, Productivity Management, Iraq

Introduction

The misuse of natural resources and environmental degradation has become the biggest problem facing the world. Although natural resources are available, they are exposed to destruction due to improper use. Thus, the concept of sustainable development emerged to meet current needs without compromising the ability of future generations to meet their own needs. Global, regional, and local attention to environmental issues and sustainable development has pressured economic units to be aware of their responsibilities towards society and the environment. These units are part of a larger socio-environmental and economic system, and their performance impacts society and the surrounding environment (Falleh-Chichan & Alabdullah, 2021). In this context, the lack of environmental awareness in Iraq is due to weak knowledge of international laws and policies

related to the environment and the lack of serious governmental attention to environmental issues (Thabit et al., 2019). Other issues include poverty, hunger, widespread financial crises, unethical and unequal job opportunities and conditions, environmental destruction, loss of biodiversity, CO2 emissions, land, air, and ocean toxicity levels, health diseases, lack of physical activity, nutritional deficiencies, increased alcohol and drug use, lack of access to resources, uncontrolled technological growth, increased government conflicts, corruption and scandals, and wars. The United Nations emphasizes public participation in physical activities as essential for sustainable development in sports facilities (United Nations, 2019).

Sustainable development is defined as meeting the needs of the present without compromising the ability of future generations to meet their needs (Triantafyllidis, 2018). Continuous expansion involves meeting current demands without compromising future generations' ability to fulfill their needs (Algunaibet et al., 2019). Therefore, sustainable development can be introduced as a collaboration between management, organizations, and individuals to use natural resources wisely to serve current and future generations (Triantafyllidis & Davakos, 2019). Continuous expansion provides solutions for sustainable structures, sociology, finance, and the environment to counter problems like element destruction, pollution of vital resources, disease, adverse weather conditions, uncontrolled population growth, inequality, and reduced quality of life for current and future generations. Thus, attention to sustainable development aspects is essential in all matters, especially in the development of sports facilities, which serve a significant number of community members (Rahmani et al., 2019).

Given the rapid growth and advancement of science and technology in the present century, organizations constantly seek to acquire and integrate new ideas and knowledge to outperform competitors and gain the largest market share (Zafari et al., 2021). In the third millennium, sports organizations need various factors and tools to enhance their competitive advantage and achieve predetermined goals (Shamounian et al., 2019). Currently, improving productivity is one of the challenges faced by service-providing organizations (Zardashtian & Reihaninia, 2020). Therefore, promoting a culture of productivity by managers and officials has been emphasized. The approach has been that productivity includes achieving potential benefits through collaboration among human resources, power, creativity, employee expertise, tools and equipment, financial resources, and innovation (Zafari et al., 2021).

Problems in the process of planning, creating, and using improper sports programs and equipment lead to unexpected issues and budget overruns, negatively affecting the future efficiency of sports organizations (Ramazani & Nazarian Madavani, 2014). Currently, the main discussions often revolve around the lack of equipment, particularly financial and material resources, making efficiency a primary solution (Foroughi Pour et al., 2011). Given the shortage of sports facilities in the country, promoting efficient use is imperative (Pedram et al., 2022). Sports facilities, as the most critical hardware aspect of sports and one of the main foundations of the health system in

society, require sustainable development, which is one of the primary duties of sports managers (Nadertahrani et al., 2022).

Standards that elevate sustainable development considering individual and social life and reinforce the individual-social system are committee-based systems at the heart of governmental and non-governmental organizations (Khoddadi et al., 2018). Moreover, benefiting from employees with high emotional intelligence leads to the organization's dominance over other practical fields such as cultural poverty, austerity in cultural places, and marginalization (Salehi & Ghaemi Asl, 2013). Generally, the sustainable sports development model comprises four dimensions: "approach/management," "environmental/health," "social/cultural," and "economic." The sustainable development model in sports facilities includes five components: "health and ergonomics," "safety," "security," "human resources," and "environmental" (Nadertahrani et al., 2022). Hence, attention to the concept of productivity management in Iraq's sports facilities with an emphasis on sustainable development is increasingly important.

Utilizing qualitative research concepts has provided an overall framework for interaction with the variables under study in the research. However, introducing this approach to productivity management in Iraq's sports facilities with an emphasis on sustainable development brings a new perspective. Most provinces in Iraq face issues due to a lack of attention to productivity in sports facilities, resulting in environmental, comfort, and welfare problems for nearby residents. Therefore, a clear path of management mechanisms, cultural promotion, human resource training, and clarification of individual tasks is needed to address existing challenges. This research aims to design a productivity management model for Iraq's sports facilities with an emphasis on sustainable development, demonstrating the causal conditions, contextual conditions, intervening conditions, strategies, and outcomes of establishing productivity in Iraq's sports facilities.

Methodology

Given the nature of the topic and research objectives, this study is qualitative and based on the Grounded Theory methodology. Participants included university faculty members from the physical education and sports sciences departments, experienced managers and consultants from the Iraqi Ministry of Sports, professional athletes, coaches, users of facilities and spaces, sports marketers, and managers of sports facilities and spaces. These participants were selected for their knowledge and information in this field and their ability to provide accurate information representing the community. Snowball sampling was used, selecting individuals directly related to the research topic. Participants' work experience, willingness to participate in interviews, and ability to articulate their views were the criteria for selection. Ethical principles were observed by explaining the research objectives and necessity to participants before interviews began. All participants voluntarily participated in the research after becoming familiar with the topic. Before each interview, permission was obtained to record the interviews fully, and if participants did not consent to recording, interviews were written down in full. Out of 15 interviews, 13 were fully recorded with consent, and 2 were written with consent. Participants were allowed to withdraw

from interviews at any time, but no participants withdrew during the interviews. All interviews were semi-structured and continued until theoretical saturation was achieved. After each interview, the transcripts were typed, and open, axial, and selective coding was performed. According to Strauss and Corbin's (1998) theory, the central phenomenon, codes, and extracted categories were placed within strategies, and selective coding established relationships between these factors. The four criteria for qualitative research (credibility, transferability, confirmability, and reliability) were assessed and confirmed (Guba & Lincoln, 1994). Credibility was ensured by using available sources, sending interview transcripts and extracted codes to some participants for feedback. Transferability was ensured through documentation for other researchers, demographic reports, sample experiences, and research environment reports. Reliability was assessed using inter-coder agreement, reported at 86% agreement.

$$\text{Reliability Percentage} = \left(\frac{2 \times \text{Number of Agreements}}{\text{Total Number of Codes}} \right) \times 100$$

Table 1. Results of Reliability Check

Interview No.	Total Codes	Agreements	Disagreements	Reliability (%)
1	28	12	4	86.0
2	23	11	1	96.0
3	28	11	6	78.0
Total	79	34	11	86.0

Confirmability was ensured by consulting with several sports management professors not involved in the interviews and incorporating their feedback.

Table 2. Open Codes and Axial Coding

Main Phenomenon	Selective Code	Category (Components)	Initial Open Code
Productivity management in Iraq's sports facilities with an emphasis on sustainable development		Specialized and knowledgeable human resources	Familiarity of service members with organizational missions
			Increasing staff knowledge related to their field
			Sharing service experiences among staff
			Developing specific work and performance regulations for each section with executive staff
			Involving staff in decision-making and problem-solving meetings

	Influencing factors on productivity management	Providing distinct services to customers	Providing specialized services in different sports disciplines
			Offering measures to reduce athlete costs
			Providing various sports, educational, recreational, and physiotherapy services
			Preparing diagrams and charts for using different sections of sports facilities
			Improving service delivery image and perceived quality for athletes and customers
		Responding to customer needs	Identifying specialized customer needs
			Offering comprehensive measures to meet needs
			Properly and comprehensively responding to customer needs
			Reviewing and addressing customer needs
		Creating a positive image of sports facilities	Increasing customer recall value
	Enhancing the reputation of sports facilities		
	Honesty and integrity towards customers		
	Emotional attachment between sports facilities and customers		
	Contextual factors in	Proper planning	Providing appropriate structures for tasks
			Offering strategic improvement plans for structures and human resources
Purposeful planning for customer satisfaction			

	productivity management		Innovation and knowledge management in service delivery
			Continuous monitoring and inspection of executive activities
	Employee satisfaction		Clarifying the importance and value of staff in sports facilities
			Providing job prerequisites by managers and officials of sports facilities
			Addressing staff needs and striving to meet them
			Offering incentives for good performance
	Sustainable construction and equipment		Organizing the use of recycled materials
			Recognizing and avoiding toxic and dangerous materials
			Designing quality building connections and components
			Using standard prefabricated materials
	Proper management principles		Strategic management and monitoring of competitors at the local level
			Assigning responsible individuals for various functional areas
			Balancing service delivery during peak hours between men and women
			Continuous presence of sports facility managers during peak hours
			Green equipment

	Core category		Smart tools to prevent thermal and cooling losses
			Solar, wind, and geothermal energy
			Green energy sources and renewable fuels
		Supervisors and managers of sports facilities	Motivation and interest in work among supervisors and managers
			Adequate salaries for supervisors and managers
			Job satisfaction among supervisors and managers
			Utilizing experienced supervisors and managers in facility administration
			Innovations from supervisors and managers in administration
			Belief in productivity culture and adherence to it among supervisors and managers
			Adhering to ethical principles and appropriate behavior from supervisors and managers
		Organizing services	Suitable physical conditions (lighting, ventilation, flooring, etc.) and compatibility of sports facilities with user needs
			Ability to serve multiple sports disciplines
			Providing appropriate amenities (buffet, parking, etc.)
			Separate sports facilities for different disciplines

	Intervening factors in productivity management	Managerial and equipment obstacles	High cost of purchasing up-to-date sports equipment
			Problems with purchasing sports equipment from abroad
			Lack of quality and safety in current sports equipment
			Poor service delivery in most sports facilities
			Non-specialized and unqualified management in facilities
			Imbalance between sports tariffs and service delivery
		Investment and construction obstacles	Lack of coordination in construction, maintenance, and preservation among effective institutions
			High land and construction costs for the private sector
			High investment levels and lack of justification
			High costs of repairs, inspections, and maintenance in facilities
		Cognitive obstacles	Lack of familiarity with knowledge-based fields
			Lack of foresight for long-term infrastructure exploitation and profit
			Ignorance and non-implementation of environmental standards and green management
			Lack of media-educational programs related to environmental preservation

		Legal and incentive obstacles	Lack of private sector utilization of government facilities
			Absence of service delivery laws and regulations for customers of sports facilities
			Lack of incentives for investors, such as tax exemptions
			Insecurity in the investment sector
	Strategies in productivity management	Developing sports equipment and infrastructure	Possession of new and high-quality equipment
			Multiple halls and diverse physical fitness equipment
			Standardizing dimensions of sports halls and fields
			Observing safety measures in sports facilities
			Maintaining hygiene and cleanliness at specified intervals
			Playing appropriate music
			Proper lighting and access to natural light
		Green approach in sports facilities construction	Adopting global standards and criteria in sports facilities construction
			Considering regional architecture and climate in facility design and construction
			Considering future development and renovation of facilities based on population growth
			Feasibility, location, and implementing green standards on construction maps
			Observing appropriate adjacencies for sports facilities

		Providing modern services and support	Providing non-attendance sports services
			Creating a customer database for sports facilities
			Using process automation
			Having support and educational activities on social networks
			Designing websites for sports facilities
			Establishing phone and internet communication with customers and tracking their progress
		High communication skills	Neat appearance of staff
			Uniforms for sports facility staff
			Friendly and respectful behavior towards customers
			Resolving customer ambiguities
		Support and backing from authorities	Offering incentive regulations for organized and service-providing sports facilities
			Financial and spiritual assistance from the government and sports authorities for improving and developing service infrastructure
			Continuous oversight and review from related federations in educational, equipment, insurance, and other areas
			Developing service delivery strategies and loyalty through mass media
			Holding conferences and educational courses focusing on service delivery and customer loyalty transformation

	Outcomes of productivity management in sports facilities	Improving long-term customer relations	Effective customer recognition in sports facilities
			Managing customer relationships in sports facilities
			Establishing long-term relationships with sports facility customers
			Ensuring customer loyalty to sports facilities
			Increasing positive image and credibility for sports facilities
		Success and risk reduction	Achieving short-term and long-term success
			Facilitating durability and competing with leading competitors
			Reducing investment risk
			Increasing income by enhancing customer loyalty
			Reducing customer attraction risk
		Improving sports service delivery	Improving the quantity and quality of sports services
			Advancing various sports disciplines
			Increasing interest and inclination towards sports
			Helping identify and elevate sports talents
			Increasing sports per capita
		Environmental preservation	Reducing waste and environmental damage
			Reducing greenhouse gas emissions
			Reducing consumption of non-renewable energy resources
			Promoting and expanding sustainable development culture in sports and non-sports organizations

			Promoting public culture of environmental protection
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Results

The results of the interviews are presented in open, axial, and selective codes in the following table:

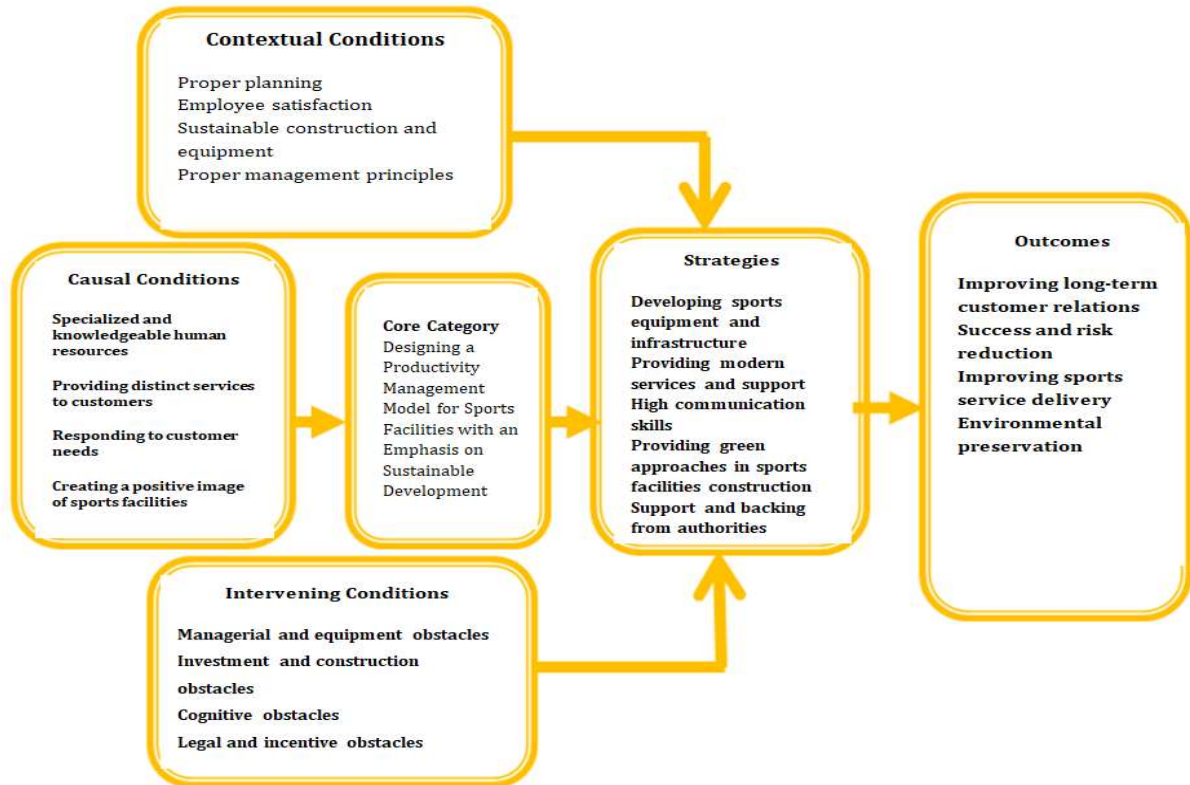
Based on the results of axial coding and common concepts among the identified categories, 24 categories were identified in the design of a productivity management model for sports facilities in Iraq with an emphasis on sustainable development. These categories include green equipment, supervisors and managers of sports facilities, service organization, specialized and knowledgeable human resources, providing distinct services to customers, responding to customer needs, creating a positive image of sports facilities, proper planning, sustainable construction and equipment, employee satisfaction, proper management principles, managerial and equipment obstacles, investment and construction obstacles, cognitive obstacles, legal and incentive obstacles, developing sports equipment and infrastructure, providing green approaches in sports facilities construction, providing modern services and support, high communication skills, support and backing from authorities, sustainable construction and equipment, improving long-term customer relations, success and risk reduction, improving sports service delivery, and environmental preservation. Selective coding involves organizing axial codes based on logic and linking them to other categories, validating the relationships. This is the most abstract level of coding, describing the relationships between identified categories. The output of this stage is theorizing. In this part, axial coding was combined, and the content of each was placed within selective codes. The theoretical coding process is described in Table 3.

Table 3. Selective Coding

Selective Code	Axial Code	Source
Influencing factors on productivity management	Specialized and knowledgeable human resources	p11-p2-P1-p2-p13-p4-p5-p6-p7-p8-P10-P8-P10-P13-P15
Providing distinct services to customers		
Responding to customer needs		
Creating a positive image of sports facilities		
Contextual factors in productivity management	Proper planning	p14-p1-p5-p6-p7-p11-p3-p9-p4-p7-p8-p10 p3-p2-p6

Employee satisfaction		
Sustainable construction and equipment		
Proper management principles		
Core category in productivity management	Green equipment	P2-p3-p7 p4-p6-p8-p9-p10-p12-p3-p p6-p1-p11-p3-p4
Supervisors and managers of sports facilities		
Service organization		
Intervening factors in productivity management	Managerial and equipment obstacles	p8-p10-p11-p3-p9-p7-p13-P2-P15-P12-P5-P9-P1
Investment and construction obstacles		
Cognitive obstacles		
Legal and incentive obstacles		
Strategies in productivity management	Developing sports equipment and infrastructure	p1-p3-p4-p6-p7-p6-p2-p6-p14-P5-P12-P8-P15-P9-P10-P11
Providing modern services and support		
High communication skills		
Providing green approaches in sports facilities construction		
Support and backing from authorities		
Outcomes of productivity management in sports facilities	Improving long-term customer relations	p12-p7 p4-p6-p8-p9-p10-p12-p3-p-p6-p1-p11-p3-p4-P14-p15

Success and risk reduction		
Improving sports service delivery		
Environmental preservation		



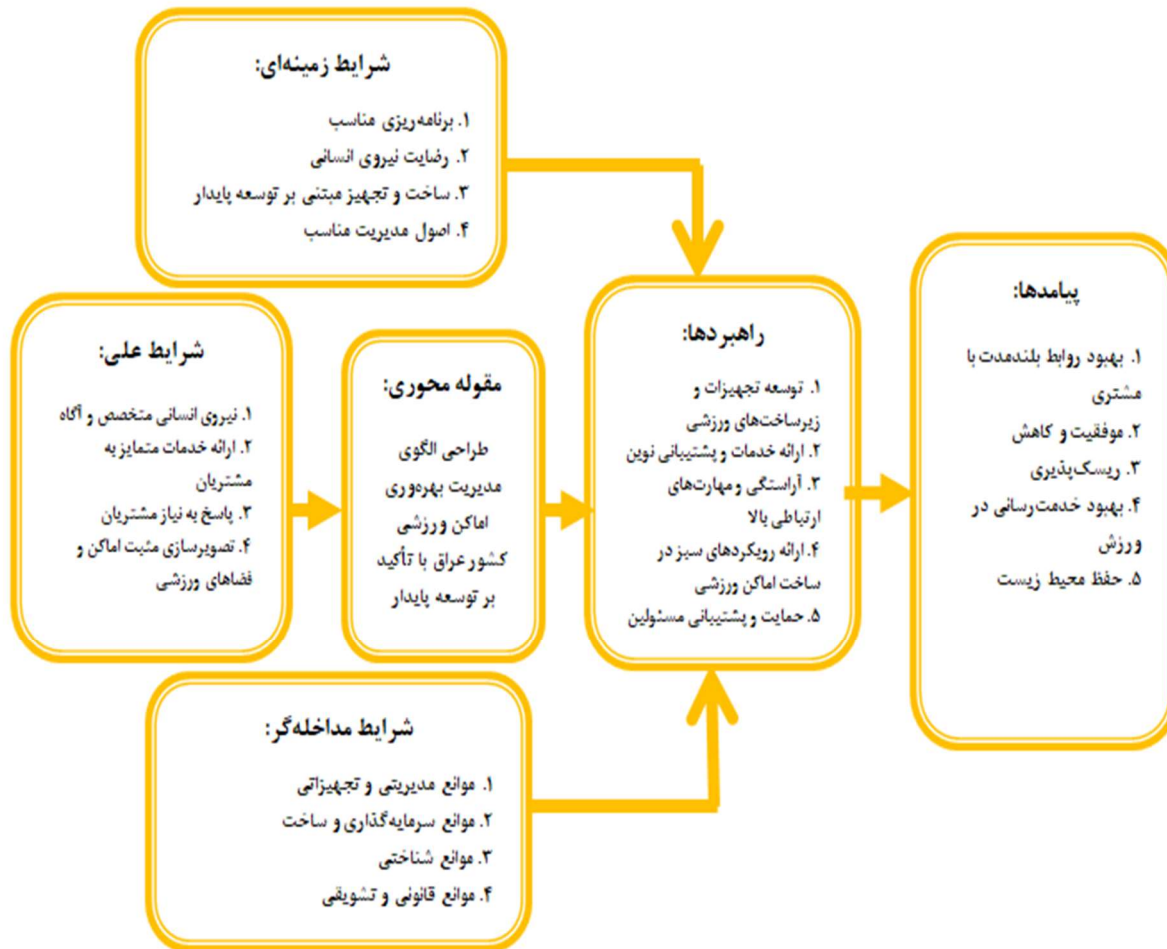


Figure 1. Productivity Management Model for Sports Facilities in Iraq with an Emphasis on Sustainable Development

Discussion and Conclusion

Causal conditions lead to the occurrence or growth of the central phenomenon. These are often pre-existing conditions identified through systematic analysis of the data, highlighting events preceding the central phenomenon. This research identifies four main categories related to influencing factors on productivity management: specialized and knowledgeable human resources, providing distinct services to customers, responding to customer needs, and creating a positive image of sports facilities. The results align with findings by Pedram et al. (2022), Kulatilake et al. (2022), Rahmani et al. (2019), Rahbar (2019), and Azadi (2019). Pedram et al. (2022) identified eight factors influencing sports facility productivity, including ease of user access, user satisfaction, ethical behavior of staff, regular working hours, timely maintenance, leadership styles, continuous evaluation systems, and economic profitability. Additionally, Azadi (2019) identified user-related factors, physical equipment, management and planning, and control factors as influential in increasing productivity. Rahmani et al. (2019) identified economic, advertising, user, managerial, human resources, sports equipment, welfare and ancillary facilities, safety, location, and privatization factors as significant for sustainable development in sports facilities.

Rahbar (2019) found that factors influencing productivity in sports facilities from the perspective of managers include human resources, education, management, supervision, customer orientation, organizational structure, financial status, planning, maintenance, and operation timing. Kulatilake et al. (2022) identified awareness, senior management commitment, and local governance as critical factors influencing productivity.

All sports activities require special facilities and equipment, necessitating specific knowledge and expertise for management and operation. Effective planning and management during the utilization phase of sports facilities can enhance productivity. Human resource productivity indicators can serve as powerful tools for management, helping identify effective organizational costs. Factors such as employee expertise, nature of work, motivation, job satisfaction, and employee importance to managers significantly impact productivity. Better physical working conditions, flexible working hours, optimal technology, and fair compensation improve responsibility, skill, knowledge, and ultimately organizational productivity. Employees who feel committed to their organization and receive support will achieve maximum productivity.

Contextual conditions influence strategies and are identified in this research as four categories: proper planning, employee satisfaction, sustainable construction and equipment, and proper management principles. The results align with findings by Nadertahrani et al. (2022), Masjedi and Rezaei Sofi (2016), Kucukvar et al. (2021), and Millington et al. (2022). Nadertahrani et al. (2022) identified human resources, security, safety, health, ergonomics, and environmental factors as crucial for sustainable development in sports facilities. Masjedi and Rezaei Sofi (2016) identified user-related factors, supervision and control, management and planning, physical facilities, skilled human resources, and budgeting as significant for increasing productivity. Millington et al. (2022) argued that sports utilize forms of sustainable development as contextual parameters for planning and corporate social responsibility. Kucukvar et al. (2021) emphasized planning, design, construction, operations, and management as drivers for stadium and sports facility development. Fundamental planning is essential in sports facilities more than in other sectors; proper planning enhances organizational productivity. Proper planning involves full coordination and logical relationships among responsible institutions involved in physical education and sports. Moreover, factors such as adequate equipment, safety measures, suitable physical conditions (lighting, ventilation, flooring), compatibility with user needs, appropriate hygiene facilities (toilets, showers), easy access, ability to serve multiple sports, and suitable amenities (buffets, parking) are critical for Iraq's sports facilities.

Intervening conditions, also known as mediating categories, influence strategies by modifying causal factors and interacting with responses. Two main categories—organizational factors and individual characteristics—and five open codes—organizational structure, promotion features, structural limitations, individual capabilities, and individual willingness—were identified as intervening conditions. The results align with findings by Hoseini Asgarabadi and Morashian (2022), Saake et al. (2021), and Kadagi (2021). Hoseini Asgarabadi and Morashian (2022) identified economic, managerial, cultural, social, political, organizational, and legal obstacles as significant challenges to developing sports facilities. Saake et al. (2021) emphasized the

importance of maintaining sports infrastructure, while Kadagi (2021) highlighted institutional barriers preventing sustainable recreational-sports development. Effective facility management requires an understanding of past successes and failures, as well as adapting to current needs (Fried & Kastel, 2020).

Implementing strategies effectively and achieving better outcomes involves selecting precise strategies for the specific context. This research identified five main strategies: developing sports equipment and infrastructure, providing modern services and support, high communication skills, providing green approaches in sports facilities construction, and support from authorities. The results align with findings by Meshkil Gosha and Hesami (2022) and Azadi (2019). Meshkil Gosha and Hesami (2022) emphasized considering these factors in planning to reduce project delays and ultimately develop sports. Azadi (2019) highlighted the importance of user-related factors, physical facilities, management and planning, and control for increasing productivity. Hayajneh et al. (2017) found that green management strategies save energy, increase accountability, and promote a culture of nature respect, facilitating sustainable sports development. Thabit (2019) argued that organizations should use sustainable environmental indicators to reduce harmful emissions, costs, increase production, and improve the environment.

Facility management involves overseeing various types of locations, including sports facilities, with specific tasks and responsibilities (Fried & Kastel, 2020). Addressing Iraq's shortage of sports facilities requires identifying specific needs through sports experts and incorporating them into facility structures. Improving human resource productivity involves factors such as ethical behavior, motivation, adequate salaries, educational qualifications, job satisfaction, experienced supervisors, innovations, and adopting global standards and criteria. Attention to regional architecture and climate in facility design and construction is essential for enhancing productivity in sports facilities.

Effective strategies should align with conditions and contexts, leading to desired outcomes. This research identifies four main outcomes related to productivity management: improving long-term customer relations, success and risk reduction, improving sports service delivery, and environmental preservation. The results align with findings by Dehghan Benadaki and Peymanfar (2022), Shahbazi et al. (2019), Atalay (2021), Baroncelli & Ruberti (2022), and Yelamos (2019). Dehghan Benadaki and Peymanfar (2022) emphasized green management's role in sustainable development and environmental protection. Shahbazi et al. (2019) highlighted the financial benefits of observing environmental issues in sports facilities. Atalay (2021) found that reducing environmental impacts from sports aids sustainability. Baroncelli & Ruberti (2022) argued that municipalities and sports clubs should partner in developing technologically advanced, flexible, and integrated sports infrastructure, enhancing citizen well-being. Yelamos (2019) emphasized sports' positive impact on multiple sustainable development goals and improving people's and the planet's well-being.

Based on the findings, the following suggestions are made: Managers should create a clear picture of productivity management in sports facilities, specifying tasks, creating coordination, and sharing existing experiences. Sports facility managers should motivate staff through material and

spiritual incentives, appreciation, and rewards. To address the lack of familiarity with sustainable development concepts, continuous explanatory sessions with managers and staff should be held, focusing on environmental standards and green management.

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