

REVIEW ARTICLE

Investigation of football players' attitudes toward sports technology

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Abstract

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The aim of this study was to examine the attitudes of football players toward sports technology. A total of 186 football players, including 137 males (21.68 ± 9.12 years) and 49 females (20.02 ± 3.80 years), voluntarily participated in the study. The descriptive survey method was employed. Data were collected through a personal information form and the "Technological Attitude Scale," which consists of five factors and 18 items in a five-point Likert-type format, designed to assess football players' attitudes toward technology use. According to the results of the analysis, no significant differences were found between male and female players in the sub-dimensions of individual attitude, sectoral attitude, consumer attitude, career attitude, and facility attitude ($p > .05$). Similarly, the analyses conducted to determine the effect of income level on attitudes toward sports technology revealed no statistically significant differences in any of the sub-dimensions ($p > .05$). In conclusion, it can be stated that football players' attitudes toward sports technology did not differ significantly with respect to gender or income level.

Introduction

Football is undoubtedly the most popular sport worldwide (Manning & Levy, 2006). As a result of this popularity, technological advancements in sports have made significant progress in the 21st century (Şimşek & Devocioğlu, 2024). These rapid developments and innovations not only contribute positively to athletes' performance and efficiency but also support the professional growth and competencies of coaches (Şentürk & Özer, 2022). Technological sports products also assist athletes in their daily lives, providing data during rest, nutrition, exercise, and matches, thereby enabling a more systematic and planned approach to personal development (Çar et al., 2022).

Technological advancements in the sports sector have facilitated an increase in innovations in sports technologies. This has created a dynamic transformation process, requiring institutions, organizations, sports teams, coaches, athletes, and fans to adapt rapidly to these changes. Alongside the products and services offered by sports technologies, the sports community itself has been affected by this technological

transformation, leading to the emergence of new structures. With the widespread use of smartphones, the internet, and other mobile devices, it is evident that the number of technological advancements in sports will continue to grow, and integration with other mobile devices will enable the development of even more innovative products and services in the future (Şimşek & Devocioğlu, 2024).

Tessitore et al. (2022) note that the further development of digital technologies necessitates that sports coaches and physical education teachers increasingly integrate technology into their professional activities. Their findings indicate that sports science students are fully aware of this necessity and generally feel comfortable using technology in daily life (85%) and during sports activities (77%). Additionally, sports coaches (83%) and physical education teachers (56%) consider technology to be highly valuable for their professional practice. Bicer et al. (2022) examined coaches' attitudes and usage levels of technology in individual and team sports with regard to athlete education. Their study, conducted with 205 participants, found that Level 3 coaches used technology more

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frequently in training and competitions than their Level 1 and Level 2 colleagues. Moreover, in the sub-dimensions of compliance and subjective norms, female coaches scored higher than male coaches. Biçgin (2014) investigated the attitudes of physical education and sports teachers toward technology use and its role in education. The study concluded that teachers' attitudes toward technology differed significantly according to gender, age, and years of service.

In sports such as football, where performance monitoring and understanding are critically important, it is essential to know how athletes perceive and use technology during exercise and in daily life. Therefore, the aim of this study is to examine male and female football players' attitudes toward sports technology according to gender and income level.

Methods

Participants

A total of 186 amateur football players voluntarily participated in the study, including 137 males (mean age = 21.68 ± 9.12 years) and 49 females (mean age = 20.02 ± 3.80 years), who were actively engaged in football. Prior to participation, the purpose of the study and details of the questionnaire were thoroughly explained to all participants. In addition, participants were provided with an informed consent form containing detailed information about the study, and written consent was obtained. Ethical approval for this study was obtained from the Non-Interventional Clinical Research Ethics Committee of Selçuk University, Faculty of Sport Sciences.

Sports Technology Attitude Scale

The Sports Technology Attitude Scale, developed by Şimşek & Devecioğlu (2024), consists of specific items and sub-dimensions designed to assess attitudes toward sports technology. A five-point Likert-type version of the scale, comprising 18 items across five factors, was employed in this study. In addition to the scale items, demographic questions such as height, body weight, and sports experience were included to collect relevant background information from the participants.

Data Analysis

The data were analyzed using SPSS version 22. The normality of the sample distribution was assessed through skewness and kurtosis analyses. Based on these results, appropriate parametric or non-parametric tests were applied. Descriptive statistics were presented as mean, frequency, and percentage values. In addition, inferential statistical analyses were conducted using suitable parametric or non-parametric tests, as well as chi-square tests. Statistical significance was set at $p < 0.05$.

Results

The comparison of football players' attitudes toward sports technology by gender is presented in Table 1. No statistically significant differences were found between male and female participants in the sub-dimensions of individual attitude, sectoral attitude, consumer attitude, career attitude, and facility attitude ($p > 0.05$).

Table 1
Comparison of football players' attitudes toward technology by gender.

Variables	Gender	n	Rank Mean	Rank Sum	U	p
Individual Attitude	Male	137	96.19	13178.50	2987.500	.246
	Female	49	85.97	4212.50		
Sectoral Attitude	Male	137	92.28	12643.00	3190.000	.599
	Female	49	96.90	4748.00		
Shopping Attitude	Male	137	95.63	13101.50	3064.500	.357
	Female	49	87.54	4289.50		
Career Attitude	Male	137	94.03	12881.50	3284.500	.816
	Female	49	92.03	4509.50		
Facility Attitude	Male	137	97.38	13341.50	2824.500	.091
	Female	49	82.64	4049.50		

Table 2

Comparison of football players' technological attitudes by income level.

Variables	Income Level	Rank Mean	χ^2	p
Individual Attitude	Low	90.83	.749	.688
	Middle	93.64		
	High	103.59		
Sectoral Attitude	Low	94.83	.083	.959
	Middle	93.01		
	High	91.16		
Shopping Attitude	Low	95.93	.384	.825
	Middle	92.93		
	High	87.16		
Career Attitude	Low	91.72	.199	.905
	Middle	93.97		
	High	97.81		
Facility Attitude	Low	90.95	.467	.480
	Middle	92.83		
	High	108.41		

The comparison of football players' attitudes toward sports technology by income level is presented in Table 2. No statistically significant differences were found among participants in the sub-dimensions of individual attitude, sectoral attitude, consumer attitude, career attitude, and facility attitude based on income level ($p > 0.05$).

Discussion

The aim of this study was to examine male and female football players' attitudes toward sports technology according to gender and income level. Within the scope of the study, football players' attitudes in the sub-dimensions of individual, sectoral, consumer, career, and facility attitudes were comparatively evaluated. According to the findings, no significant differences were found between male and female football players in any of these sub-dimensions. Similarly, income level did not lead to statistically significant differences in football players' attitudes toward sports technology, regardless of gender.

In the modern era, considering the level of welfare, technological developments and the speed at which needs are met have caused a proportional increase in human demands. This rising demand accelerates technological progress and contributes to its development. Therefore, humans are both the primary drivers of technological advancement and the most affected entities by these developments (Karaçam & Aydın, 2014).

In this study, no significant differences were observed in football players' attitudes toward sports technology or its sub-dimensions in terms of gender or income level. In contrast, some studies in the literature have reported differing results. For instance, Biçgin (2014) examined physical education teachers' attitudes toward technology in physical education classes. A total of 171 teachers (129 males and 42 females) participated in the study, and the findings indicated significant differences in attitudes toward technology according to gender.

Conversely, studies reporting results consistent with the present findings also exist (Yıldırım et al., 2018; Bayram et al., 2019). Yıldırım et al. (2018) investigated sports faculty students' attitudes toward technology in relation to gender, age, and marital status and reported no significant differences, aligning with the present study. Similarly, Bayram et al. (2019) examined the attitudes of 217 students (143 males and 74 females) from the School of Physical Education and Sports toward technology and found no gender-based differences in their attitudes.

Understanding the technological development of players and their attitudes toward technology in a globally popular sport such as football is valuable not only for the football sector but also for the sports sector as a whole. Today, technology has become an integral part of daily life, and its impact extends beyond sports to everyday activities.

Conclusion

Football, as a highly popular sport played across all segments of society regardless of gender, continues to increase in popularity. According to the results of this study, no significant differences were found in football players' attitudes toward sports technology based on gender or income level. Therefore, it is recommended that future studies examine attitudes toward sports technology among football players and athletes in other sports branches.

Additionally, this study is limited to amateur football players. Future research may focus on elite-level football players to provide further insights.

Authors' Contribution

This study has one author. The author carried out all processes.

Ethical Approval

This study was approved by the local ethics board of the Faculty of Sport Sciences at the Selçuk University (2024/46).

Funding

This research has not received any financial support.

Conflict of Interest

The author hereby declares that there was no conflict of interest in conducting this research.

Data Availability Statement

Data supporting the findings of this study are available from the corresponding author [D.B.] upon reasonable request.

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