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Presenting a model to analyze the impact of smart management on university sports with the mediating role of Internet of Things technology

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Abstract

The present study aims to present a model to analyze the impact of smart management on university sports with the mediating role of Internet of Things technology. The research method is applicable according to its purpose; and a cross-sectional survey research design was used to collect the required data. The statistical population of this study consisted of all experts and sports experts from Azad Universities, Payam Noor, Amir Kabir University, and Arak University, as well as students who have used this technology in sports. Given the unlimited statistical population, a sample of 384 people was randomly selected. The data collection tools were a researcher-made questionnaire based on the opinions of experts and content analysis. SPSS and SMART PLS software were used to analyze the research findings. The results showed that the use of this technology has a significant effect on improving sports performance, preventing injuries, protecting athletes, as well as increasing accuracy and concentration in refereeing and observing justice in sports competitions; and the consequences of smart management performance, smart management educational factors, smart management organizational factors, smart management individual factors, and smart management technology factors have an effect on university sports in Markazi Province.

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Extended Abstract

Introduction

With the development of networks and the advancement of science and technology, people began to pay attention to the interaction between objects, which evolved and formed the Internet of Things. For the time being, the Internet of Things industry is still in the early stage of development, and it is expected that there is a lot of room for promotion and transformation in terms of technological innovations, standard development, and business forms. The Internet of Things industry is the key to the development of new strategic industries, and based on this environment, the application of the Internet of Things has a very high potential and space (Deng et al, 2019). Nowadays, IoT technology has gradually grown and focused on sensors, software, and other aspects; while supporting equipment for IoT, especially smart circuits, transmission networks, and other basic equipment has developed faster. According to the current situation, IoT has a wide range of applications, commercial, agricultural and service industries, which play a very important role in urban construction, environmental protection, urban security, intelligent transportation, etc. Challenges in various fields, especially in the sports industry, and the use of advanced IoT technology can bring great technological innovations, which can be used to promote the development of sports events. For the time being, IoT technology has made remarkable achievements in the fields of smart cities and smart industry. Some researchers and entrepreneurs have realized the great potential of IoT in the field of sports, such as smart stadiums and smart sportswear. The development of sports events is facing increasing growth, but the development of information technology is still relatively lagging behind; most of the operations of sports events remain only in the traditional implementation mode, the capacity of the organization is limited, and the overall operational efficiency is not high. The resource consumption is very high, and these problems seriously limit the sustainable development of sports events (Sezer et al, 2018). On the background of the development of Internet information technology, the development of sports events relying on information technology has become a trend; the importance of resource integration and optimization of the entire event management process has become inevitable, and the Internet of Things plays an important role in the field of sports events (Jagadeeswari et al, 2018). Therefore, considering the above points, the researcher tries to address the main question: what is the appropriate model to analyze the impact of smart management on university sports with the role of the intermediary of Internet of Things technology?

Theoretical Framework

Smart Management

Recent socio-economic and technological changes in business environments have enabled new ways of working based on flexible work arrangements and the widespread use of information technologies that support employees to potentially work anytime and anywhere. Such approaches are commonly referred to as “smart working” practices (Yu et al, 2022).

Internet of Things Technology

Connected technologies offer new types of services to final users, although the technologies themselves are often used as a ubiquitous set in their environment and (currently) are only visible through touchpoints such as smart devices and wearable technologies. Current projections suggest that within a decade, the Internet of Things will consist of billions of objects and devices or things that have the potential to seamlessly connect people to produce services and interact and share information about themselves and their environment to deliver services. Proponents of the Internet of Things interpret its emergence as “a new industrial revolution that will increase productivity, keep us healthier, make transportation more efficient, reduce energy needs, and mitigate climate change” (Akmandor et al, 2018).

Oliyaee et al, (2024) examined the design of the intelligent leadership model of education managers. The results indicated that 4 organizing themes: pragmatic management, knowledge management, organizational management, and team management were identified and confirmed; and the results showed that the components of the intelligent leadership model of education managers are knowledge management, organizational management, and team management, and pragmatic management.
Yu et al, (2022): Intelligent sports health management refers to the whole process of comprehensive monitoring, analysis, evaluation, provision of health advice and guidance, and intervention in health risk factors for individuals or groups. The emergence of Internet of Things technology has played an obvious role in intelligent sports health management and has realized the integration and optimal allocation of intelligent sports resources. At the same time, in the field of information technology, the emergence of cloud computing as a new computing mode enables people to directly obtain software and computing power through network applications to innovate the intelligent sports health management system and improve intelligent sports. Cloud computing health management system mainly realizes the storage capacity of huge data and distributed computing capacity through processor computing, virtualization technology, distributed storage technology, broadband Internet technology, and automatic management technology. Based on the Internet of Things technology and cloud computing, and taking sports intelligent management as the research carrier, an intelligent sports health management system is designed, which presents a new effort to use advanced information technology to help the sports health intelligent management system.

Research Methodology

The research method is applicable according to its purpose; and a cross-sectional survey research design was used to collect the required data. The statistical population of this study consisted of all sports experts and experts from Azad Universities, Payam Noor University, Amir Kabir University and Arak University, as well as students who have used this technology in sports. Due to the unlimited statistical population, a sample of 384 people was randomly selected. The data collection tools were a researcher-made questionnaire based on the opinions of experts and content analysis.

Research findings

SPSS and SMART PLS software were used to analyze the research findings. The results showed that the use of this technology has a significant effect on improving sports performance, preventing injuries, protecting athletes, as well as increasing accuracy and concentration in refereeing and observing justice in sports competitions, and the consequences of smart management performance, smart management educational factors, smart management organizational factors, smart management individual factors, and smart management technology factors have an effect on university sports in Markazi Province.

Conclusion

The present study aimed to provide a model to analyze the impact of smart management on university sports with the mediating role of Internet of Things technology. These results are consistent with the results of Oliyaee et al, (2024), Yu et al, (2022), Mohammadi & Ghaedi (2020), Wu et al, (2022), Ren et al, (2021), Song (2022), and Li et al, (2021). Ren et al, (2021) showed that this process is made of two aspects of process information and operation information, based on the information system of each link of the Internet of Things support, a strategic information management system platform. This can solve the problem of integrated

management of strategic information process, receiving, storing, filtering and tracking information, and controlling the operation of the strategic management system. In the stage of sports information management, combined with the Internet of Things technology, we should do sports artificial intelligence management and information knowledge exploration well. In the development of sports in the context of the Internet of Things, we should combine the needs of sports information management and the state of the Internet of Things technology to realize scientific and standardized management for the highest efficiency of sports goods under the Internet.

According to the research results, the following suggestions were put forward:

1- Assessing the quality of intelligent management of academic sports in universities based on multivariate statistical analysis and regression analysis is an emerging evaluation method expected to be applied in a wider range of educational scenarios.

2- It is suggested that administrators facilitate appropriate procedures for implementing smart management of university sports in the education and competition sectors, and that flexible university structures be used.