



# Bibliometric Analysis of Postgraduate Theses on E-sports in Turkiye

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## Abstract

This study presents a bibliometric analysis of postgraduate theses focused on e-sports in Turkiye. The analysis covers searches conducted with the keywords "E-Sports", "Esports", and "Electronic Sports" on the National Thesis Center of the Council of Higher Education (YÖK). The data collected using the thesis examination form were organized Microsoft Excel. Theses were analyzed using SPSS version 27 to calculate descriptive statistics and identify trends within the data. A total of 108 theses were examined; the majority of which were written in Turkish (88.88%) and at the master's level (89.81%). Most of theses concentrated in disciplines such as sports (51 theses), communication sciences (7 theses), public relations, business administration, and psychology (6 theses each). While most of the theses come from social sciences institutes (34.25%), the most common supervising titles are associate professors (45.37%). Terms such as "E-sports", "esports", and "electronic sports" are commonly used in the theses. Bahçeşehir and Gazi Universities (6 theses each) are the universities with the highest number of theses in this field. An increase in the number of studies on e-sports has been observed since 2008, particularly in 2022 and 2023 (28 theses each). The most frequently used indexes include "Electronic sports", "Sports", and "E-sports". The findings of this study help us understand the general state and future potential of e-sports research in Turkiye. This study can serve as a guide for future research in the field of e-sports for both academics and industry representatives.

**Keywords:** Academic Dissertation, Bibliometrics, Computer Games, Sports, Video Games.

## Özet

### Türkiye'de E-spor Konusunda Yapılan Lisansüstü Tezlerin Bibliyometrik Analizi

Bu çalışma, Türkiye'deki e-spor odaklı lisansüstü tezlerin bibliyometrik analizini sunmaktadır. Analiz, YÖK Ulusal Tez Merkezi'nde "E-Spor", "Espor" ve "Elektronik Spor" anahtar kelimeleriyle yapılan aramaları kapsamaktadır. Tez inceleme formu kullanılarak toplanan veriler Microsoft Excel'de düzenlendi. Tezler, betimleyici istatistikleri hesaplamak ve verilerdeki eğilimleri belirlemek amacıyla SPSS sürüm 27 kullanılarak analiz edildi. Toplam 108 tez incelenmiş; bunların çoğunluğu Türkçe (%88,88) ve yüksek lisans (%89,81) düzeyinde yazılmıştır. Tezlerin çoğu spor (51 tez), iletişim bilimleri (7 tez), halkla ilişkiler, işletme ve psikoloji (her biri 6 tez) gibi disiplinlerde yoğunlaşmıştır. Tezlerin çoğu sosyal bilimler enstitülerinden gelirken (%34,25), en sık danışmanlık yapanlar doçent unvanına sahip öğretim üyeleridir (%45,37). Tezlerde "E-spor", "espor" ve "elektronik spor" terimleri yaygın olarak kullanılmıştır. Bahçeşehir ve Gazi Üniversiteleri (6'şar Tez) bu alandaki tezlerin en fazla yapıldığı üniversitelerdir. 2008'den itibaren e-spor üzerine yapılan araştırmaların sayısında 2022 ve 2023 (28'şer Tez) yıllarında artış gözlemlenmiştir. En sık kullanılan indeksler arasında "Elektronik spor", "Spor" ve "E-spor" bulunmaktadır. Bu çalışmanın bulguları, Türkiye'deki e-spor araştırmalarının genel durumu ve gelecekteki potansiyelini anlamamıza yardımcı olmaktadır. Bu çalışma hem akademisyenlere hem de endüstri temsilcilerine e-spor alanında yapılacak olan gelecekteki araştırmalar için bir rehber sağlayabilir.

**Anahtar Kelimeler:** Akademik Tezler, Bibliyometrik, Bilgisayar Oyunları, Spor, Video Oyunları

## INTRODUCTION

In recent years, electronic sports (e-sports) has rapidly evolved from a niche activity into a thriving global industry. Unlike traditional sports, e-sports involves organized, multiplayer video game competitions, particularly among professional players, attracting millions of viewers and generating significant economic impact (1,2). The growing popularity of e-sports, especially among younger audiences, has not only captured the attention of the gaming community but also emerged as a subject of serious academic inquiry across various disciplines, including sports science, psychology, communication studies, and business (3,4)

Turkiye is one of the rapidly growing countries in e-sports. In our country, there are many players, teams, and organizations operating in both professional and amateur levels of e-sports. This rapid growth and interest have also led to an increase in academic research on e-sports in Turkiye. (5-7). However, despite this growth, a comprehensive bibliometric analysis of postgraduate theses focusing on e-sports in Turkiye has yet to be conducted, leaving a gap in understanding the academic landscape in this emerging field.

Bibliometric studies, which involve the quantitative analysis of academic literature, have become increasingly important in mapping the evolution of research within specific fields (8,9). By examining patterns in publication output, citation networks, and research themes, bibliometric analyses provide valuable insights into the development of scholarly disciplines (10,11). In the context of e-sports, such an analysis can reveal trends in research focus, identify key contributors, and highlight potential gaps in the literature. These insights are crucial for guiding future research directions and ensuring that emerging fields like e-sports receive the academic attention they deserve.

The primary aim of this study is to conduct a bibliometric analysis of postgraduate theses on e-sports in Turkiye, examining the numerical distribution, methodologies employed, topics explored, and contributions to academic literature. By analyzing these theses, this study seeks to identify current trends, potential gaps, and future directions for research in the field of e-sports. Understanding the academic focus and evolution of e-sports research in Turkiye will provide valuable insights for both academics and industry professionals, guiding future research and fostering the acceptance of e-sports as a legitimate academic discipline.

Additionally, this study will draw comparisons with international trends in e-sports research, offering a broader perspective on the global evolution of the field. The findings are expected to serve as a foundational reference point, encouraging more extensive research and collaboration in e-sports, both within Turkiye and on an international scale. This will ultimately contribute to the recognition of e-sports as a significant and legitimate area of academic study.

## METHOD

### *Study Design*

This study employs a bibliometric analysis to examine postgraduate theses focused on e-sports in Türkiye. Bibliometric analysis is a research method that uses quantitative analysis and statistics to evaluate academic literature. It involves the systematic measurement and analysis of various aspects of publications, such as citation counts, authorship patterns, and publication trends, to gain insights into the development and impact of a specific field or discipline. This study specifically analyzes the content, distribution, and trends within postgraduate theses related to e-sports, offering a comprehensive overview of the academic focus on this emerging field in Türkiye.

The study was conducted by retrieving data from the Higher Education Council's (YÖK) "National Thesis Center" website. The search terms "E-Sports," "Esports," and "Electronic Sport" were used as title keywords in the "Search Terms" section of the website (12). The search included theses that were available up to April 2024. All accessible theses identified during this search were examined from a bibliometric perspective to provide a detailed analysis of the academic landscape of e-sports research in Türkiye.

### *Research Groups*

The inclusion criteria for the study are as follows: the thesis must be available in the Higher Education Council's (YÖK) National Thesis Center, it must be a master's, doctoral, or specialization thesis, and it must be written in Turkish or English. Exclusion criteria include cases where the thesis title contains the aforementioned keywords but the actual study is not related to this topic, theses conducted at universities abroad, and theses inaccessible to the researcher.

### *Data Collection Tools*

The thesis examination form developed by the researchers was used to analyze the theses. The thesis examination form includes the following questions:

1. What is the type of postgraduate thesis?
2. What is the distribution of languages in postgraduate theses?
3. What is the distribution of postgraduate theses according to subject areas?
4. How is the distribution of postgraduate theses according to institutes?
5. What is the distribution of theses according to publication years?
6. Which indices are used in postgraduate theses?
7. What is the distribution of theses according to the universities they were conducted in?
8. What are the titles of the supervising faculty members?
9. Which keywords appear in the titles of the theses?

### *Data Analysis*

The data collected using the thesis examination form were organized and analyzed using Microsoft Excel. A total of 108 theses were analyzed using SPSS version 27 (IBM Corp., Armonk, NY, USA) to calculate descriptive statistics and identify trends within the data. For each thesis, key demographic and bibliometric information—such as thesis title, publication year, author, and university name—was recorded in individual rows of an electronic spreadsheet. The analysis included calculating the frequency (n) and percentage (%) of each variable, providing a detailed statistical overview of the postgraduate theses in the context of e-sports research in Türkiye. Descriptive statistics were used to present the data. Figures were generated using Microsoft Excel and Word Cloud Generator to visually represent the data.

### **Ethical approval and institutional permission**

Since the current research does not involve data collection from participants, it does not require any Ethics Committee approval.

## FINDINGS

**Table 1.** Distribution of Graduate Theses According to Variables

	Variables	n	(%)
<b>Thesis Type</b>	Master's Degree	97	89,81
	Doctoral	11	10,18
<b>Thesis Language</b>	Turkish	96	88,88
	English	12	11,11
<b>Subject Areas</b>	Sport	51	47,22
	Communication Sciences	7	6,48
	Public relations	6	5,55
	Business Administration	6	5,55
	Psychology	6	5,55
	Physiotherapy and Rehabilitation	5	4,62
	Others	27	25
<b>Institutes</b>	Institute of Social Sciences	37	34,25
	Institute of Health Sciences	33	30,55
	Graduate School of Education	30	27,77
	Institute of Education Sciences	3	2,77
	Institute of Natural Sciences	2	1,85
	Winter Sports and Sports Sciences Institute	2	1,85
<b>Thesis Advisor</b>	Assistant Professor	27	25
	Associate Professor	49	45,37
	Professor	32	29,62
<b>Terms</b>	E-sports	67	62,03
	Esports	24	22,22
	Electronic Sports	17	15,74

n: number of participants, %: percentage

A search using the keywords "E-sports", "Esports", and "Electronic Sports" yielded a total of 110 theses. Two theses were excluded from the study as they did not meet the inclusion criteria. Thus, the study focused on a total of 108 theses, comprising 97 master's theses and 11 doctoral theses. It was observed that 96 of the included theses were written in Turkish, while 12 were written in English.

When examining the subject areas of the theses, it was determined that they predominantly focused on sports (51 theses), communication sciences (7 theses), particularly public relations, business, and psychology (6 theses each), and physiotherapy and rehabilitation (5 theses). Additionally, other subject areas included anthropology, nutrition and dietetics, computer engineering sciences, science and technology, geography, labor economics and industrial relations, economics, industrial product design, physiology, journalism, law, interior architecture and decoration, otolaryngology, social services, and management information systems.

Upon reviewing the institutes where the theses were conducted, it was found that 37 theses were from social sciences institutes, 33 from health sciences institutes, 30 from graduate education institutes, 3 from education sciences institutes, and 2 each from science and winter sports and sports sciences institutes.

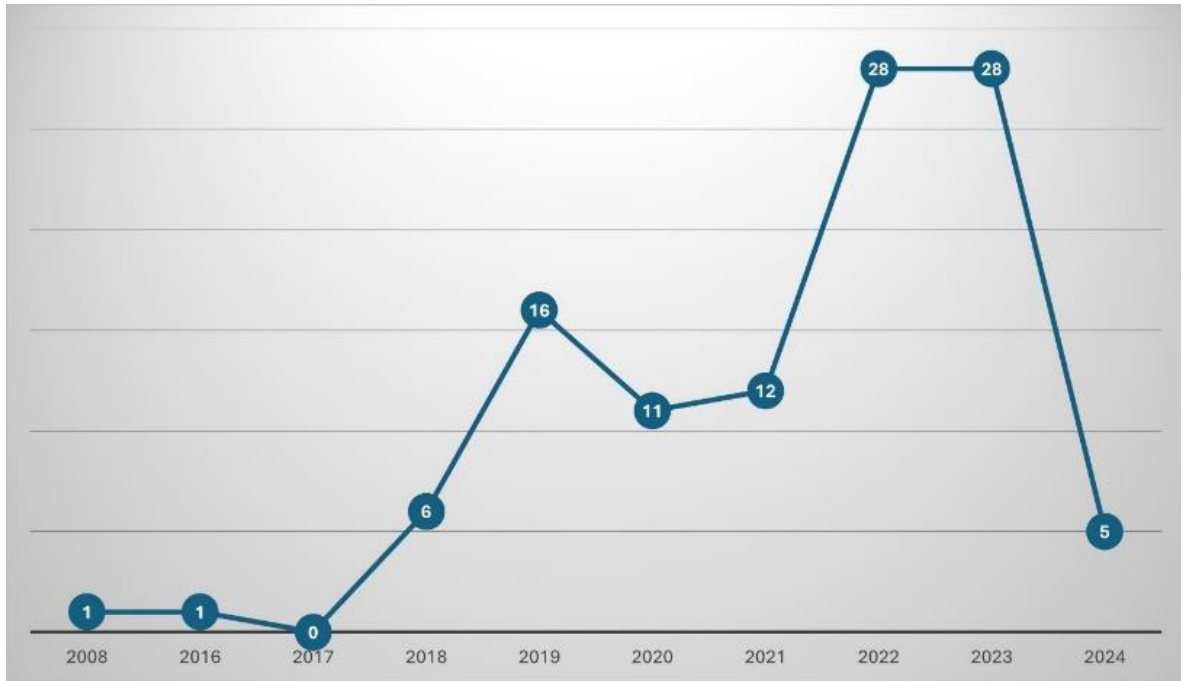
When examining the distribution of academic advisors' titles in the theses, it was found that 27 advisors held the title of assistant professor, 49 held the title of associate professor, and 32 held the title of full professor.

Upon analyzing the expressions used in the titles of the theses, it was observed that the term "e-sports" appeared in 67 theses, "esports" in 24 theses, and "electronic sports" in 17 theses.

**Table 2.** Distribution of Postgraduate Theses by University

University	Number of Thesis
Bahçeşehir University	6
Gazi University	6
İstanbul University	5
Anadolu University	4
İstanbul Bilgi University	4
Atatürk University	3
Bolu Abant İzzet Baysal University	3
Çanakkale Onsekiz Mart University	3
Eskişehir Teknik University	3
İstanbul Gedik University	3
İstanbul Gelişim University	3
The Others	75
Total	108

When examining the distribution of theses by universities, it was observed that the highest number of theses were prepared at Bahçeşehir University and Gazi University (6 theses each). Following them were Istanbul University with 5 theses, and Anadolu University and Istanbul Bilgi University with 4 theses each. Atatürk University, Bolu Abant İzzet Baysal University, Çanakkale Onsekiz Mart University, Eskişehir Technical University, Istanbul Gedik University, and Istanbul Gelişim University each had 3 theses prepared.



**Figure 1.** Distribution of theses titled e-sports by years.

When examining the distribution of theses on e-sports by year, it was determined that the first thesis was conducted in 2008, with the most intensive research activity observed in 2022 and 2023, each with 28 theses (Figure 1).



Figure 2. Indexes Used in Graduate Theses

When examining the indices used in the theses, it was found that the most commonly used index was electronic sports (42 theses). This was followed by sports (28 theses), digital games (14 theses), e-sports (11 theses), motivation (11 theses), computer games (9 theses), sports activities (9 theses), games (8 theses), and sports marketing (5 theses) indices (Figure 2).

## DISCUSSION AND CONCLUSION

E-sports has emerged as a prominent research area in recent years. In this study, a bibliometric analysis of postgraduate theses on e-sports conducted in Türkiye was carried out, and the findings were examined. These findings indicate the general profile and trends of academic research on e-sports in Türkiye.

Firstly, it was observed that the examined postgraduate theses fall into two different types. These theses include master's theses and doctoral theses, with master's theses being particularly more prevalent among the two types. Similarly, studies conducted with similar search models have highlighted the higher prevalence of master's studies compared to doctoral thesis studies (13–15). This suggests significant interest in academic research on e-sports and anticipates more postgraduate studies in this field in the future. However, the absence of specialization theses on e-sports in the medical field is noteworthy. This may indicate less interest among medical researchers in e-sports-related topics or their yet to fully explore opportunities in this area. Particularly, research by sports physicians on e-sports injuries could contribute to the development of this field (16,17).

The examination revealed that the majority of the examined postgraduate theses were written in Turkish. Various reasons may contribute to the prevalence of Turkish theses in the Higher Education Council's (YÖK) National Thesis Center. Firstly, the language of instruction in Turkish higher education institutions is generally Turkish (18). Therefore, students are expected to write their theses in their native language. Additionally, according to the rules set by the YÖK, theses in graduate programs where the language of instruction is Turkish must be written in Turkish. However, a small number of theses were observed to be written in English. With the reasoned opinion of the advisor and relevant board decisions, theses can be written in English provided that a comprehensive Turkish summary is provided (18). Furthermore, many studies in the literature have found similar results supporting our study (13,14). This linguistic diversity can contribute to the dissemination and development of scientific knowledge in the e-sports field, fostering a more

comprehensive understanding. In addition, upon examining the titles of the advisors, it is observed that doctoral instructors, associate professors, and professors advise theses. This demonstrates that e-sports research is taken seriously in the academic community and that researchers from different academic levels are working in this field.

When examining the institutes where the theses were conducted, it is observed that the majority of the theses related to e-sports were conducted in the Social Sciences Institute, indicating pioneering research in this area. However, it is also noted that the Health Sciences and Graduate Education Institutes have been active in research in this field. This indicates that e-sports research is conducted across a wide range of disciplines and that different academic disciplines contribute to this field. When examining the subject areas, it is observed that e-sports is associated not only with sports sciences but also with communication sciences, business, psychology, and other disciplines (19–21). These findings indicate that e-sports is not just a sports activity but also has social and psychological dimensions. This shows that e-sports is a multidisciplinary field and attracts interest from researchers from different disciplines (22).

When examining the distribution of research by publication years, an increasing trend in research related to e-sports over time is observed. It is determined that the first thesis was conducted in 2008, with the most intense research activity occurring in 2022 and 2023 (23). The e-sports industry has gained significant momentum in recent years (24). With major tournaments, professional leagues, and investments from game studios, the popularity of e-sports has increased (24). This indicates that e-sports is attracting increasing academic interest and that research in this field is expected to continue to grow in the future. This popularity may have led academics and researchers to show more interest in this area.

When examining the distribution of theses by universities, it is observed that research related to e-sports is conducted at various universities. This distribution reflects the interest of different universities and academic units in the e-sports field. When looking at the distribution of postgraduate theses according to the universities examined in the study, it is notable that Bahçeşehir and Gazi Universities host the highest number of theses. In our country, Bahçeşehir University has established its own university e-sports team and provides scholarships to athletes (5). Other universities such as Istanbul University, Anadolu University, and Istanbul Bilgi University also have a significant number of theses indicating important research activities in the e-sports field by both academics and these universities. The studies conducted at different universities reflect a wide range of research and academic activities in the e-sports field. This indicates that research on e-sports promotes inter-university collaboration and knowledge sharing.

When examining the most commonly used indices in postgraduate theses, it is observed that these generally revolve around specific indices. These indices include keywords such as "Electronic sports," "Sports," and "E-sports" (25,26). It is seen that the majority of research conducted in the e-sports field focuses around these keywords to determine basic concepts and connections. Additionally, specific terms such as games, computer games, and motivation are commonly used (6). This indicates that researchers tend to associate e-sports with specific subgroups or scales and conduct more specific studies in this regard.

The findings of the study indicate that the use of different combinations of the terms "E-spor," "espor," and "elektronik spor" reflects researchers' and academics' different preferences for defining and focusing on e-sports. Particularly, the more widespread use of the term "e-spor" suggests that this term is accepted among researchers and academics and is more commonly encountered in the literature (27). However, the use of the terms "esports" and "electronic sports" also indicates that these terms are preferred in specific situations and may be used to express a particular emphasis (23,28). For example, while the term "esports" may be a more abbreviated version, the term "elektronik spor" may be used as a more comprehensive or formal expression. This finding underscores the necessity for awareness of terminology in e-sports research. Researchers and academics should be careful to ensure consistency in the terms used in studies conducted in the e-sports field and should consider terminology more carefully to understand what emphasis or meaning each term conveys.

This study had some limitations. It only covered postgraduate theses obtained from the National Thesis Center in Türkiye. Not considering other academic sources or international research may have limited the scope of the study. Additionally, the study only considered searches conducted using the keywords "E-spots"

"Esports" and "Electronic Sports" Not considering research conducted outside of these terms or theses containing different subtopics may have also limited the scope of the study.

Future studies could compare e-sports research in Türkiye with the international literature to examine the state of e-sports research in different countries. This could help us understand how e-sports is approached globally. In addition to postgraduate theses, considering other academic publications such as journal articles, conference papers, and book chapters could provide a more comprehensive analysis of research conducted in the e-sports field.

The findings of this study provide an important source of information about the current state of e-sports research in Türkiye. This information could serve as a guide for future research in e-sports for both academics and industry representatives. Analyzing postgraduate theses related to e-sports could increase awareness among healthcare professionals, educators, and researchers and facilitate the promotion of a multidisciplinary approach. Encouraging collaboration between universities and across different disciplines could help make e-sports research more effective. Furthermore, it could serve as a fundamental reference point for e-sports to gain more academic recognition in Türkiye and encourage researchers to delve deeper into this field.

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