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Bibliometric Analysis of Theses on Occupational Health and Safety in Schools

Okullarda İş Sağlığı ve Güvenliği ile İlgili Yapılan Tezlerin Bibliyometrik Analizi

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Abstract

The main objective of this research is to conduct a bibliometric analysis of domestic theses on Occupational health and safety (OHS) in schools in Turkey and to examine current academic trends, research methodologies and basic themes related to occupational health and safety. In the study, the case study model, which is one of the qualitative research models, was used. The universe of the study; These are theses in the field of OSH in schools, the full text of which can be accessed in the YÖK thesis database. In this context, a total of 42 theses were included in the research. The data were analyzed by descriptive analysis techniques and presented in tables and graphs. The findings show that theses on occupational health and safety in schools have intensified especially since 2018 and are mostly at the master's level. Most of the theses were written in Turkish, and most of the studies were carried out at Istanbul Aydın and Istanbul Gedik Universities. While the most common method in research is quantitative analysis, the most preferred model is the survey model. In terms of subjects, the most interest focused on occupational health and safety in vocational and technical high schools, while studies on ISO 45001 standards and disabled employees were more limited. It is recommended to researchers to increase the number of doctoral theses, conduct research in foreign languages, and use qualitative and mixed methods more.

Keywords: Occupational health and safety, school, educational institution, bibliometric analysis.

Öz

Bu araştırmanın temel amacı, Türkiye'de okullarda iş sağlığı ve güvenliği İş sağlığı ve güvenliği (İSG) konusunda yapılmış yurt içi tezlerin bibliyometrik bir analizini yaparak, mevcut akademik eğilimleri, araştırma metodolojilerini ve iş sağlığı ve güvenliği ile ilgili temel temaları incelemektir. Çalışmada, nitel araştırma modellerinden biri olan durum çalışması modeli kullanılmıştır. Çalışmanın evreni; YÖK Tez veri tabanında tam metnine ulaşılabilen, okullarda iş sağlığı ve güvenliği alanında gerçekleştirilmiş tezlerdir. Bu bağlamda toplamda 42 tez araştırmaya dahil edilmiştir. Veriler betimsel analiz teknikleriyle analiz edilmiş tablo ve grafiklerle sunulmuştur. Bulgular, okullarda iş sağlığı ve güvenliği konusundaki tezlerin özellikle 2018 yılından itibaren yoğunlaştığını ve çoğunlukla yüksek lisans düzeyinde olduğunu göstermektedir. Tezlerin büyük bölümü Türkçe yazılmış olup, en fazla çalışma İstanbul Aydın ve İstanbul Gedik Üniversitelerinde gerçekleştirilmiştir. Araştırmalarda en yaygın yöntem nicel analiz olurken, en çok tercih edilen model tarama modelidir. Konular açısından en fazla ilgi mesleki ve teknik liselerde iş sağlığı ve güvenliği üzerine yoğunlaşırken, ISO 45001 standartları ve engelli çalışanlarla ilgili çalışmalar daha sınırlı kalmıştır. Araştırmacılara doktora tezlerinin artırılması, yabancı dilde araştırmalar yapılması, nitel ve karma yöntemlerin daha fazla kullanılması önerilmektedir.

Anahtar Kelimeler: İş sağlığı ve güvenliği, okul, eğitim kurumu, bibliyometrik analiz.

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Introduction

Education covers a wide range of ages ranging from pre-school to postgraduate education. Children and young people, who will form the workforce of the future, spend a significant part of their lives in schools. Students are exposed to various risks and hazards in educational institutions (Karaltı, 2017). In addition, a large group of staff such as teachers and administrators work in these institutions. However, unhealthy and unsafe working and learning conditions in schools can sometimes lead to accidents, diseases and even deaths (Ergüder and Yertutan, 2005). Accidents and illnesses that occur in schools have widespread negative effects that affect not only individuals but also administrators, teachers, students, and parents. Studies show that 98% of occupational accidents and 100% of occupational diseases are preventable. This underlines the essential role of occupational health and safety practices in schools in creating safe and healthy environments for both learning and working (Berk et al., 2011; Ceylan, 2012).

Occupational Health and Safety (OHS) is a critical discipline aimed at protecting employees' physical, mental, and social well-being, encompassing educational institutions as well. However, scientific data on the adequacy and effectiveness of OHS practices in schools are limited (Çimen & Çimen, 2020). Although there are many studies on OHS in the literature, there is a lack of systematic evaluation of how these studies are distributed in educational institutions, which methodological approaches they adopt and which issues they focus on. Academic theses are a valuable source of data in terms of showing which subjects are studied more in certain periods, which research methods are preferred, and what kind of results the researches have achieved (Günay & Özbilen, 2023). However, the fact that academic theses on OHS on educational institutions are not evaluated in a holistic framework can be considered as a deficiency in this field. The bibliometric analysis method offers the opportunity to reveal the academic trends in this field by evaluating the academic studies from the past to the present within the framework of certain criteria (Küçük, 2007). A bibliometric analysis will show which topics are being studied more in the field of OSH in schools, which themes come to the fore and which topics should be investigated in the future.

The Concept and Importance of Occupational Health and Safety

According to the World Health Organization (WHO) and the International Labour Organization (ILO), Occupational Safety and Health (OSH) is defined as the process of optimizing the mental, physical and social health, safety and well-being of workers in the workplace and ensuring that these conditions are maintained over time. This definition also concerns the issue of reducing harmful effects from the physical work environment, manufactured products and other risk factors that may compromise the physical and mental integrity of workers. Creating a healthy and safe workplace environment is at the heart of this concept (Bingöl, 2003).

Initially, OHS was narrowly understood only as the creation of a safe and healthy environment for employees. However, over time, its scope has expanded and turned into a broader framework that aims to promote a healthy and safe environment both in the workplace and in its immediate surroundings (Topak, 2004). OHS is now defined as a process that aims to humanize working environments and provide the necessary conditions for individuals to lead a safe and secure life (Turan & Taşkın, 2016). In addition, the "Occupational Health and Safety Law", which entered into force in 2012, emphasizes ensuring workplace health and safety and improving existing conditions as the basic elements of the concept (Occupational Health and Safety Law, 2012). OHS is a scientific discipline that aims to eliminate or minimize health hazards and occupational risks arising from workplace environmental conditions. It is also an interdisciplinary field that examines factors influencing the health and safety of employees, temporary workers, subcontractors, visitors, customers, and other individuals impacted by an organization's activities (Karaman et al., 2016).

In contemporary contexts, OHS has gone beyond its technical and medical roots and has become a social policy area approached with multidimensional perspectives and solutions (Kuzucu &Farımaz, 2017). The development and implementation of public policies related to OSH varies depending on the technological, social and economic progress of a country. However, promoting an OHS culture that is compatible with these policies is of great importance for social welfare (Aksoy, et al. 2016). The importance of OHS is enormous for both employees and employers. Employees are the group most affected by occupational accidents and diseases, which leads not only to financial losses, but also to a decrease in production capacity and disruption of business activities. According to the ILO, 153 people have occupational accidents every 15 seconds and one person dies due to such incidents. While 6,300 people are injured in work accidents every day, 2.3 million people die annually as a result of these incidents. In addition, approximately 317 million occupational accidents occur globally each year, and it is estimated that the combined economic burden of these accidents and occupational diseases accounts for 4 percent of global production. These statistics highlight the critical need for the creation of safe working environments and the implementation of effective OH & S measures (Erginel & Toptancı, 2017).

Occupational accidents often cause significant economic hardship, especially for workers whose primary income is derived from wages. In severe cases, injured workers may never fully regain their previous state of health, leading to psychological and emotional difficulties. The most serious consequence of workplace accidents is loss of life; This, in turn, poses deep socio-economic challenges not only for the individual employee, but also for his family. Therefore, occupational safety measures serve as a preventive mechanism that aims not only to protect the physical health of employees but also to maintain the economic and social stability of their families (Kilkis, 2014). OSH represents a critical area that encompasses both theoretical and practical dimensions. Protecting the health and safety of employees is not only an ethical obligation, but also a fundamental human right and a strategic priority for the business sector (Berk, Önal & Güven, 2011). OHS measures are supported by legal regulations and international standards to protect the right to life of employees. These measures are based on the principle that a safe and healthy working environment must be guaranteed. Every individual has the right to work in a safe environment and it is the responsibility of employers to ensure this right (Gerek, 2006). OHS practices aim to protect the physical and psychological well-being of employees by minimizing the risks associated with occupational accidents, diseases and other health problems. These practices also increase the motivation and productivity of employees. Safe and healthy working conditions increase productivity by enabling employees to concentrate more effectively on their tasks. In addition, by reducing occupational accidents and occupational diseases, OHS measures prevent labor losses and disruptions in production, ultimately increasing the competitiveness of enterprises (Çimen & Çimen, 2020; Erdoğan & Genç, 2018).

OHS also imposes important significant on employers. Compliance with workplace OH&S regulations is mandatory, and failure to comply can result in serious legal penalties. Employers are required to assess workplace risks, implement necessary precautions, and establish working environments that adhere to prescribed standards (Kilkis, 2014).In addition, effective OH&S policies contribute to the social reputation of the employer. Employers who prioritize the health and safety of their workforce are perceived by the public as more trustworthy and respected. Strong OH&S performance strengthens an employer's social image and position by demonstrating its commitment to social responsibility (Akpolat, 2014). Therefore, OSH not only ensures the well-being of employees, but also provides employers with a competitive advantage through compliance with legal obligations and improved workplace conditions. Therefore, OHS is both a basic business necessity and a strategic tool necessary to achieve sustainable success (Tekin, 2017). OHS is a multidisciplinary field that brings together various areas of expertise in order to protect the social, mental and physical well-being of employees. It focuses on making workplaces,

which are an integral part of individuals' lives, safer and healthier (Ceylan, 2012).

Occupational Health and Safety in Schools

According to Article 39 of the Regulation on Preschool Education and Primary Education Institutions of the Ministry of National Education, the school principal is responsible for various aspects of school management. These responsibilities include student affairs, education and training processes, personnel management, financial transactions and management of movable property (Bıyıkçı, 2010). It is also responsible for correspondence, education and social activities, boarding, scholarship, transportation, security, nutrition, care, cleaning and other duties assigned by the Ministry and the Provincial and District Directorates of National Education. Among these duties, the execution of OHS services in schools is also an important responsibility (MEB, 2014).

The "Occupational Health and Safety Law No. 6331" is generally valid for all public and private sector workplaces, with certain exceptions. The law aims to ensure the safety of all employees, regardless of their field of activity (Arslan, 2008). However, some groups and activities are excluded. These include the Turkish Armed Forces, general law enforcement agencies and certain functions of the National Intelligence Organization, disaster and emergency response activities, domestic services, and individuals who produce goods or services without employing workers. In addition, dormitory, vocational education, training and security-related activities within the scope of the rehabilitation processes of convicts and detainees in penal institutions are excluded from the provisions of the law (Occupational Health and Safety Law, 2012).

In this legal framework, school principals are required to provide a safe environment for both employees and students by effectively managing OHS (Gümüş, 2016). In carrying out these responsibilities, school administrators must comply with the regulations established by law and take the necessary measures to ensure that the school's activities are in line with legal requirements. This ensures not only compliance, but also the well-being and safety of all individuals in the school environment (Demircioğlu & Centel, 2013). The Occupational Health and Safety Law No. 6331 comprehensively sets out the obligations of employers. Under this law, employers are obliged to prevent risks to the health and safety of employees. This requires the elimination of sources of danger, the organization of training and awareness activities, the provision of necessary equipment and materials, and the continuous improvement of workplace conditions (Kitiş & Bilgi, 2011). Employers must monitor the implementation of OH&S measures in the workplace, remedy any identified deficiencies, and prepare a risk assessment report documenting hazards. They are also responsible for assigning employees based on their fitness for the job in terms of health and safety and ensuring that only employees with adequate training and instruction have access to life-threatening areas. Outsourcing OHS services to experts does not eliminate the responsibilities of employers (Art. 4). In addition, the employer's representatives, acting on behalf of the employer and managing the workplace activities, share the same OH&S obligations with the employer (art. 3). In schools, an assistant principal can be appointed as the employer's representative to supervise OHS-related processes. This representative is able to participate in board meetings and risk assessments on behalf of the employer (Ministry of Education Boarding School Inspections, 2018).

Schools fall under the jurisdiction of Law No. 6331 and this situation imposes certain responsibilities on school principals as employers and teachers as employees or service providers. School administrators are responsible for ensuring the safety of students both within the school buildings and in the areas where school-related activities take place. In addition, they should ensure the safety of students during their transportation to school and protect them from possible dangers, injuries, and risks (Erdoğan & Genç, 2021). Therefore, Law No. 6331 imposes comprehensive responsibilities on employers and their representatives as well as school administrators in the management of occupational health and safety. The correct fulfillment of these obligations is of

great importance in terms of maintaining a safe environment for both employees and students (Gümüş, 2016). The basis of OH&S activities lies in identifying potential hazards that may pose a risk to students, teachers, staff and visitors in the school environment. School administrators and teachers should assess the risks that students may face and address the existing hazards in the school environment (Aksoy, Samanlı & Karagöz, 2016). This risk assessment should take into account all aspects of the school and work environment and ensure that no potential hazards are overlooked (Baykal, Sarı, & Arslan, 2022). Establishing an OSH culture in schools and implementing the necessary safety measures is an important step in protecting students and all other stakeholders. The establishment of this culture will contribute to the creation of a safer future, both individually and collectively (MEB, 2010).

Risk assessment processes

Risk assessment is the process of assessing potential hazards in the workplace and determining whether these risks are at an acceptable level, taking into account the adequacy of existing control measures. Its primary purpose is to protect employees, then to ensure the safety of the workplace and all individuals and organizations in it. Employers are required to conduct or commission a risk assessmentaccording to Article 10 of the Occupational Health and Safety Law No. 6331 (Ceylan & Başhelvacı, 2011).

Within the scope of the Communiqué on Occupational Health and Safety Hazard Classes, workplaces are divided into three hazard classes according to their activities: less dangerous, dangerous and very dangerous. Risk assessments in accordance with this classification should be renewed periodically as specified in Article 12 of the Occupational Health and Safety Risk Assessment Regulation (Official Gazette, 2012). A risk assessment should be carried out every six years for workplaces classified as less hazardous, every four years for workplaces classified as hazardous, and every two years for workplaces classified as very hazardous. In addition to periodic renewals, risk assessments should be updated in response to specific conditions (Official Gazette, 2012). These conditions include the relocation of the workplace or structural changes in the building, changes in the technologies applied, the materials or equipment used, occupational accidents, illnesses or the occurrence of "near misses". Additionally, risk assessments must be revised in cases of legislative changes concerning permissible workplace exposure limits, environmental measurements necessitating re-evaluation, health surveillance findings, or emerging external hazards that may impact the workplace (Arıcı, 2013).

Dangerous situations detected by school principals and risk assessment teams in schools are recorded in the Ministry of National Education Information Systems (MEBBİS) OHS risk assessment module developed by the Ministry of National Education. After data entry into the system is completed, a risk assessment report is created. Each page of the report must be initialed by team members, and the last page must be signed to become an official document. This report is then stored at the respective school or institution. Given the legal significance of the data entered into the system, it is crucial to ensure accuracy and to comprehensively identify all potential risks in the school. Any oversight or negligence in the risk assessment process can lead to significant legal and safety issues down the road. Therefore, meticulous action should be taken throughout the process. As a result of all these, the establishment of a competent risk assessment team and the meticulous implementation of the risk assessment process are critical to ensure the safety of employees and students. A careful and methodical approach is required at every stage, from data entry to final reporting, to create a safe and law-compliant environment (MEB, 2016).

Preparation of contingency plans

According to the Regulation on Emergencies in Workplaces, emergencies; It is defined as natural disasters such as fire, explosion, spread of hazardous chemicals, earthquakes, floods, storms, and situations that may occur in some or all of the workplace. These emergencies require

emergency response, intervention, first aid, or evacuation. An emergency plan includes the processes of identifying potential emergencies, determining measures to prevent or mitigate their effects, assigning support teams, planning response and evacuation strategies, organizing documentation, conducting drills and updating the plan at regular intervals (Official Gazette, 2013a). To respond effectively to emergencies, workplaces, including schools, must set up three separate teams: firefighting, search and rescue and evacuation, and first aid teams. The number of personnel in these teams should be appropriate to the size of the workforce and the hazard classification of the workplace (Bolat, 2015).

At the Third World Conference on Disaster Risk Reduction organized by the United Nations on 18 May 2015, the importance of increasing the resilience of public and private sector investments against disasters was emphasized. Particular attention has been paid to reducing risks to physical infrastructure in critical institutions such as schools and hospitals (UNESCO, 2017). Disaster and emergency management in schools is structured as a process encompassing actions required before, during and after the disaster. The emphasis is on identifying potential hazards before a disaster, reducing or eliminating their effects, and preparing for emergencies through planning and training. During a disaster, the goal is to practice the correct behaviors learned through drills and effectively conduct rescue, first aid, and evacuation operations. In the aftermath of the disaster, the aim is to make timely and effective interventions to minimize losses and restore the normal functioning of the school as soon as possible. The Ministry of National Education has developed the MEBBIS OHS Emergency Data Entry Module to systematically manage emergencies. This system facilitates the assessment of possible school emergencies, the implementation of preventive measures, the formation of emergency response teams, and the documentation of response strategies. All data entered into the module is printed and signed and filed as an official "Contingency Plan". This process provides a legal and organized framework for managing emergencies in schools (Özmen et al., 2015).

Organization of occupational health and safety trainings

School principals are responsible for ensuring that teachers and other school staff participate in OHS trainings. These trainings are mandatory before employees start work, when workplace or job changes occur, when work equipment is changed or when new technologies are introduced. OHS trainings should be updated according to new risks and evolving conditions and should be repeated when necessary or at regular intervals (Official Gazette, 2013b).

Public institutions, including schools, are obliged to provide OHS training to all employees such as servants, teachers and civil servants, regardless of the hazard classification of the institution. These trainings are provided to employees free of charge, and the time spent on training is considered part of their working hours. The main purpose of these trainings is to promote a culture of safety in public institutions. These trainings are carried out as in-service programs under the name of Basic Occupational Health and Safety Training Course for Employees. The content of the training is tailored to the needs of the employees and goes beyond the standard topics specified in the relevant manual. The trainings are given by occupational safety experts or expert trainers, and after the completion of the training, the training is documented by supervisors and occupational safety experts or workplace physicians (Official Gazette, 2014).

Systematic and regular OHS trainings are extremely important for the development of a safety culture in schools. Such trainings programs enhance employees' knowledge and awareness, contributing to a safer environment for both staff and students. This constitutes a vital step in assisting educational institutions in their efforts to establish safe and well-managed learning environments. OHS trainings are designed to raise awareness among teachers, administrators and other school staff. These trainings enable employees to evaluate potential hazards and risks in the school environment from a new perspective and to advocate for taking the necessary measures to

reduce these risks. In addition, staff working in schools and boarding facilities are required to receive special training that is compatible with their job descriptions and responsibilities. Basic training programs include hygiene training for hostel personnel, emergency team training, personal protective equipment training, boiler room igniter training, and risk assessment team training (Özmen et al., 2015).

Trainings on emergencies are organized in schools to prepare students for possible disaster scenarios. These trainings cover emergencies that may turn into natural disasters such as fires, earthquakes, avalanches, floods and storms, and aim to enable students to intervene consciously in such situations. By participating in these programs, students become better equipped and gain the necessary awareness to minimize the negative effects of disasters (Özmen et al., 2015). A mandatory component of student training is the occupational safety training given to vocational high school students before starting their internship. These trainings are designed to increase students' awareness by addressing the potential risks they may encounter in professional environments. The training given by field or department supervisors, workshop or laboratory trainers or occupational safety specialist teachers lasts at least 8 hours. Participants who complete the training are given a certificate of "Student/Apprentice Occupational Health and Safety Training" (MEB, 2015a).

The Ministry of National Education's Occupational Health and Safety Circular No. 2014/16 highlights the importance of organizing seminars, panels and conferences to raise awareness of students and school staff on occupational health and safety. These activities, overseen by school administrators, aim to improve the OHS culture. By introducing children to the concepts of occupational safety at an early age, it is to ensure that they are better prepared to identify the risks they may encounter both at school and later in life. This early awareness encourages safer behaviors and equips students to be part of a more safety-conscious workforce in the future (Official Gazette, 2014).

Article 7 of the Regulation on the Procedures and Principles of Occupational Health and Safety Training of Employees emphasizes the importance of providing targeted training to groups with special policy needs, such as young, old, disabled, pregnant or breastfeeding employees (Official Gazette, 2013b). In this context, school principals are responsible for the planning and implementation of special education programs for employees and students who require special education and guidance. Employees and students who require special policies should be given tasks appropriate to their physical condition. In addition, OHS trainings for these individuals should be customized according to their specific needs and abilities. This training should go beyond theoretical training and include practical exercises, such as emergency evacuation drills, tailored to the specific needs of these people (MEB, 2018).

Activities related to fire safety

A fire is a phenomenon that begins when a heat source ignites a flammable substance and then spreads uncontrollably. In order for a fire to occur, three basic elements must coexist: flammable material, heat and oxygen. Elimination of any of these elements will extinguish the fire. Başdemir and Demirel (2010) define fires as one of the most important threats to human life and property. Although it is not possible to completely prevent fires, their effects can be minimized with appropriate precautions (Başdemir & Demirel, 2010). Fires can be caused by a variety of reasons, such as lack of protective measures, ignorance, negligence, accidents, sabotage, or natural phenomena such as sparks or lightning strikes.

The Disaster and Emergency Training Center (AFADEM) divides fire protection measures into two main categories: structural and organizational (MEGEP, 2014). Structural measures include constructing buildings with non-combustible or fire-resistant materials, providing escape routes protected from fire effects, separate storage of flammable and combustible materials, and

keeping fire extinguishers in working order. Organizational measures include conducting regular fire drills, frequently inspecting electrical installations, keeping fire exits unobstructed, installing emergency lighting systems, and updating evacuation plans. Approaches to fire risk are divided into two groups. The reactive approach refers to the measures taken after the fire occurs, while the proactive approach includes measures that aim to reduce potential risks by anticipating them before they occur. Kuzucu & Farımaz (2017) give examples of proactive fire safety measures such as smoke detectors, heat detectors, fire alarm bells, automatic gas extinguishing systems, fire pumps, gas alarm detectors and fire brigade water supply connections.

To effectively combat building risks, it is essential to take both structural and organizational measures, as well as proactive approaches. These systematic efforts are critical to reducing fire-related losses and ensuring the safety of individuals and property. According to the Regulation on Fire Protection of Buildings and the Fire Prevention and Extinguishing Directive of the Ministry of National Education, educational institutions are required to implement certain measures to minimize fire risks and ensure safety. These measures have been determined to ensure fire safety (Official Gazette, 2007; MEB, 2009). Fire cabinets are mandatory in high-rise buildings, workshops, warehouses, hotels, medical institutions, gathering places and educational facilities with a total indoor area of more than 1,000 square meters, as well as buildings with a closed area of more than 2,000 square meters. These cabinets must be installed on each floor with a maximum distance of 30 meters between them in sections separated by a fire wall. Emergency lighting systems must provide adequate lighting by automatically activating in the event of a power outage. These systems must remain operational for at least 60 minutes after the current lighting is cut off. Emergency guidance should be arranged in such a way as to direct users to the nearest exit in all buildings with multiple exits. Emergency exit doors should be indicated with "EMERGENCY EXIT" or "FIRE EXIT" signs, and there should be no illuminated objects or signs that may cause confusion in escape routes. These signs must remain functional for at least 60 minutes in the event of a power outage.

Studies on chemical risks

Globally, there are an estimated 5 to 7 million different types of chemicals, with an annual production volume of about 400 million tons. Understanding the type, shape, and potential effects of these chemicals is crucial for assessing their impact on human health and selecting appropriate protective measures for their use in business processes (Yavuz & Erdogan, 2001). Key sources of information about chemicals include laws and regulations, information provided by employers, chemical manufacturers' Material Safety Data Sheets (MSDS), labels on chemical packaging, and training programs. It is legally obligatory for all chemicals used in workplaces in Turkey to have Turkish MSDS.

Staff and students in schools may occasionally be exposed to the harmful effects of chemicals, especially those used in laboratories, workshops and cleaning activities. These chemicals pose significant health risks, making it very important for school administrations to provide comprehensive training to staff and students on the safe handling and use of chemicals. Proper storage of chemicals in schools is essential to ensure safety. Chemicals should be stored in secure areas that must remain locked, and labels should not be removed under any circumstances. Mixing cleaning chemicals, even to improve cleaning efficiency, is strictly prohibited due to potentially dangerous reactions. Cleaning staff are required to use personal protective equipment and regularly ventilate work areas during cleaning activities. Since improper storage is one of the main causes of occupational accidents, chemicals should be classified and stored according to their types and properties (Yavuz & Erdoğan, 2001).

Studies on biological risks

Biological risk factors include microorganisms, cell cultures, and human parasites (including

genetically modified ones) that can cause infection, allergy, or poisoning. These risks can be transmitted to humans through the working environment, air, physical contact, shared clothing or equipment, vectors (live hosts carrying infectious agents) and blood (Karaltı, 2017). Biological risks can lead to many infectious diseases. Examples of these are tetanus, hepatitis, AIDS, rubella, rabies, tuberculosis, campylobacter, shigella, candida, anthrax, Q fever and brucellosis.

Congregate living spaces, such as schools and dormitories, are particularly susceptible to hygiene issues and the spread of infections. Students, especially those who lack basic hygiene knowledge, are more vulnerable to infections. Behaviors such as frequently touching different surfaces, close contact with peers in classrooms and playgrounds, and putting hands to the mouth can facilitate the transmission of microorganisms. In order to minimize the risk of infectious diseases, both staff and students should strictly adhere to personal hygiene rules (Kitiş & Bilgi, 2011). School toilets pose a significant risk of the spread of infectious diseases due to inadequate cleaning, inadequate facilities, and poor handwashing habits. Failure to maintain proper hygiene conditions in school toilets increases the likelihood of infections spreading among students and staff. Addressing biological risks in schools requires a comprehensive approach that emphasizes hygiene, education, and preventative measures. By providing regular cleaning, proper hygiene practices, and infection prevention education, schools can create a safer environment for students and staff and minimize the incidence of infectious diseases (Pekcan & Guler, 1993).

Periodic controls and audits

The increasing use of machinery and equipment in the workplaces due to technological developments has contributed to the increase in occupational accidents. In order to reduce such risks, periodic inspections of workplace machinery and equipment have become important. These audits consist of regular inspection, testing and evaluation activities carried out by experts using appropriate methods at regular intervals. Over time and with use, machinery and equipment may deteriorate or deform. Regular periodic maintenance extends the life of these equipment, while inspections and tests ensure the safe operation of the machines (Akpolat, 2014).

Periodic inspections are carried out in schools for all tools, equipment and installations required for operational safety. These include boilers, pressure vessels, lightning rods, grounding and electrical installations, electrical appliances, generators, machinery and scaffolding used in construction work. These inspections are carried out by engineers and teachers who have undergone in-service training organized by the Ministry of Education. The results of these audits are documented and records are filed. In addition, labels or markings indicating that the inspection has been completed should be affixed on the inspected equipment (Official Gazette, 2014). In order to ensure that periodic inspections of school equipment are carried out efficiently and cost-effectively, the Ministry of National Education provides in-service trainings to train Periodic Control Specialists. Personnel with expertise in the roles of electrical and mechanical engineering, technical teachers or technicians can participate in these training programs (MEB, 2019).

Improving physical conditions in schools

Ensuring security in schools is closely related to improving physical conditions. Risks such as unsafe lockers, missing safety nets in stairwells, school gardens where vehicles can enter, roofs used as storage areas and low windows can pose significant dangers to students, teachers, staff and visitors. Many school accidents can be effectively prevented by taking precautions to address these risks. To improve physical safety, schools should secure objects, implement appropriate safety measures on stairs, organize outdoor spaces, install secure window mechanisms, monitor rooftops, and address safety in boiler rooms (MEB, 2015b).

To reduce the risk of accidents, items such as cabinets, panels, boards, plates, frames (with or without glass), stair railings, and other objects that are at risk of tipping over during an earthquake or vibration must be securely fastened. This includes classrooms, hostels,

administrative offices, laboratories, archives, and all other school units. Regular inspection of these items is of great importance in terms of preventing possible accidents (MEB, 2015b). School stairs should be clean, well-maintained, and equipped with safety features. Stair railings should be at least 90 cm high, and the spaces between stairs should be covered with materials such as mesh to prevent falls. Anti-slip tapes should be installed on stair treads to minimize the danger of slipping. Mobile ladders used for cleaning, maintenance and painting also need to be checked regularly every six months. It is essential to use stairs that comply with safety standards. Given that the slipperiness of stairs increases in rainy weather or after cleaning, anti-slip measures such as anti-slip tapes on stair treads are critical to prevent accidents (MEB, 2015b).

Research on OSH practices in schools addresses a variety of risk factors, managerial deficiencies, and regulatory compliance issues. Özakün et al. (2023) examined OHS practices such as fire safety, emergency plans, and hygiene standards in educational institutions; They stated that the lack of knowledge of teachers and administrators led to the inadequacy of the practices. They emphasized the need for effective implementation of legislation and the development of comprehensive training programs in order to disseminate OHS culture. Günay and Özbilen (2023), while emphasizing the importance of OHS practices in creating a safe working environment, stated that lack of financial resources, lack of expert personnel and physical inadequacies are the main problems. They recommend financial support for sustainable OH&S practices, the provision of specialized staff and the reduction of the obligations of school principals. Şener et al. (2023) focused on identifying and preventing risks in the education sector by analyzing OHS practices in schools. They concluded that the evaluation of schools in the "less dangerous" class limited OHS practices.

Baykal et al. (2022) found that current OHS practices in schools are inadequate due to managerial deficiencies, which leads to occupational accidents and occupational diseases. They recommend identifying risk factors in advance and regularly reviewing contingency plans. Gümüş (2016) revealed that risk assessment activities are insufficient in public schools, while more importance is given to these practices in private schools. It has been stated that teachers' ignorance about risk assessment negatively affects OHS practices. Yurdakul (2023) examined the OHS practices in special education practice schools in Ankara and found that risk analyzes were not carried out adequately in these schools and there were deficiencies in emergency plans. Kök Sevdalı (2019) emphasized the lack of OHS measures such as fire detection systems and socket protection locks in schools; He stated that the managers had problems due to the lack of legislative knowledge and technical support. Ustaoğlu (2020) found that the fact that educational institutions are in the "less dangerous" class limits OHS studies, and that the existing measures by using the Fine Kinney Method in risk assessments are insufficient. Tokpınar (2019) examined the adequacy of the studies carried out in schools within the framework of the OHS Law No. 6331; He emphasized the importance of regular risk assessment processes and emergency plans.

Relevant research reveals that the issue of OHS in educational institutions is not adequately addressed both at the academic level and in practice. Current studies have been conducted in specific cases or limited contexts and do not provide a general framework for OSH practices. Risk factors encountered in educational institutions need to be addressed more comprehensively, compliance with legislation should be evaluated and sustainable measures should be developed. In this context, the bibliometric analysis will contribute to the field by identifying academic productivity, basic research themes and deficiencies in the field of OHS. Thus, a scientific basis will be established for the development of more effective and applicable OHS policies in the education sector. The main objective of this research is to conduct a bibliometric analysis of domestic theses on OSH in schools in Turkey and to examine current academic trends, research methodologies and basic themes related to occupational health and safety. The sub-objectives of the research are as follows:

1. What is the distribution of theses on occupational health and safety in schools in Turkey according to the year they were made?
2. What is the distribution of theses on occupational health and safety in schools in Turkey according to the type of thesis?
3. What is the distribution of the publication language of theses on occupational health and safety in schools in Turkey?
4. What is the distribution of theses on occupational health and safety in schools according to universities in Turkey?
5. What is the distribution of theses on occupational health and safety in schools in Turkey according to their basic disciplines?
6. What is the distribution of theses on occupational health and safety in schools in Turkey according to the method?
7. What is the distribution of theses on occupational health and safety in schools in Turkey according to the research model?
8. What is the distribution of theses on occupational health and safety in schools in Turkey for the subjects studied?

Method

It provides details regarding the methodology and procedures employed in the research. It gives information about the method and the process followed in the study. Times New Roman 12 font, single line spacing, the first line indented 1 cm, 6 nk space after paragraphs.

Model of the Research

This study was designed with qualitative research method. Qualitative research is a research method used to obtain information or to develop new perspectives on a situation in which information is not fully known or when it is difficult to evaluate with quantitative measurements (Strauss & Corbin, 2007). In this study, theses in the field of *occupational health and safety in schools* in Turkey were examined. This study employed the case study model, a qualitative research approach. McMillan (2000) defines a case study as a method in which one or more events, environments, programs, social groups, or other interconnected systems are examined in depth. Case study refers to an in-depth process of analysis and identification on a finite system; this definition emphasizes the features that distinguish the case study from other qualitative research designs (Merriam, 2009, p. 40). Yin (2009), on the other hand, defined a case study as 'a method that investigates a current event or phenomenon within its real-life context in the context of the research process.

Universe and Sample of the Research

The universe of the study; these are theses in the field of *occupational health and safety in schools*, the full text of which can be accessed in the YÖK Thesis database. For this reason, sampling was not carried out and all relevant theses were included in the analysis. In this context, a total of 42 theses were included in the research.

Data Collection Techniques

Screening Strategy and Inclusion/Exclusion Criteria

(i) The scanning process in the databases was done on 30.11.2024.

(ii) "School" and "occupational health" *as keywords in databases*;"*school" and "job security";* The terms "*education" and "occupational safety" and "education" and "occupational health"* were scanned in titles and keywords.

(iii) As a result of the relevant literature review in the research; The variables of author, year of publication, thesis title, university where the thesis was conducted, publication language, thesis type, subject, method, model and data collection tool were determined in accordance with the purpose and these data were withdrawn from the researches.

(iv) In the research, *each research was numbered using the Academic Publication Evaluation Form* and the researches were not specified; It *was withdrawn from the research for the reporting process* as a bibliography in APA style.

Reasons for not including the research study in the context of the case study:

(i) Not available in relevant databases

(ii) The full text is not accessible

(iii)Failure to focus on occupational health and safety in schools

It can be specified in the form of.

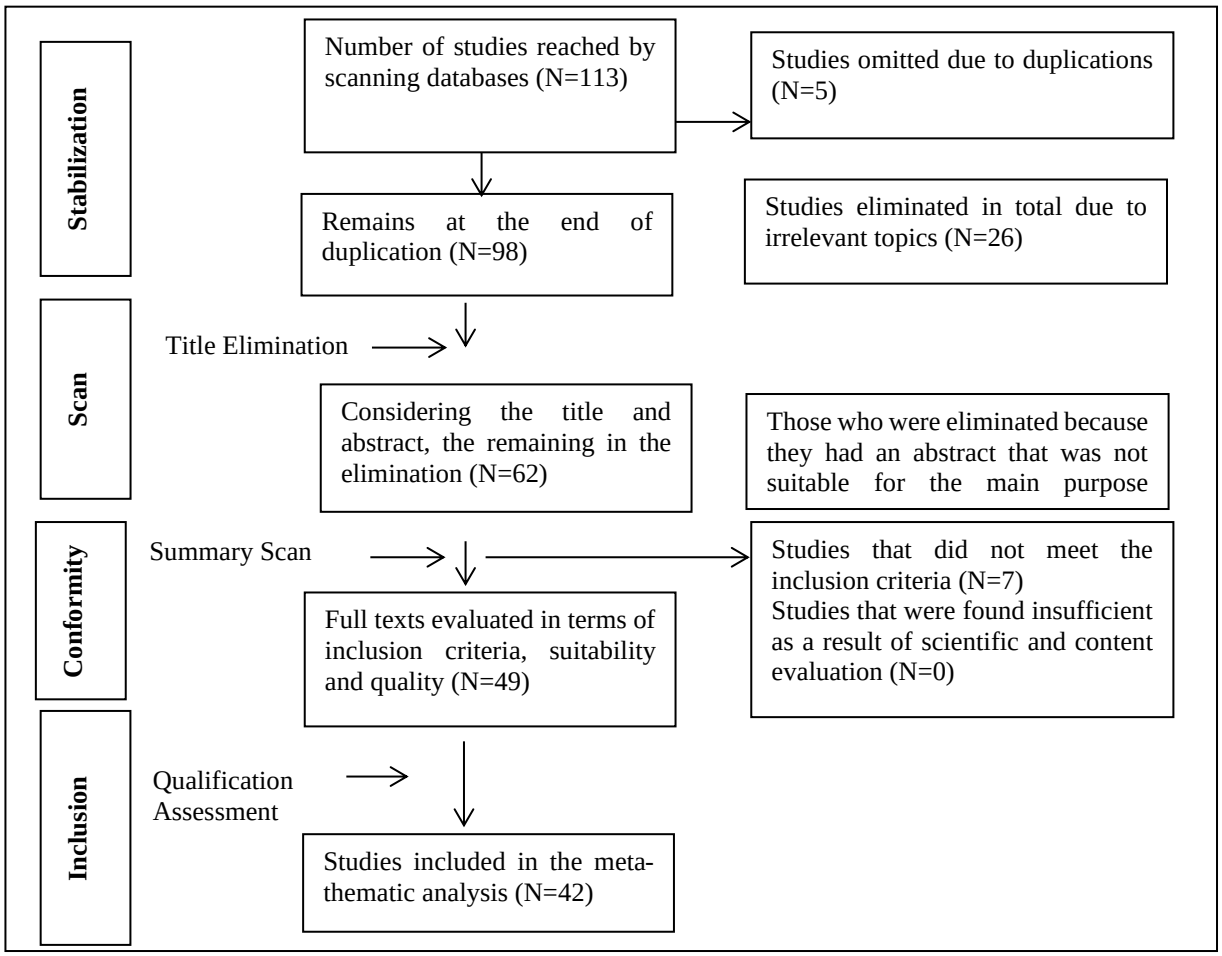

Figure 1. Flow diagram of the studies included in the analysis

As can be seen in the PRISMA diagram in Figure 1, all researches were scanned from the relevant databases within the scope of keywords in order to determine the researches suitable for the analysis. Among the studies whose full texts can be accessed, 113 studies were included in the study pool. Of the studies examined, 5 studies that were in duplication/overlap status were excluded from the scope. In the second stage, the remaining 98 studies were examined in depth, and 26 of these studies were removed from the pool on the grounds that they were not suitable for

the study due to unrelated topics. As a result of the title and abstract elimination, the remaining 42 studies were transferred to the Mendeley Program for evaluation as they were suitable for the purpose.

Analysis of Data

In the study, document analysis was used in the analysis of the data. Docs; journals, biographies and autobiographies, technical documents, field notes, diaries, official records, papers, reports or statistics, primary or secondary sources, historical events or chronologies, projects, plans, letters, photographs, books, articles (Cohen, Manion & Morrison, 2007). It is known that documents are important sources of information about the relevant field and researchers generally work on these written documents in qualitative research (Wallwn and Fraenkel, 2000).

In the study, document analysis was carried out in two stages. These;

(i) The theses in the study group were obtained from the thesis databases of YÖK and transferred to the computer environment in pdf format. In the study, *Mendeley Reference Manager* and *Excell* programs were used in the collection, classification and presentation of the data .

(ii) In the second stage, the analyzes of the studies transferred to the computer environment in the order of code numbers were made through the *Academic Publication Evaluation Form developed within the scope of the research* . In qualitative research, descriptive analysis techniques were used in the data analysis process. The first technique used is frequency analysis, which involves an approach that focuses on counting the frequencies of message elements. In this type of analysis, countable units are determined and the analysis indicators are expressed in the type of frequency. Frequency analysis reveals in a simple way the frequency of quantitative appearance of recording units. During the analysis of the material, it was intended to count the message elements according to the frequency of a particular element, and these counts were expressed by the frequency type. This approach provides an understanding of how often a particular item occurs and the intensity and importance of that element in the context of analysis. As a result of frequency analysis, items can be ranked in order of importance and classified based on their frequency (Köhler & Stemmler, 1997). Categorical analysis, on the other hand, generally refers to the division of a particular message into units and then the grouping of these units into categories according to predetermined criteria (Tavşancıl & Aslan, 2001).

Validity and Reliability of the Research

Validity in qualitative research means that the researcher observes the phenomenon in its true form and as impartially as possible. In addition, the process by which the researcher obtains the data, the explanation of how he reached the results, and the detailed reporting of the collected data are also important criteria of validity (Yıldırım & Şimşek, 2008).

In qualitative research, validity is handled in two ways: internal and external validity. Internal validity can be stated as the adequacy of the research process in revealing the truth under consideration. It is related. For this reason, the researcher is expected to be consistent both in the data collection process and in the analysis and interpretation processes of the data (Büyüköztürk et al., 2008). In this study, detailed definitions were made in the findings section in order to ensure internal validity, the information about the situation subject to the research was revealed with objective data, and then interpretation was made. The consistency between the data has been tried to be achieved by taking into account the internal homogeneity and external heterogeneity criteria. In other words, the similarities and differences are clearly revealed.

External validity can be expressed as the generalizability of research results. If the results of the research can be repeated to similar environments and situations, it can be said that the external validity of the research has been ensured. In this study, the withdrawal of publications from databases is explained in detail and the raw data obtained are presented in addition. It is defined in detail at a level that can be compared with different databases. Reliability; a clear and detailed description of the research process and data, i.e. in a way that allows another researcher to evaluate them; in short, it is related to the reproducibility of research results (Yıldırım and Şimşek, 2008). In this context, the analysis of the data was carried out by two experts and the formula developed by Miles and Huberman (1994) was used for the reliability calculation of the study.

Reliability = Consensus / (Consensus + Disagreement)

In the calculation made according to the reliability formula, the reliability of the research was found to be 92%. Reliability calculations above 70% show that the research is reliable. According to the result obtained, it can be said that the research is reliable.

Results

In this section, the findings after the analysis of the data are included.

Findings for the First Sub-Research Question

The findings regarding the distribution of the researches in the first sub-research question of the research by years are presented in Table 1.

Table 1. Distribution of the Studies Included in the Research by Years

Variable	Year	Number (n)	Percentage (%)
Year Distribution	2024	7	16,67
	2023	5	11,90
	2022	3	7,14
	2021	4	9,52
	2020	1	2,38
	2019	7	16,67
	2018	9	21,43
	2017	1	2,38
	2016	3	7,14
	2015	0	0,00
	2014	1	2,38
	2013	0	0,00
	2012	0	0,00
	2011	1	2,38
Sum		**42**	**100,00**

In the study, the distribution of theses on occupational health and safety in schools by years was examined. According to the findings, 2018 stands out as the year with the highest number of theses written with 21.43% (n=9). This is followed by 2019 and 2024 with rates of 16.67% (n=7). While the rate of theses written in 2023 was 11.90% (n=5), 9.52% (n=4) thesis studies were carried out in 2021. The rate of theses made in 2022 and 2016 was determined as 7.14% (n=3). 2020, 2017, 2014 and 2011 are among the years with lower rates of thesis work, and 2.38% (n=1) of theses were written in these years, respectively. In 2015, 2013 and 2012, no thesis studies were found.

The graph for the distribution of theses by year is presented in Figure 2.

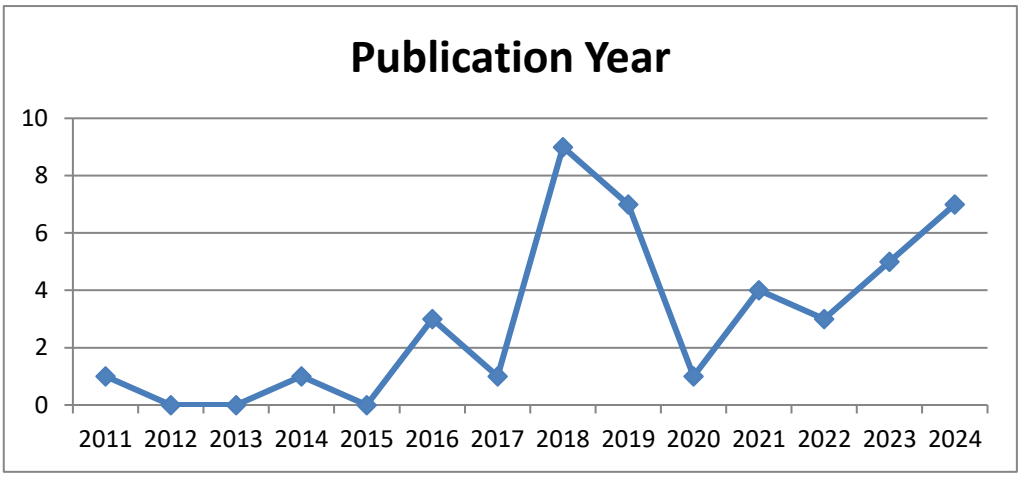

Figure 2. The graph for the distribution of theses by year

As can be seen in Figure 2, the increase in theses on the basis of total number paused until 2019, and the upward trend continued in 2022. This number reached a high level with 7 theses in 2024.

Findings for the Second Sub-Research Question

The findings regarding the distribution of the researches in the second sub-research question of the research according to the type of publication are presented in Table 2.

Distribution of Theses Included in the Research by Types

Table 2. Distribution of Theses by Types

Variable	Thesis Type	Number (n)	Percentage (%)
Research Type	Master	38	90,48
	PhD	3	7,14
	Specialization in Medicine	1	2,38
Sum		42	100,00

According to the findings, the majority of studies consist of master's theses. Of the 42 theses examined, 38 were at the master's level and accounting for 90.48%. PhD theses, on the other hand, have a more limited place with a rate of 7.14% (n=3). Additionally, only one study (2.38%; n=1) was found for specialization theses in medicine. These data show that academic studies in the field of occupational health and safety are largely concentrated at the master's level, while doctoral theses are quite limited.

The graph for the distribution of the relevant theses according to their types is presented in Figure 3.

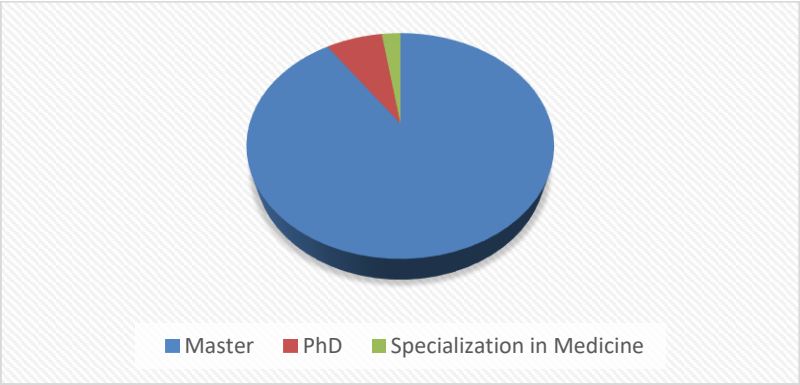

Figure 3. Types of Thesis

As can be seen in Figure 3, it can be said that the highest share in the distribution of theses according to their types belongs to master's theses.

Findings on the Third Sub-Research Question

The findings regarding the distribution of the researches in the third sub-research question of the research according to the publication language are presented in Table 3.

Table 3. Distribution of the Theses Included in the Research According to the Language of Publication

Variable	Publication Type	Number (n)	%
Publication Language	Turkish	40	95,24
	English	2	4,76
Sum		42	100

When the distribution of the theses examined in the study according to the publication languages was analyzed, it was determined that the majority of the studies were written in Turkish. Out of a total of 42 theses, 40 were published in Turkish and this rate is 95.24%. The number of theses written in English is 2 and has a share of 4.76% in the total.

The graph for the distribution of the relevant theses according to the publication language is presented in Figure 4.

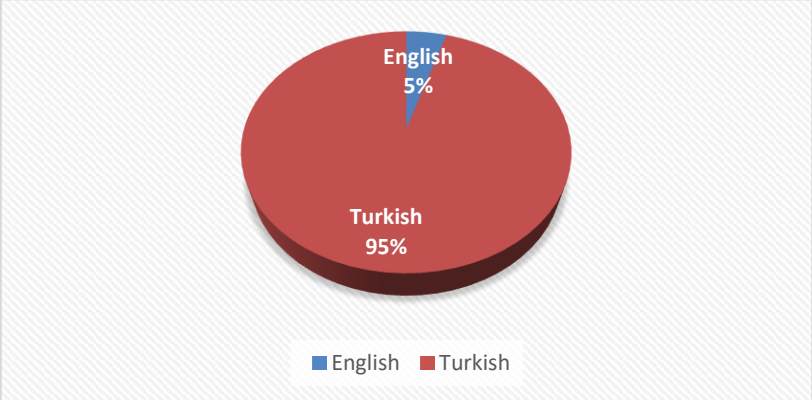

Figure 4. Publication Language

As can be seen in Figure 4, it can be said that the majority of the theses in the context of the publication language are in Turkish.

Findings on the Fourth Sub-Research Question

The findings regarding the distribution of the theses according to the universities where they were carried out are presented in Table 4.

Table 4. Distribution of Theses Included in the Research by Universities

Variable	Universities	Number (n)	%
Universities where theses are published	Istanbul Aydin University	3	7.14
	Istanbul Gedik University	3	7.14
	Marmara University	2	4.76
	Mersin University	2	4.76

Variable	Universities	Number (n)	%
	Sivas Cumhuriyet University	2	4.76
	Kastamonu University	2	4.76
	Çankırı Karatekin University	2	4.76
	Üsküdar University	2	4.76
	Tarsus University	2	4.76
	Ağrı İbrahim Çeçen University	1	2.38
	Akdeniz University	1	2.38
	Ankara Hacı Bayram Veli University	1	2.38
	Artvin Coruh University	1	2.38
	Cankaya University	1	2.38
	Gazi University	1	2.38
	Gaziantep University	1	2.38
	Gedik University	1	2.38
	Hasan Kalyoncu University	1	2.38
	Igdir University	1	2.38
	Inonu University	1	2.38
	Istanbul Esenyurt University	1	2.38
	Istanbul Okan University	1	2.38
	Istanbul Yeni Yuzyil University	1	2.38
	Izmir University of Economics	1	2.38
	Izmir Institute of Technology	1	2.38
	Caucasus University	1	2.38
	Kirklareli University	1	2.38
	Kirsehir Ahi Evran University	1	2.38
	Mugla Sıtkı Koçman University	1	2.38
	Suleyman Demirel University	1	2.38
	Usak University	1	2.38

Table 4 shows the distribution of the theses included in the research according to the universities where they were published. A total of 42 theses were examined, and the highest number of theses were published in Istanbul Aydın University (n=3, 7.14%) and Istanbul Gedik University (n=3, 7.14%). The number of theses published in Marmara University, Mersin University, Sivas Cumhuriyet University, Kastamonu University, Çankırı Karatekin University, Üsküdar University and Tarsus University is equal (n=2, 4.76%) and ranks second. The number of theses published in other universities is one each (n=1, 2.38%), and these universities include Ağrı İbrahim Çeçen University, Akdeniz University, Ankara Hacı Bayram Veli University, Artvin Coruh University, Çankaya University, Gazi University, Gaziantep University, Hasan Kalyoncu University, Iğdır University, İnönü University, Istanbul Esenyurt University, Istanbul Okan University, Istanbul Yeni Yüzyıl University, Izmir University of Economics, Izmir High Technology Institute, Caucasus University, Kırklareli University, Kırşehir Ahi Evran University, Muğla Sıtkı Koçman University, Süleyman Demirel University and Uşak University.

Findings on the Fifth Sub-Research Question

The data for the distribution of the relevant theses according to the subjects in which they were published are presented in Table 5.

Table 5. Distribution of the Theses Included in the Research According to the Basic Disciplines

Variable	Topic	Number (n)	%
Distribution of theses according to their main disciplines	Education and Training	27	64.29
	Technical Education	4	9.52
	Health Education	4	9.52
	Civil Engineering	3	7.14
	Engineering Sciences	3	7.14
	Psychology	2	4.76
	Labour Economics and Industrial Relations	2	4.76
	Architecture	2	4.76
	Accidents	2	4.76
	Public Health	2	4.76
	Social Work	1	2.38
	Business Administration	1	2.38
	Healthcare Management	1	2.38
	Law	1	2.38
	Gastronomy and Culinary Arts	1	2.38
	Tourism	1	2.38
	Science and Technology	1	2.38
	Nursing (Nursing)	1	2.38
Sum		**59**	**100.00**

* Since some thesis areas are related to more than one discipline, the number of disciplines is over 42.

Table 4 shows the distribution of the theses included in the research according to the universities where they were published. A total of 42 theses were examined, and the highest number of theses were published in Istanbul Aydın University (n=3, 7.14%) and Istanbul Gedik University (n=3, 7.14%). The number of theses published in Marmara University, Mersin University, Sivas Cumhuriyet University, Kastamonu University, Çankırı Karatekin University, Üsküdar University and Tarsus University is equal (n=2, 4.76%) and ranks second. The number of theses published in other universities is one each (n=1, 2.38%), and these universities include Ağrı İbrahim Çeçen University, Akdeniz University, Ankara Hacı Bayram Veli University, Artvin Coruh University, Çankaya University, Gazi University, Gaziantep University, Hasan Kalyoncu University, Iğdır University, İnönü University, Istanbul Esenyurt University, Istanbul Okan University, Istanbul Yeni Yüzyıl University, Izmir University of Economics, Izmir High Technology Institute, Caucasus University, Kırklareli University, Kırşehir Ahi Evran University, Muğla Sıtkı Koçman University, Süleyman Demirel University and Uşak University.

These findings show that the theses included in the research are largely focused on the discipline of Education and Training, while technical and health-related disciplines have a certain share. Other disciplines, on the other hand, have a lower representation rate within the scope of research.

The graph of the distribution of the theses included in the research according to their basic disciplines is presented in Figure 5.

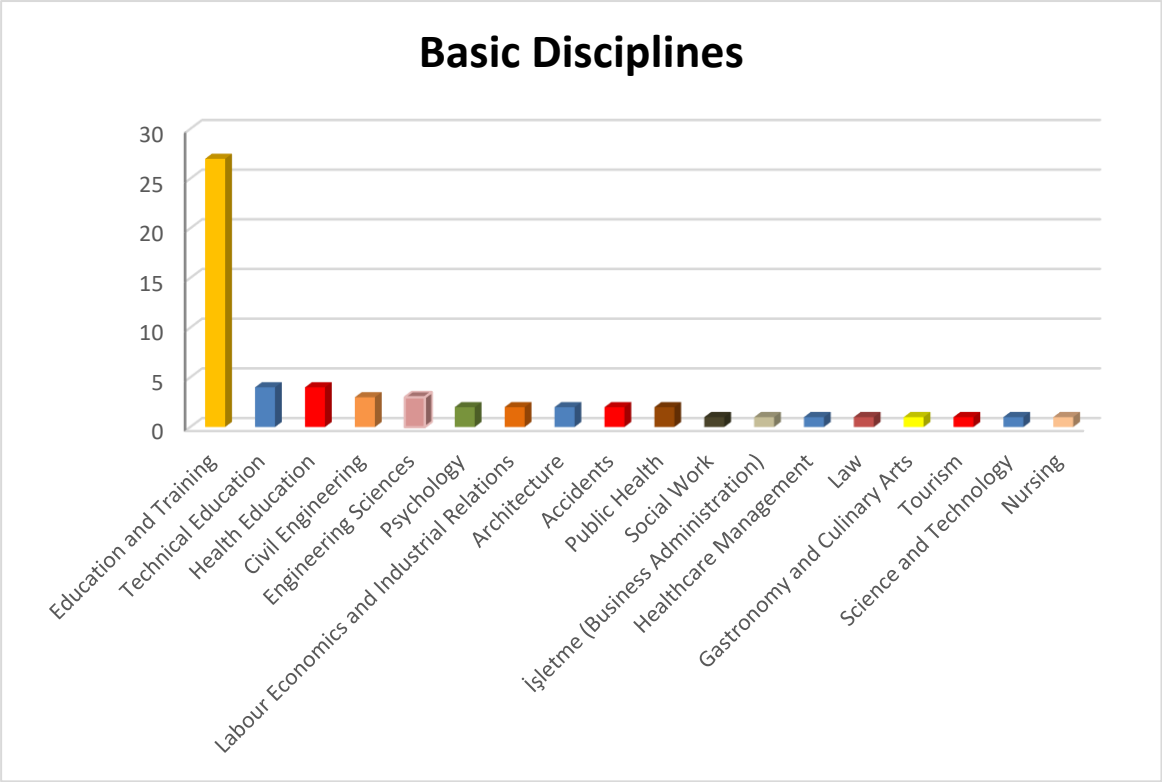

Figure 5. Distribution of Theses According to Basic Disciplines

As can be seen in Figure 5, theses in the field of education and training play a leading role (f=27). This is followed by Technical Education and Health Education researches with 4 studies each.

Findings on the Sixth Sub-Research Question

The data for the distribution of the relevant theses according to the method are presented in Table 6.

Table 6. Distribution of the Studies Included in the Research According to Method Trends

Variable	Methods	Number (n)	%
Research Method Trend	Quantitative	18	42.86
	Qualitative	14	33.33
	Hash	10	23.81
Sum		**42**	**100**

When the distribution of the studies included in the study according to method trends is examined, it is seen that 42.86% were carried out using quantitative, 33.33% qualitative and 23.81% mixed methods. These findings show that the most commonly used method in research is quantitative.

The graph of the theses according to their research method and trends is presented in Figure 6.

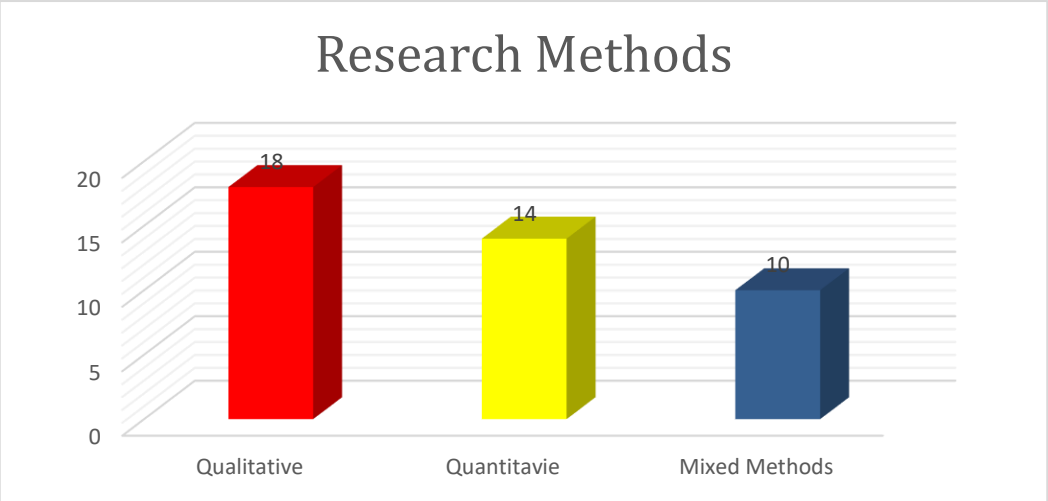

Figure 6. Research Methods

As can be seen in Figure 6, quantitative research can be stated as the most preferred research method/design (f=18). This is followed by qualitative research with 14 studies.

Findings on the Seventh Sub-Research Question

The data for the distribution of the relevant theses according to the research model are presented in Table 7.

Table 7. Distribution of Theses Included in the Research According to Research Model Trends

Variable	Methods	Number (n)	%
Research Model Distributions of Theses	Survey	12	28.57
	Descriptive	9	21.43
	Phenomenology	6	14.29
	Experimental	5	11.90
	Case Study	4	9.52
	Case Study	3	7.14
	Relational	2	4.76
	Meta-synthesis	1	2.38
Sum		**42**	**100**

According to the data in the table, the most preferred model in research *is scanning*, which stands out with a rate of 28.57 percent. This is followed by *descriptive* model (21.43%), *phenomenological* model (14.29%) and *case study* (11.90%). *Experimental* model (9.52%) and *case study* (7.14%) models were less preferred. *Relational* (4.76%) and *meta-synthesis* (2.38%) models have the lowest rates. In general, the most commonly used methods in research are based on survey and descriptive models.

A graph of their study according to research design trends is presented in Figure 7.

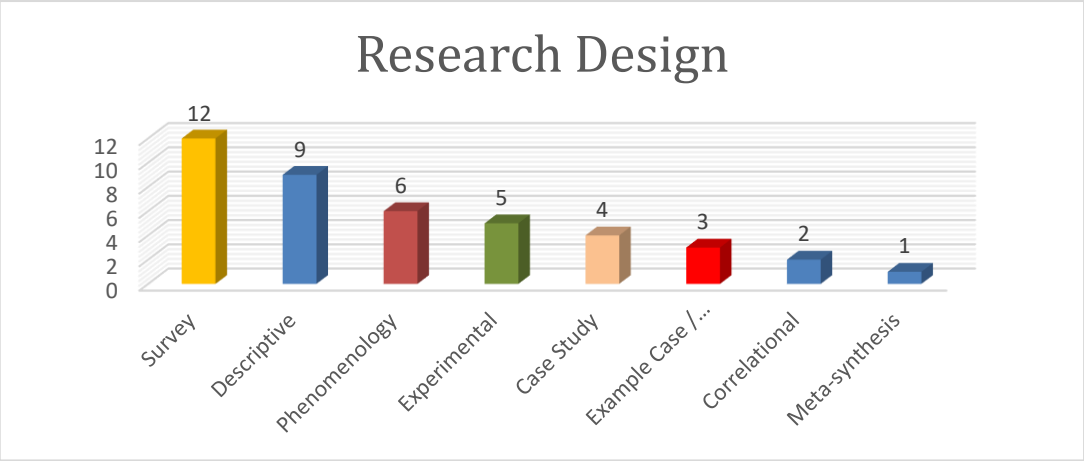

Figure 6. Research Design

As can be seen in Figure 7, survey type studies (f=12) and descriptive studies (f=9) can be stated as the most preferred research design/design: These are followed by phenomenological studies with 6 studies.

Findings on the Eighth Sub-Research Question

The distribution of the topics studied in the theses is presented in Table 8.

Table 8. Distribution of Theses for the Subjects Studied

Subject Category	Frequency	Percentage (%)
Occupational Health and Safety in Vocational and Technical High Schools	10	18.87
Ensuring General Occupational Health and Safety Criteria in Schools	8	15.09
School Administrators' OHS Views and Management Policies	7	13.21
OHS Competence of Teachers and Academic Staff	6	11.32
Physical and Psychosocial Occupational Diseases	5	9.43
Occupational Health and Safety Culture and Awareness	5	9.43
ISO 45001 and Legal Regulations	4	7.55
Studies on Special Education and Disabled Employees	3	5.66
Occupational Safety in Laboratories and Workshops	3	5.66
Distance Education and the Effects of COVID-19	2	3.77
Sum	**53**	**100.00**

According to the data presented in Table 8, the theses on occupational health and safety in educational institutions in Turkey are shaped around different themes. The most concentrated subject of the studies is "Occupational Health and Safety in Vocational and Technical High Schools" and constitutes 18.87% of the total theses. This situation shows that occupational safety is considered as a critical area in vocational and technical education. The second subject of "Ensuring General Occupational Health and Safety Criteria in Schools" was studied at a rate of 15.09%, revealing that ensuring occupational safety standards is a subject of academic interest. The title of "School Administrators' OHS Views and Management Policies" shows that administrators' perspectives on occupational health are an important research area with 13.21%.

The competencies of teachers and academic staff on occupational health and safety were discussed at a rate of 11.32%, and it is understood that the knowledge and practices of educators on this subject were evaluated. "Physical and Psychosocial Occupational Diseases" and "Occupational Health and Safety Culture and Awareness" were studied equally (9.43%), and thus, it was seen that the researches aimed at increasing the occupational safety awareness of teachers and students had an important place. Less studied topics include "ISO 45001 and Legal

Regulations" (7.55%), "Studies on Special Education and Disabled Employees" (5.66%), "Occupational Safety in Laboratories and Workshops" (5.66%) and "Distance Education and the Effects of COVID-19" (3.77%). ISO 45001 standards, access to occupational health of individuals in the field of special education, and the effects of the pandemic on occupational safety have been relatively less discussed in academic studies. These findings show that occupational health and safety issues in educational institutions are generally centered around vocational and technical education, the attitudes of administrators and the competencies of teachers.

Conclusion and Discussion

In this research, a bibliometric analysis of domestic theses on occupational health and safety in schools in Turkey was conducted. In this context, the current academic trends, research methodologies and key themes related to occupational health and safety were determined. The findings show that academic studies in the field of occupational health and safety are concentrated in certain periods and shaped around certain themes. In particular, the fact that 2018 stands out as the year with the highest number of theses suggests that the issue of occupational health and safety was handled with increasing academic interest in this period. This situation may be related to the legal regulations made before 2018, the wide repercussions of occupational accidents in the public and the fact that occupational health policies are on the agenda more (Günay and Özbilen, 2023). In addition, the Covid 19 pandemic may have an effect on the decrease in the thesis rate after 2019 (Baykal, Sarı and Arslan, 2022). Because after the effect of the pandemic is removed, there is a gluttony in the theses again.

The predominance of academic studies at the master's level in the field of occupational health and safety underscores a critical imbalance in the scientific production within this area. With master's theses constituting an overwhelming 90.48% of total academic output, it is evident that research in this field is primarily focused on generating applied, sector-oriented knowledge. Given the inherently practical and regulatory nature of occupational health and safety, this emphasis on application-based research is expected and, to a certain extent, necessary. However, the scarcity of doctoral dissertations in the field indicates a significant gap in the production of in-depth theoretical knowledge, which is crucial for the conceptual and methodological advancement of the discipline.

The scarcity of doctoral-level research may be attributed to several interrelated factors. First, the applied nature of the field often leads to an immediate demand for professionals with practical expertise rather than scholars pursuing theoretical contributions. This may discourage potential researchers from engaging in long-term doctoral studies. Second, the availability of academic staff specializing in occupational health and safety at the doctoral level remains limited, potentially restricting mentorship and supervision opportunities for doctoral candidates. Additionally, funding opportunities and institutional support for doctoral research in this field may not be as robust as in other disciplines, further limiting the development of in-depth theoretical frameworks. The lack of doctoral dissertations also raises concerns regarding the sustainability of academic expertise in occupational health and safety. Theoretical advancements are crucial for refining existing models, integrating interdisciplinary perspectives, and developing innovative methodologies that can enhance workplace safety policies and interventions. Without sufficient doctoral-level research, the field risks stagnation, as it may remain predominantly practice-oriented without advancing new conceptual paradigms. This could also affect the quality of education at the graduate level, as a strong theoretical foundation is necessary to guide future applied research efforts. In this context, increasing the number of doctoral studies in occupational health and safety should be considered a strategic priority. Encouraging interdisciplinary collaborations with fields such as organizational psychology, public health, engineering, and law could foster more comprehensive and theoretically robust research. Additionally, expanding

funding opportunities and academic incentives for doctoral candidates, as well as enhancing institutional support for faculty specializing in this field, could contribute to the scientific advancement and institutionalization of occupational health and safety as a distinct academic discipline. Furthermore, promoting research that integrates theoretical inquiry with empirical validation could strengthen the field's contribution to both academia and professional practice, ensuring that occupational health and safety evolves beyond regulatory compliance to encompass a more holistic, evidence-based approach.

Another noteworthy finding is that the majority of the theses are written in Turkish, indicating that the subject is primarily explored within the national context of Turkey. While this reflects the local relevance and applicability of the studies, it also raises concerns about the limited integration of Turkish research into the global academic landscape. Considering international occupational health and safety standards and approaches, an increase in English-language theses could enhance the global visibility of research in this field and facilitate its inclusion in the international academic literature (Günay & Özbilen, 2023). The lack of comparative studies on international occupational health and safety practices is particularly significant, as it limits the ability of researchers to assess and improve local policies by drawing on global best practices. Addressing this gap through more comparative and internationally oriented research could contribute to both the academic depth and practical effectiveness of occupational health and safety studies (Akpolat, 2014).

An examination of the distribution of theses across universities reveals that Istanbul Aydın University and Istanbul Gedik University have produced the highest number of theses in the field of occupational health and safety. This concentration suggests that academic research in this field is not evenly distributed among higher education institutions but is instead clustered within certain universities that provide more resources, funding, and research support for occupational health and safety studies. The fact that some universities have published only a single thesis on the topic further highlights the disparity in academic engagement with this field across institutions. This uneven distribution may be attributed to factors such as institutional priorities, the availability of specialized faculty members, and the presence of dedicated research centers focusing on occupational health and safety (Karaltı, 2017). While the concentration of research in a few universities may facilitate the development of expertise and specialization, it also risks limiting the diversification of perspectives and methodologies within the field. Encouraging a more balanced distribution of research efforts across universities could contribute to a more comprehensive and interdisciplinary approach to occupational health and safety studies.

From a methodological perspective, the predominance of quantitative research in occupational health and safety studies indicates that the field has largely been approached through measurable, data-driven analyses. The reliance on statistical techniques and survey-based research suggests a focus on identifying patterns, assessing risk factors, and evaluating workplace safety conditions through empirical data. While the dominance of quantitative methods is beneficial for generating generalizable findings and establishing statistical correlations, it may also present limitations in capturing the nuanced and context-dependent nature of occupational health and safety issues. In this regard, the presence of qualitative methods in 33.33% of studies and mixed-methods approaches in 23.81% of studies indicates an emerging recognition of the need for in-depth, contextualized analysis. Given the complex and human-centered nature of occupational health and safety, increasing the use of qualitative research methodologies—such as in-depth interviews, ethnographic studies, and case studies—could provide deeper insights into the lived experiences of workers, organizational safety cultures, and the psychological dimensions of workplace risks (Karaltı, 2017).

Moreover, the predominance of survey-based research models reflects a tendency among

researchers to describe and assess existing occupational health and safety practices. While descriptive and phenomenological approaches contribute to a better understanding of the current state of workplace safety, they may fall short in generating actionable solutions or testing the effectiveness of specific interventions. The relative scarcity of experimental and intervention-based research suggests a potential gap in the empirical validation of occupational health and safety policies and practices (Akpolat, 2014). Expanding the use of experimental designs and longitudinal studies could strengthen the evidence base for occupational health and safety interventions, allowing for more robust policy recommendations and the development of evidence-based best practices. Encouraging interdisciplinary collaborations, integrating qualitative insights with quantitative data, and adopting innovative research methodologies could further enhance the academic rigor and practical relevance of occupational health and safety studies (Erdoğan and Genç, 2021).

When the thematic distribution of the theses is examined, it is seen that the most studied subject is "Occupational Health and Safety in Vocational and Technical High Schools". It can be explained by the fact that vocational education is directly related to occupational health and safety and the problems experienced in this field are frequently brought to the agenda (Ceylan & Başhelvacı, 2011). The importance of occupational health and safety practices in vocational and technical education is considered as a critical area in terms of providing students with a safety culture at an early age (Akpolat, 2014). In addition, the subject of "Providing General Occupational Health and Safety Criteria in Schools" shows that occupational health standards in educational institutions are an important research area that is handled at the academic level. This situation reveals that occupational health and safety measures are gaining more and more importance not only in industry and production, but also in educational institutions (Günay & Özbilen, 2023). The prominence of the studies titled "School Administrators' OHS Views and Management Policies" shows that administrators' attitudes towards occupational health have become an important research area. The manager factor stands out as a determining factor in the effective implementation of occupational health and safety practices (Erdoğan & Genç, 2021).

The fact that there are more specific topics such as "ISO 45001 and Legal Regulations" and "Studies on Special Education and Disabled Employees" among the less studied topics shows that these areas have not yet been adequately addressed in the academic literature. Further analysis of the impact of international standards such as ISO 45001 on occupational health and safety practices through academic studies can contribute to the elimination of deficiencies in this regard. The limited research on special education and disabled employees suggests that occupational health and safety policies have not yet developed sufficiently in terms of inclusiveness (Erdoğan, 2018). The measures to be taken in order for people with disabilities to work safely in business life need to be addressed more at the academic level.

This research has some limitations in terms of specific methodology and scope. First of all, in the study, only the theses whose full text can be accessed in the database of the Council of Higher Education (YÖK) Thesis Center were examined. This means that studies that are closed to access or in different academic databases are not included in the analysis. For this reason, it may be necessary to access studies in other national and international databases in order to provide a broader academic perspective. In addition, an analysis was carried out only on the theses in the study. In this context, articles, reports, books or other academic sources related to the subject are excluded. In order to examine academic trends in the field of occupational health and safety more comprehensively, other scientific publications should also be included in the analysis.

Recommendations

The conclusion part serves as the primary component where the study is summarized and finalized. The concluding section of an essay should emphasize the significance of the thesis

statement, provide a sense of coherence to the overall piece, and make a lasting impact on the reader. This section should also encompass the limitations of the study and provide recommendations for further research. The conclusion part serves as the primary component where the study is summarized and finalized. The concluding section of an essay should emphasize the significance of the thesis statement, provide a sense of coherence to the overall piece, and make a lasting impact on the reader. This section should also encompass the limitations of the study and provide recommendations for further research.

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