

Review

Systematic Literature Review on Variables Impacting Organization's Zero Accident Vision in Occupational Safety and Health Perspectives

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Abstract: The zero-accident vision has sparked debate in the fields of occupational safety and health. While many organizations and policymakers have successfully implemented the zero-accident vision, numerous notable occupational safety and health scholars from various backgrounds argue against its use and success in theory and practice. This article aimed to analyze the existing literature on the variables impacting an organization's zero-accident vision. A systematic review of the Scopus and Web of Science databases revealed 25 related studies using the PRISMA statement (preferred reporting items for systematic reviews and meta-analyses) review method. Following a thorough review of these articles, seven main themes emerged: the occupational safety and health management system, organizational leadership, safety culture, training, communication, risk, and legislation. These seven themes resulted in a total of 28 sub-themes. Several recommendations are emphasized, including the use of a specific and standard systematic review method to guide research synthesis in the frame of reference of variables impacting the organization's zero-accident vision and to practice complementary searching techniques, such as citation tracking, reference searching, snowballing, and contacting experts.

Keywords: zero accident; occupational safety and health; safety culture; systematic review; PRISMA

1. Introduction

The notion of a zero-accident vision is generally recognized as the societal norm across many industries, providing organizations with the opportunity to move beyond mere compliance and into the world of business sustainability. The core application of the zero-accident vision is reflected equally across the organization and is linked with the overarching commitment to its personnel's safety and health, including organization management and employees [1]. The organization's objective is to foster a culture and environment in which its employees strive toward a zero-accident vision. Striving to be better than the benchmark implies that the organization is better than its neighbors and, at times, even so, is insufficient. Obtaining zero accidents raises the bar and is more stringent than the existing norm of employee safety objectives, established against benchmarks. Getting to zero accidents fosters a culture of self-improvement and involves employees and management in a person-centered approach [2,3]. The philosophy of a zero-accident vision focuses on reducing incidents with the ultimate goal of no one dying or being injured. However, for decades, the dilemma has been how to align the organization on an efficient

strategy to achieve these goals. To achieve the zero-accident vision, the organization must undergo a paradigm shift in its thinking, performance, and alignment around occupational safety and health [4,5]. An organization must embrace and internalize the concept of a zero-accident vision in all workplace occurrences, acknowledge the primacy of accident avoidability and recognize the worth of each individual's life and well-being [6–8].

It is essential to comprehend that the zero-accident vision is founded on supporting infrastructure, but it is realized via cultural transformation [9]. The zero-accident vision concept is based on the belief that eradicating all employee injuries is possible and the only acceptable objective for considerable periods of time [10]. Per the zero-accident vision principle, all employee injuries may be effectively avoided. The zero-accident vision is not just a goal, but also a thought process that begins with the concept that if employees can work for one day without being injured, they can work every additional day without being injured. The mere occurrence of an injury does not imply that it is acceptable to the organization. Since a zero-accident vision is now a possibility, accident prevention is no longer only a commercial imperative but also a legal obligation. If the organization can avoid injuring its employees, it has a moral duty to do so. The zero-accident vision is established on the belief that all accidents are prevented. If accidents cannot be avoided immediately, this should be possible in the long term. The zero-accident vision seeks to inspire individuals to think and behave in ways that promote the vision that all accidents are preventable. Higher organizational safety targets are thus a step toward the wider adoption of the zero-accident vision. The zero-accident vision offers an ethically solid basis for accident prevention [11–13]. Six innovative perspectives encompassing commitment strategy, a way of doing business, innovation, prevention culture, ethics and CSR, and networking and co-creation have been described to facilitate organizational management in adapting it to the implementation of routine activities in the workplace [14]. The zero-accident vision begins with the desire to create accident-free workplaces. Indeed, it should be recognized that the zero-accident vision cannot be fulfilled without the personal dedication to that goal of each individual employee in the organization. Another implication is that merely performing the same tasks in a better way than before will not result in a successful zero-accident vision initiative. In terms of current safety concerns, both technical and social improvements, as well as outside-the-box thinking, are required. Indeed, the zero-accident vision is a safety commitment approach rather than a risk-control plan. It is a goal that an organization must set for itself, in order to improve its safety performance. The zero-accident vision sends a clear safety message from top management both inside and outside an organization, and it can help to improve the safety culture [11,13,14]. Zero-accident vision is about cultivating a culture via behaviors that allow employees to work without accidents or injuries [15]. To attain this aim, new ways of advancing or improving safety standards and performance may be required. Meanwhile, the zero-accident vision is viewed as a perspective of a future in which no one is killed or suffers injuries that cause permanent disability [16]. In response, for an organization to achieve its zero-accident vision, a holistic safety and health approach is required [17,18].

A zero-accident vision appears to be the only ethically acceptable ambition for many. Any other view would suggest a willingness to tolerate an accident. However, the zero-accident vision makes little sense to others. It is seen as a mythical ambition, a popular illusion that anchors us to attain ordinary results; it is regarded as a work of fiction about an unfinished journey [19,20]. Although the rationale for pursuing such a goal is clear, there are many “non-believers” who do not believe that it is attainable. The literature, on the other hand, shows that such a goal is an important element of safety and health culture and that it is complementary to the vision of zero fatalities and injuries. Furthermore, it is the only purpose that is obvious [21]. In practice, the zero-accident vision is also seen as a philosophy and an objective with many meanings. People see the zero-accident vision as an unattainable goal, inconsistent with the current problems of practice that they confront daily, and are, instead, satisfied with looking forward with a sense of collective ownership to a prospective future [21,22]. The zero-accident vision is absolute and leaves no space

for error; the zero-accident vision strategy forces employees to aim for perfection [23]. The notion of a zero-accident vision works only in an ideal environment and does not allow employees to commit failures without incurring severe repercussions. The language of the zero-accident vision contrasts with the organization's stated purpose of allowing employees to speak out about safety concerns and feel more secure because zero is, as previously said, an absolute value wherein failure is not acceptable. As a result, employees are always frightened of doing the wrong thing, rather than focusing on what is right.

The current study is important because the zero-accident vision is a paradigm that appears to divide discourse in the occupational safety and health environment. Whereas many organizations, as well as some policymakers, have effectively implemented a zero-accident vision, as well as occupational safety and health strategies and programs, several distinguished and experienced occupational safety and health scholars from a range of backgrounds make the argument against its use and success in both theories and practice. Additionally, this study is important to identify the variables impacting an organization's zero-accident vision, as well as to gather in-depth information on the review procedures that were adopted, in terms of the use of keyword identification, article screening, article eligibility, and database use. Furthermore, this scenario makes it simple for future researchers to reproduce the inquiry, approve the comprehension, or evaluate the breadth of material, in order to arrive at the correct idea of zero accidents based on variables influencing the organization's zero-accident vision. Moreover, this study is essential because it gives information on the degree of the focus of organizational strategies, which may aid organization management in offering the potential of understanding the future attention linked to decreasing workplace accidents. Additionally, the findings of this study will indeed be valuable to policymakers engaged in the planning, management, and enforcement of occupational safety and health. Effective enforcement in their respective sectors may be accomplished by taking into account the aspects of variables that impact an organization's zero-accident vision. The current systematic review was created with the main research question in view: What are the variables impacting the organization's zero-accident vision? The purpose of this study is to examine the current literature on the variables influencing the organization's zero-accident vision. This section explains why a systematic review is being conducted, while the second section goes into the methodology and the PRISMA statement (preferred reporting items, systematic reviews, and meta-analysis) technique that was followed. The third section conducts a systematic review and synthesis of the scientific literature to discover, select, and evaluate the relevant research on variables impacting the organization's zero-accident vision. The final section highlights the research priorities for the future.

2. Methodology

This section describes the method utilized to acquire the articles relevant to variables impacting the organization's zero-accident vision. The reviewers employed the PRISMA technique, which includes the resources used (Scopus, the Web of Science, and manual handpicking) to conduct the systematic review, eligibility and exclusion criteria, the steps of the review process (identification, screening, and eligibility), and data abstraction and analysis.

2.1. PRISMA

PRISMA, or the preferred reporting items for systematic reviews and meta-analyses, is a recognized guideline for conducting a systematic review of the literature. In general, publication standards must provide authors with the relevant and necessary information that will allow them to evaluate and examine the quality and rigor of a review. Furthermore, PRISMA emphasizes the review's report, which analyzes randomized trials and can also be used as the foundation for presenting systematic reviews for other forms of research [24]. On the other hand, it is suggested that PRISMA is equally appropriate for the field of environmental management because it clearly specifies the research involved [25]. Furthermore,

PRISMA checks the enormous library of scientific literature at a predetermined time period, allowing for an accurate search of terms concerning variables impacting the organization's zero-accident vision. Aside from that, the implementation of PRISMA allows for coded information regarding future occupational safety and health management reviews.

2.2. Resources

The review techniques in the current study were carried out utilizing two primary databases, namely, Scopus and the Web of Science, because both databases are strong and include more than 334 disciplines of study, including occupational safety and health studies. It should be remembered, however, that no database, including Scopus and the Web of Science, is flawless or complete. As a result, researchers are tasked to perform their search, utilizing multiple databases to enhance the probability of finding relevant publications [26]. As a result, the current study conducted manual search efforts on numerous known sources, such as Science Direct, Taylor & Francis, Springer, and Sage, because they are reliable databases including publications relevant to occupational safety and health research. Taylor & Francis, for example, has published nearly 4 million articles on topics such as occupational safety and health.

2.3. The Systematic Review Process for Selecting the Articles

2.3.1. Identification

The systematic review approach used to select the number of relevant articles for the following study was divided into three major steps. The initial step is to identify keywords, which is followed by the process of searching for related and comparable phrases, using the thesaurus, dictionaries, encyclopedias, and previous research. As a result, after determining all relevant terms, search strings for the Scopus and Web of Science databases were created in August 2021 (see Table 1). Most notably, the current study effectively retrieved 700 articles from both databases. As previously indicated, manual searching on other databases using similar keywords generated an additional 16 articles. The first step of the systematic review method revealed 716 publications in total.

Table 1. Search strings.

Database	Search String
Web of Science	TS = (("zero accident*" OR "zero injur*" OR "zero harm*" OR "zero incident") AND ("principle*" OR "fundamental*" OR "criteri*" OR "formula*" OR "ideal*" OR "model*" OR "requirement*" OR "guide*" OR "paradigm*" OR "type*" OR "philosoph*" OR "idea*" OR "theor*" OR "value*" OR "component*" OR "element*" OR "factor*" OR "aspect*" OR "instrument*"))
Scopus	TITLE-ABS-KEY (("zero accident*" OR "zero injur*" OR "zero harm*" OR "zero incident") AND ("principle*" OR "fundamental*" OR "criteri*" OR "formula*" OR "ideal*" OR "model*" OR "requirement*" OR "guide*" OR "paradigm*" OR "type*" OR "philosoph*" OR "idea*" OR "theor*" OR "value*" OR "component*" OR "element*" OR "factor*" OR "aspect*" OR "instrument*"))

2.3.2. Screening

The initial round of screening was designed to eliminate duplicate articles. In this context, 71 publications were eliminated during the first stage, while 645 articles were screened in the second stage, based on the numerous inclusion and exclusion criteria set by the researchers. The first criterion was the type of literature, with the researchers choosing to focus solely on journal source and article document type (research articles) because they serve as primary sources of empirical data. As a result, conference papers, book chapters, reviews, conference reviews, notes, abstract reports, business articles, short surveys, retracted works, conference proceedings, trade journals, book series, books, and chapters in books were all omitted from the current study. Second, to prevent misunderstanding and difficulties in translation, the search attempts eliminated non-English publications and concentrated solely on articles published in English. Furthermore, in terms of the timeline, a period of 10 years (between 2011 and 2020) was chosen as an acceptable length of time to observe the progress of research and associated publications. Based on these criteria, a total of 529 articles were eliminated (see Table 2).

Table 2. Inclusion and exclusion criteria.

Criterion	Eligibility	Exclusion
Literature type	Journal (research articles)	conference papers, book chapters, reviews, conference reviews, notes, abstract reports, business articles, short surveys, retracted works, conference proceedings, trade journals, book series, books, chapters in books
Language	English	Non-English
Timeline	2011–2020	<2011, >2020

2.3.3. Eligibility

For the third stage, known as eligibility, a total of 116 articles were prepared. More significantly, at this stage, the titles, abstracts, and major contents of all the articles were extensively evaluated to verify that they met the inclusion criteria and were suitable for use in the current study, to meet the aims of the current research. As a result, 91 articles were excluded since they were not based on empirical data and were determined to be articles on the hard sciences that did not focus on variables that impact an organization's zero-accident vision. Finally, the remaining 25 articles were ready to be assessed (see Figure 1).

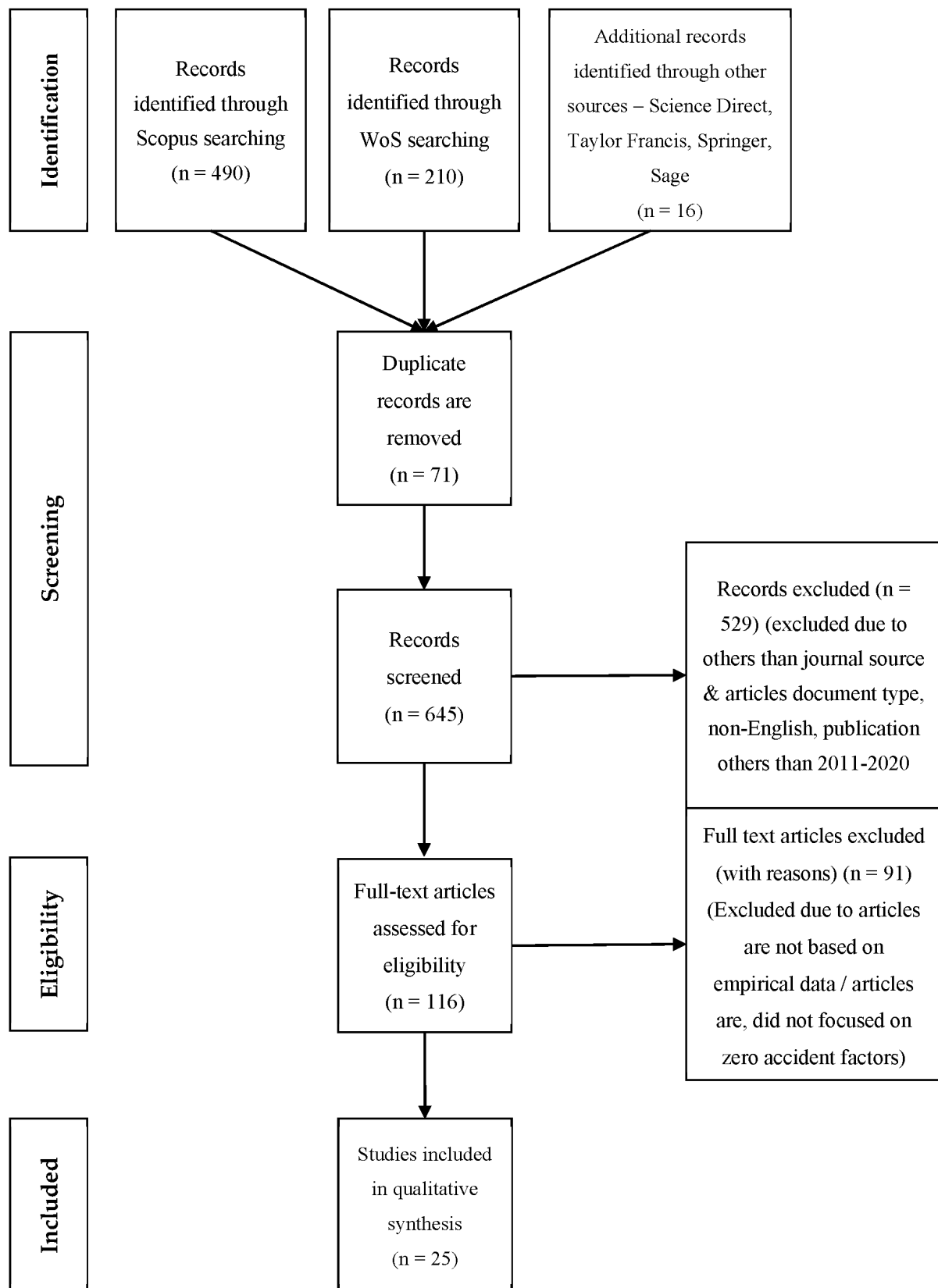


Figure 1. Flow diagram describes the main process based on PRISMA.

2.4. Data Abstraction and Analysis

This study conducted an integrative review, which is one of the review techniques that analyzes and synthesizes various research designs (qualitative, quantitative, and mixed methods) together; this can be resolved by transforming one type into the other—qualitizing quantitative data or quantizing qualitative data [27]. This study chooses to qualitize all the data that was gathered. Based on thematic analysis, the procedures of creating relevant themes and sub-themes were carried out. The initial stage of the theme creation process was data collection. During this stage, the authors carefully examined a set of 18 articles to extract statements or data that fulfilled the research questions. Following that examination, in the second stage, the authors used a coding approach to generate meaningful groupings, based on the nature of the data. In other words, the second stage transformed raw data into usable data by identifying themes, concepts, or ideas for more connected and related data [28,29].

Subsequently, the process has resulted in a total of seven main themes, namely, occupational safety and health management system, organizational leadership, safety culture, training, communication, risk, and legislation. Following that classification, the authors continued the process in each of the produced themes, in which any themes, thoughts, or ideas that have some relationship with one another, within that established theme, will be developed as sub-themes. This additional process resulted in a total of 28 sub-themes. Within the scope of this review, the corresponding author collaborated with other co-authors to create themes based on the results, in order to consistently theme the findings, while documentation was kept throughout the whole data analysis process to record the resulting analysis, thoughts, puzzles, or any idea that might be connected with the interpretation of the data.

The authors also evaluated the outcomes to resolve any discrepancies in the theme creation process; consequently, the authors highlighted any inconsistencies regarding the themes that arose. Finally, the created themes and sub-themes were modified, as needed, to maintain consistency. The expert reviews were conducted by two experts, both of whom are community development experts, to confirm the validity of the themes and sub-themes. The expert review procedure ensured the domain's validity and the clarity, relevance, and appropriateness of each subtheme within its respective themes. Adjustments were made at the authors' discretion, based on the experts' input and suggestions.

3. Results

3.1. The General Findings and Background of the Included Studies in the Review

The analysis produced a total of seven themes and 28 sub-themes related to variables impacting the organization's zero-accident vision. As presented in Table 3, the seven themes comprise the occupational safety and health management system (six sub-themes), organizational leadership (six sub-themes), safety culture (five sub-themes), training (five sub-themes), communication (three sub-themes), risk (two sub-themes), and legislation (two sub-themes). The results offered a thorough analysis of the variables impacting the organization's zero-accident vision.

Table 3. The main themes and the sub-themes.

Author	OSH Management System						Organizational Leadership						Safety Culture						Training				Communication		Risk		Legislation	
	OP	HR	ST	A	I	CI	LS	LI	C	MS	MP	R	B	V	AT	M	SC	R	AP	F	CT	TE	CM	CE	RI	RB	CP	P
[30] (US)							/		/		/	/	/	/	/								/					
[31] (Southern African)					/	/	/	/	/				/	/	/		/					/		/		/	/	
[14] (UK)					/	/	/		/		/		/	/	/			/										
[32] (Southern African)	/	/	/	/		/	/							/	/		/				/				/	/		
[16] (New Zealand)			/	/		/	/		/					/												/	/	
[9] (US)	/					/		/			/													/				
[22] (UK)	/				/				/																			
[33] (US)			/						/				/	/	/						/		/					
[34] (Netherlands)	/	/		/		/	/			/			/	/	/	/		/	/			/	/					/
[35] (US)	/	/							/						/		/											
[36] (Italy)				/					/																			
[13] (Europe)							/		/	/			/						/			/	/	/				
[37] (Europe)									/				/	/	/		/		/				/	/				
[38] (Germany)			/						/		/			/					/		/	/						
[39] (Pakistan)		/																/	/								/	
[40] (Malaysia)		/	/			/	/		/			/		/	/			/					/	/				
[41] (US)		/				/															/	/						
[42] (Singapore)			/			/													/		/							
[21] (South Africa)														/				/		/								
[43] (US)																	/										/	
[6] (UAE)									/														/					
[10] (US)	/	/		/		/	/						/		/	/								/				
[11] (Finland)									/				/	/	/													
[44] (US)											/										/		/					
[45] (Australia)										/		/											/					/

Table 3. Cont.

Author	OSH Management System					Organizational Leadership					Safety Culture					Training				Communication		Risk		Legislation			
	OP	HR	ST	A	I	CI	LS	LI	C	MS	MP	R	B	V	AT	M	SC	R	AP	F	CT	TE	CM	CE	RI	RB	CP
OSH Management System	Organizational Leadership					Safety Culture					Training					Communication				Risk		Legislation					
OP = Organizational Policy	LS = Leadership Style					B = Belief					R = Requirement					CM = Communication Mechanism				RI = Risk Identification		CP = Compliance					
HR = Human Resources	LI = Leadership Integrity					V = Value					AP = Approach					CE = Communication Effectiveness				RB = Risk Barrier		P = Punishment					
ST = Strategy	C = Commitment					AT = Attitude					F = Frequency																
A = Apparatus	MS = Management Support					M = Motivation					CT = Competency																
I = Indicator	MP = Management and Employee Participation					SC = Safety Climate					TE = Training Effectiveness																
CI = Continual Improvement	R = Reward																										

It should be highlighted, in particular, that eight prior research articles focused on the United States occupational safety and health landscape [9,10,30,44], three studies focused on South African occupational safety and the health environment [21,31,32], and two studies for each country or region, namely, the United Kingdom [14,22] and Europe [13,37]. Besides these, a single study was conducted in New Zealand [16], the Netherlands [34], Italy [36], Germany [38], Pakistan [39], Malaysia [40], Singapore [42], UAE [6], Finland [11] and Australia [45] (see Figure 2).

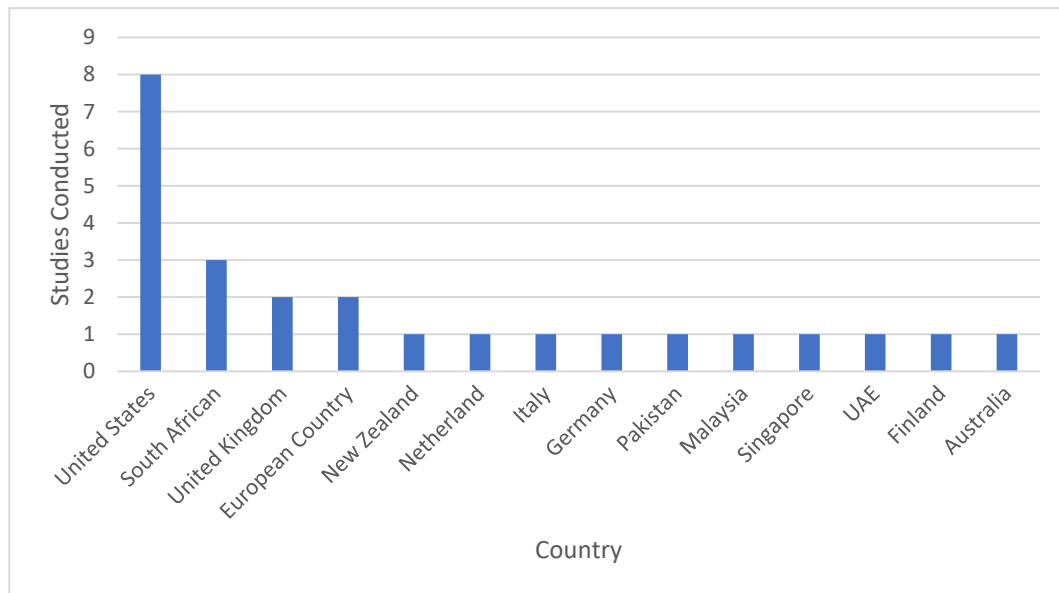


Figure 2. Countries where the studies were conducted.

Regarding the year of publication, two articles were published in 2020 in terms of the current study [33,38], three articles were published in 2019 [9,30,40], and two articles were published in 2018 [10,31]. Before that, four articles had been published in 2017 [13,14,37,39], and four articles in 2016 [21,32,34,44], with another article in 2015 [43]. Earlier than that, five articles were published in 2014 [6,16,22,35,45], another two articles in 2013 [11,42], one article was published in 2012 [36], and one article in 2011 [41] (see Figure 3).

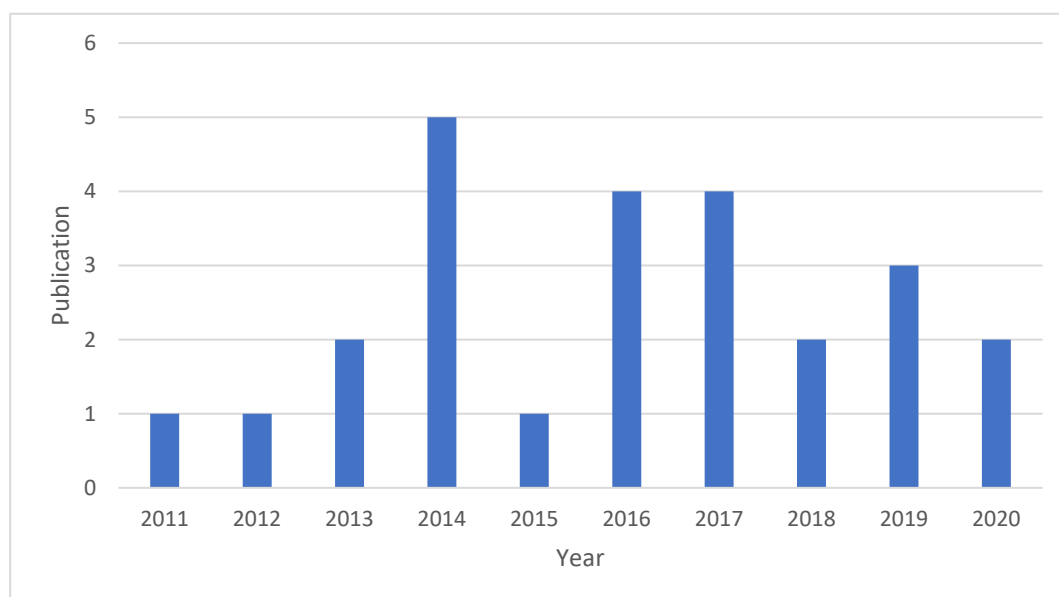


Figure 3. Year of publication.

3.2. Main Findings

The discussion in this section is organized around seven main themes: namely, the occupational safety and health management system, organizational leadership, safety culture, training, communication, risk and legislation, and the developing 28 sub-themes (see Table 3).

3.2.1. The Occupational Safety and Health Management System

The goal of the occupational safety and health management system is to provide a mechanism for assessing and improving performance in the avoidance of workplace incidents and accidents, purposely to achieve the organization's zero-accident vision. It is a rational, step-by-step process for determining what needs to be done, and the best way to accomplish it, monitoring progress toward specified goals, evaluating how effectively this is achieved, and identifying areas for improvement. In this context, 16 prior studies were discovered to focus on the occupational safety and health management system, specifically in their variables, impacting the organization's zero-accident vision strategies. It should be highlighted, in particular, that continual improvement was the most prevalent approach in this subject (10 studies), followed by human resources (7 studies) and organization policy (6 studies), as well as strategy (6 studies). Following that, the papers addressed the topics of the apparatus (5 studies) and indicators (3 studies).

1. Organization Policy (OP)

The organization's top management always has a control component that prevents accidents from occurring, such as an organizational safety policy and goals [10]. According to the organization's management, the company follows a standard safety policy across its whole facility. According to management, the zero-accident vision is not forced on the group from outside but is instead founded on an internal belief. The relevance of safety-related policies and programs is also understandable since such rules and procedures typically give immediate and apparent proof of the management's commitment to safety. Organizational safety policies that are ignored or routinely breached convey the wrong impression about the significance of safety. It is also worth noting that most organizational policies go well beyond enforcement and discipline, including all aspects of the occupational safety and health management system [31,34]. A common understanding of the fundamental aim of achieving zero accidents should be compatible with the diversity of human behavior, which is both anticipated and encouraged. When the path to attaining a vision is established, the persons in charge of executing the relevant processes have the freedom to respond and achieve the desired conclusion. However, with a set path and an unclear destination, the capacity to successfully improvise in the face of unforeseen barriers is reduced. Without further explanation, setting a date for zero-accident vision success can become nonsensical; yet, if the target is to be put in place from the target year onward, or from a previously fixed point to 'achieve zero' by this date, making it incredibly problematic in terms of parameters, measurable criteria and, ultimately, understanding. There are also occasions when an organization must choose between safety and its productivity goals. This framework category addresses those circumstances in which the organization's decision regarding which objective to prioritize contributes to the accident process [9,22,32].

2. Human Resources (HR)

In nearly all types of organizations, conducting work safely demands the availability of resources; top management should provide resources, as well as define priorities for all elements of activity, including safety [34,35]. The management's inability to supply the resources required for job completion results in accidents, errors, or safety violation-producing conditions in the workplace. This is common during budget optimization considerations [32]. To combat this issue, to enhance workplace safety culture, the organization's management should allocate an adequate safety budget, as well as safety incentives, and set up a separate budget for safety compliance [32,40]. Furthermore, rather than being considered as an expense, safety is regarded and should be recognized as an investment

rather than a cost [34,40]. Organizational management that is willing to invest in safety will be able to achieve the zero-accident vision and will show that they truly care about their employees [10]. Investment in safety is repaid in the long term by a reduction in the costs associated with accidental injury and damage, which can be avoided [41].

3. Strategy (S)

Formal safe working practices, such as operating procedures, are required for safe production in any organization, primarily to address situations where there is no standard procedure for how a specific task is to be carried out or where the standard procedures prove insufficient for the safe completion of the task [32]. Creating uniform standards and procedures for an organization can aid in the achievement of a zero-accident vision in delivery systems. Accident and injury rates can be reduced by standardizing care processes, creating process checklists, and eliminating needless variance whenever feasible [30,40]. Standardized procedures guarantee that organizational activities are carried out safely and efficiently and can also translate to a safer and better working environment [42]. Furthermore, a control system must be in place for safe operation in an organization. These control systems must be audited and monitored on a regular basis to verify that they are followed and are adequate to deal with the ever-changing working environment. Their purpose is to identify those circumstances in which a lack of monitoring and auditing of current controls leads to workplace accidents or injuries [16,32].

4. Apparatus (A)

Fit-for-purpose devices are required for safe production, to accommodate those circumstances in which the equipment used is not fit for purpose and thereby impacts the output of the job or the behavior of the employee. Where safety is a major concern, the development of world-class manufacturing facilities and processes should not compromise in the form of unsafe practices, mistakes, or technological failures [10,34,36]. Aside from that, inadequate design and poor maintenance of equipment or of the workplace can directly or indirectly cause accidents or incident issues. A culture of improper equipment maintenance can lead to shortcomings in both the equipment and the workplace [16,32].

5. Indicator (I)

Using a combination of positive performance or lead indicators and outcome or lag indicators can assist organizations in meeting their goals and improving their performance. Positive or lead performance indicators enable an organization to track actions that are intended to have a positive influence on the result or lag performance. Leading indicators are predictive, need active monitoring, and give performance feedback prior to an accident or event. Outcome indicators are essential indicators; however, they typically reflect the outcomes of previous activities. There is frequently a temporal lag between an organization's effort to enhance performance and any quantifiable performance improvement. Potential hazards may be hidden by outcome indicators [31]. Indicator criteria should be chosen that are worth monitoring, that can be measured for various populations, understood by those who need to act, and can serve as a standard for leading indicators and excellent practices [14,22].

6. Continuous Improvement (CI)

Every organization has room for improvement, and safety should be viewed as a continual improvement process [40,41]. The performance of safety and health systems, as well as the accident reporting management systems, should be assessed on a regular basis, in order to identify the fundamental causes of issues and possibilities for improvement [31,34]. When the cycle of improvement model was used in the incident analysis, it resulted in recommendations that were carefully executed, monitored, and institutionalized when they were found to be effective [16]. An organization's management must not only detect the unfavorable occurrences that systems frequently repeat but also publicly discuss these failures, to identify areas for improvement and generate the organizational management

that is required for change. Vulnerability and acceptance of failure contradict many traditional leadership stereotypes, which generally conjure up pictures of extremely focused, stern, emotionless leaders [9,42]. Adopting and implementing excellent practices, as well as learning from the experiences of others within and outside the company, will contribute to safety improvement [14]. A strategic safety management approach for industry players must be developed to enable continuous improvement and the measurement of factors impacting an organization's safety performance, as well as to keep up with the most recent advancements and updates in that area [10,42].

3.2.2. Organizational Leadership

Organizational leadership is a management style in which leaders assist in the establishment of strategic goals for the organization while encouraging employees within the group to accomplish the organization's zero-accident vision. Aside from that, organizational leadership communicates the purpose and vision, creates the strategic plan, and motivates employees to use their skills to achieve goals that are aligned with the strategic plan and, ultimately, the leader's vision. In this area, 20 previous studies focusing on organizational leadership were found, especially in those characteristics affecting the organization's zero-accident vision approaches. It should be noted that the most common sub-theme under this issue was commitment (14 studies), followed by leadership style (9 studies) and management and employee participation (6 studies), as well as reward (3 studies). These were followed by leadership integrity (2 studies) and management support (1 study).

1. Leadership style (LS)

This entailed demonstrating a safety leadership style and establishing a proactive or 'generative' safety culture, in which the significance of safety, particularly in choices and actions, was constantly evident, and where an employee's attitude was focused and dedicated to pursuing a zero-accident vision [13,30,32,40]. This technique is also known as 'demonstrated leadership,' and it is intended to demonstrate to employees that the organization's management not only preaches the safety message but also demonstrates correct conduct. The most basic example is demonstrating excellent safety behavior. This disseminates standards, but failure to set a good example results in the safety message being forgotten [34]. Furthermore, supervisory and senior management behaviors have a direct impact on employee behaviors and, hence, on workplace health and safety. Specific leadership methods affect safe workplace behaviors. Senior managers are the primary influences on an organization's safety culture, and a good safety leadership style is critical to the success of a zero-accident vision [31]. A robust, positive safety culture necessitates active leadership that is capable of influencing safety ideals, attitudes, and beliefs. Leadership must promote the ideas, attitudes, and assumptions that comprise the intended safety culture in the project workforce and thereby influence employee actions [10]. Therefore successful organizational management has maintained the transformational style, setting the ambitious objective of zero accidents at work, and beginning actions to achieve that aim [14,16].

2. Leadership integrity (LI)

The top management's commitment is demonstrated by actions, not just words. Integrity and an excellent example foster faith, trust, and confidence [31]. In a management culture that prioritizes bringing up safety issues and avoiding bad outcomes, the presence of leadership integrity, such as trustworthiness and accountability, is crucial to high dependability [9].

3. Commitment (C)

The zero-accident vision will be successful if the organization makes an unwavering commitment to addressing safety concerns [30]. This element addresses organizational motivation; without a strong commitment to the process from the whole team, these efforts

would be futile. At the same time, sporadic and uneven management support reflects a lack of leadership commitment across the organization, leading to an unattainable zero-accident objective [16,31,40]. In this context, the zero-accident vision might be useful in spreading the notion that all accidents can and should be avoided, and that this is a vision that will require the commitment (active support) and participation of all key parties. Unsurprisingly, management commitment will become a critical component for effective risk-control measures [11]. Developing safety must demand a commitment from the whole organization and is most likely the most visible feature of the safety environment, in terms of molding employee attitudes regarding safety inside their organization [35,36]. Without specific suggested safety intervention techniques, management commitment is vital in handling safety within the organization, as is highlighting that organizational safety commitment is (and has to be) more than simply words and paperwork. Embedding the zero-accident vision commitment in an organization is viewed as critical, as is making it obvious to all members of the organization that commitment to safety is not a gimmick, but that it is here to stay, even during times of output pressure, change, or difficulty [13,38]. The path to a zero-accident vision starts with a commitment to providing the right support to the employee at the right time, every time. It might also build commitment in the future by placing the objective to a moment in time when reality has altered enough that zero accidents are achievable, if not the norm [6,22,33]. This fundamental idea of a zero-accident vision will contain a strong aim to enhance safety and build safety excellence. The zero-accident vision will be viewed as a safety commitment strategy, similar to the commitment strategies established in human resources management. Such commitment methods are designed specifically as an alternative to hierarchical and bureaucratic restrictions, and they have a good track record in achieving high performance through high commitments. Simultaneously, organizations and their employees perceive the zero-accident vision as a journey motivated by real long-term commitment [14,37].

4. Management support (MS)

The role of genuine top management mandates and support for strong safety cultures, such as the ability to halt production, delivers an environment in which employees can be honest about failures as a way to learn from their mistakes [13]. Participatory improvement procedures are frequently common practice: leaders ask questions rather than providing answers, they meet with employees to debate and promote their involvement, and they challenge people to think for themselves. Furthermore, leaders work hard to foster trust and ensure an open environment in which to discuss and resolve safety issues.

5. Management and employee participation (MP)

The value of a team approach in management and employee engagement in risk identification and accident prevention cannot be overstated. Because comments are expressed without fear of hierarchical retaliation, members are more candid with their remarks. All employees are invited to comment on each plan and, because comments are made without fear of hierarchical repercussions, employees are more candid and voice real concerns, enabling problem-solving approaches to accomplish the desired zero-accident vision [13]. Employees are empowered to provide ideas since they are a part of the solution, and safety is often co-created by specialists and all employees of an organization. Employee engagement has been prioritized in training development as a critical component in the effective adoption of contemporary organizational management in occupational safety and health management systems [9,14,38]. At the same time, some organizational management teams have stated that they respect employees who criticize policies that appear to be impractical since this allows the organization's management to re-explain particular policies and either gain support or make the required modifications. For example, they will visit the workplace to deliver the safety message, oversee job safety, and engage in safety conversations with employees. The organization's management displays its participation in safety by undertaking these duties, rather than outsourcing them [34]. Aside from these actions, the organizational management may assign individual duties to employees who

have been trained to become prudent subjects who must exercise some legal responsibility, in order to ensure that they are involved in providing suggestions, particularly those linked to accident prevention [45].

6. Reward (R)

One of the components that may be used to assess safety culture is a reward or award [45]. Employee reward schemes visibly display the achievement of zero-accident vision quality; they are not only encouraged (and even rewarded) to report failures but they are also given the ability to do so swiftly [30,44].

3.2.3. Safety Culture

Safety culture is undergoing a revolution at the moment, and this is having a significant impact on workplace injury and employee wellbeing. A strong safety culture encourages more than just safety; a positive safety culture benefits employees, particularly in terms of accident prevention. Furthermore, safety culture is the product of individual and group activities directed toward an organization's safety and health policy. In order to create a safety culture, all levels of management are held to a high standard, in terms of how they interact with employees on a daily basis. In total, 15 studies have been conducted on this topic, which has resulted in the formation of five sub-themes under the umbrella of the safety culture theme, including attitude (14 studies), belief (8 studies), value (8 studies), the safety climate (4 studies), and motivation (2 studies).

1. Belief (B)

The term "safety culture" refers to a collection of ideas, perceptions, and attitudes that reflect the emphasis placed by employees in the organization on safety, both for themselves and for others. The safety culture is created and maintained, mostly via unconscious socialization processes. When it comes to collaborative action, trust is essential for safety [11]. Furthermore, employees are regarded as persons who have an intrinsic desire to work safely [34]. An action is performed by the organization's management in response to employee recommendations; this is seen as aiding in the development of trust between workers and leaders. The employees recognize that their ideas and proposals are valued and that the firm cares about them [13]. Employees, for example, may feel they should not fear retaliation for reporting failures and that reporting would result in a positive change toward a healthy safety culture [30,33]. The fundamental idea of the zero-accident vision is founded on the notion that it is feasible to eliminate all employee accidents. Any other objective indicates that accidents are to be expected and tolerated. Understanding the essence of the zero-accident vision assists leaders in fully accepting the zero-accident vision, which is the first fundamental criterion necessary to accomplish that goal. Leaders will have the appropriate motivation to care about their employees if they grasp and adopt this goal [10,37]. In a nutshell, a safety culture entails not only the creation of that culture but also the avoidance of accidents and the promotion of safety [14].

2. Value (V)

The concept of safety culture implies an organization's common values and beliefs regarding safety, as well as a control structure that produces a specific behavioral norm. As a result, everyone in the workplace must recognize the importance of safety and health and constantly remind one another of safe practices [31,46]. Morals and values are also important components of a safety culture. Differences in perception among stakeholders concerning moral concerns may be a risk factor, as they influence individual attitudes that are not always predictable or understandable [11,14,33]. Ownership is defined as a demonstration of employee responsibility and engagement in the organization, which is intended to increase the employees' desire to proactively collaborate with changes. Employee ownership, like the issue of safety culture, is said not only to contribute to safety but also to generate other benefits: ownership increases not only safety but also the infrastructure and the employee's well-being [34]. The innovative and widespread

viewpoint of safety culture is the exchange of inspiration and best practice with other zero-accident vision-committed organizations that assist each other in achieving safety excellence through time; therefore, the usage of networks is critical [30,37].

3. Attitude (AT)

Every person in an organization should understand and act on their duty to establish a safety culture, as well as see safety as an ethical responsibility [30,37]. A behavioral environment is defined as a set of circumstances in which dangerous behavior is either tolerated or is not frowned upon [16,32]. Safe behavior is the norm, while safety management is rational but is also based on ethics, and a good safety atmosphere encourages employees to engage in safer activities [11,14,35]. Unsafe behaviors play a role in nearly all accident events [31]. It may also be claimed that risky boardroom practices, such as making incorrect judgments on safety-related problems, could be the source of an incident. Employee attitude and behavior are seen as the most important direct reasons for a lack of safety by managers throughout the organization. As a result, preventative programs place a heavy emphasis on employee attitude and behavior. Despite the lack of defined operationalization, attitude and behavior are aimed at increasing risk awareness and employee ownership. Employees must become more aware of the risks they take since greater risk-awareness will allow them to 'sense' when risks are being incurred [34]. Technical safety intervention has a direct impact on the safety behavior of employees. Safety measures, including technical intervention, have a beneficial impact on safety behavior. Workplace safety inspections, personal protective equipment programs, the availability and maintenance of safety equipment, safe work practices, and safety permits are the most essential safety measures for controlling workers' safety behavior [38]. A good safety program, according to the majority of safety professionals, is an endeavor that will alter behavior and encourage safe conduct. Safety conduct entails both safety involvement and safety observance. Individual attitudes and worries about safety, the readiness to execute any activity properly, and a well-established safety mentality allow employees to remain constantly cautious [40]. It is difficult to influence employees' attitudes and beliefs via direct conflict, but with the management's demonstrating a safe example, employees may begin to think constantly about safety. This technique has resulted in the creation of a safety behavior strategy [40]. Only those who fully grasp and accept the notion may change their safety values and, hence, their conduct [10]. The pursuit of a zero-accident vision might be aided by connecting the execution of specific behaviors to the attainment of specified safety and health outcomes because management can encourage their employees to behave in ways that assist the organization to achieve its goals [21].

4. Motivation (M)

Yet another essential function of leadership is to establish an organizational culture that guides behavior and motivates employees. One of a leader's key responsibilities is to build, develop, motivate, sustain, and manage the culture of an organization. The development of a desirable organizational culture necessitates leadership having a vision of the intended culture and being actively involved in conveying and motivating that goal to the organization's employees [10,34].

5. Safety Climate (SC)

A safety climate is a subset of safety culture, concerned with the values and attitudes of employees at all levels [31]. Even if an organization has an excellent safety culture, the safety climate or "mood" may deteriorate if an accident or injury occurs. Similarly, the safety climate is defined as a regulated work environment in which the quality of the working environment contributes to preventing any accidents or injuries from occurring [32]. The safety climate is also substantially connected to both safety compliance and safety involvement or employee actions, as expected [35]. A zero-accident vision comes from shared principles and behaviors, such as alertness and shared knowledge, a questioning mindset, and a desire to make sense of safety procedures and equipment [37].

3.2.4. Training

Safety training refers to a collection of activities designed to provide people with the information and skills that they need to do their jobs safely and efficiently. Safety training assists employees in recognizing and resolving safety issues. Employees benefit from training that gives them a clear grasp of the authorized procedures and safety requirements. Safety training is essential for employees to have a strong understanding of the safety subjects related to their professions. If safety is not made explicitly relevant to employees' jobs, they will be at greater risk of injury, illness, or even death. As previously stated, 15 studies were discovered that focused on training linked to the variables impacting the organization's zero accident vision. Nonetheless, the analysis of this topic resulted in a total of five sub-themes, including requirements, approach, and competency, each of which comprises 5 studies, training efficacy (5 studies), and frequency (3 studies).

1. Requirements (R)

One of the major factors in accident occurrence is an insufficient provision of safety training to the employee [39]. Safety training is the most critical factor to consider when evaluating safety culture indicators [40]. A major lesson gained on the path to accomplishing the zero-accident vision in this context is that training is crucial in overcoming difficulties, as well as in making employees think about safety at an earlier stage of their work, then creating strategies to minimize the risk associated with these activities [21]. At the same time, an accident may be regarded as an opportunity for learning. Recognizing trends in accidents may aid in determining whether processes need to be changed to keep both people and property safe. Sharing knowledge and findings aids in the prevention of future mishaps and reduces the hazards to others [14]. Another expression of resources that should be considered by organizational management is an investment in employee training and education [34]. However, training all levels of employees is essential to the performance of an organization. A more feasible future alternative to traditional "training" is outlined and offered, in which employees would be empowered with information, skills, and talents, rather than just "taught" to recognize and avoid hazards [43].

2. Approach (AP)

An organization that is committed to achieving a zero-accident vision will look for new methods to enhance the safety training approach, as well as work to create a learning-driven safety culture [37,38]. Safety reports and learning from an accident are regarded as learning opportunities, providing the possibility of avoiding such accidents occurring, as well as increasing the organization's safety level [34]. Simultaneously, skills may be enhanced through learning by doing, which represents the premise that we learn an idea when we actually "perform" the associated action [13]. An organization's management can also promote employee education through safety awareness initiatives and safety incentives [39]. As a result, continuing education allows employees to maintain high professional standards and absorb up-to-date information, not only in terms of skills and knowledge but also in terms of service quality and safety. This technique instills and maintains a high degree of professionalism in all employees [42].

3. Frequency (F)

The function of training in changing an employee's behavior is essential in this context since it has been demonstrated that longer periods of training are associated with lower accident rates. If the duration is recognized as a metric of training extent, it is reasonable to anticipate that greater levels of training might lead to improvements in an organization's safety and health performance [21].

4. Competency (CT)

The competency of the individual assigned to a certain task is critical to its success or failure. The training provided to an employee is intended not only to help the employee carry out the following task safely but also to equip an employee who has not yet been

found competent before being assigned tasks [32]. Employees can overcome hesitancy and shyness by speaking their ideas out loud, expressing their thoughts, and helping them to understand the trainers' requirements, both theoretical and practical during the course [38]. It is stated in the context of self-directed learning that the challenge for those wishing to enhance knowledge standards and compliance with safety requirements within an industry is to develop a culture that values training, regardless of pressure from organizational management [41]. However, once new technologies are invented, new risks and issues will emerge, necessitating the organizational management's commitment to internal and external expertise, to assist in resolving problems. These experts may not be within the organization or may not be individuals at the top levels of leadership [33]. As a result, the employee should be trained to be alert to minor operational deviations and interruptions, to guarantee that unexpected occurrences are reported, examined, and eventually used to prevent unique and emerging system faults from escalating into catastrophic accidents [44]. The organization's management should make it compulsory for employees to continually maintain high levels of competency in their operations [42].

5. Training effectiveness (TE)

Establishing a systematic training strategy that is capable of meeting various language and education demands is a critical component in achieving success [31]. A good system is more than just a paper chase. It is about ensuring that the necessary adjustments are made to increase safety. The utilization of local "best practices" and training that brings together organization management in groups have been extremely effective in producing ideas incorporating simple and low-cost changes that link productivity with a safer and better workplace. This training is effective when it focuses on a multidimensional approach based on local practice; positive accomplishments and viable solutions that are locally accessible, including low-cost alternatives; and learning-by-doing, which includes managers directly through group work [38]. Many of the poor outcomes appear to be related to either the caliber of the trainer providing the course or to learners' assessments of the competency of their teachers. An employee who is more confident in the competency of their trainers and is more comfortable in appreciating the teaching aids made accessible to them will be more compliant with the processes taught in courses. It is critical to ensure that a trainer is skilled and persuasive, as well as that material is delivered in an interesting way [13,41]. Hence, training effectiveness is primarily concerned with learning from accidents and other occurrences to enhance safety, and so represents the aim of zero-accident inspiration [34].

3.2.5. Communication

Communication is essential for maintaining a healthy, safe, and productive workplace. It is required to ensure that roles and responsibilities are understood. The primary objective of health and safety communication is to give useful, relevant, and accurate information to particular stakeholders, in plain and comprehensible language. This can elevate the knowledge and understanding of health and safety management, as well as raise specific risk concerns, in order to attain the organization's zero-accident vision. In this regard, 11 studies have concentrated on the element of communication, resulting in the formation of two sub-themes under the main theme, namely, the communication mechanism and communication effectiveness, each with two studies.

1. Communication mechanism (CM)

Communication is essential since it gives employees feedback on how they are performing and has all the characteristics of successful feedback. It is precise and relevant; it offers a feeling of direction and illuminates the current state of collective growth. The information is openly shared, and it ties each employee to the organization's objective of zero accidents [6,33]. Verbal communication is often used to spread the safety message. Leaders think that it is critical to explain or discuss the necessity for rules that are unclear to employees, and they value knowing why certain regulations occasionally face opposition. Employees are not only instructed about safety standards but are also reminded of them

before the commencement of a task [34]. The communication mechanism served as a key means for top management to convey the organization's zero-accident vision and demonstrate their dedication to the inspirational aim. It is intended to encourage informal communication and bottom-up efforts, in addition to being part of the official organizational communication. The necessity of consistent and up-to-date communication and effective tools in putting the plans into action was emphasized. The zero-accident vision uses a range of media and methods, including safety briefings, newsletters, information displays, films, safety days and events, monthly safety themes, and mobile applications [13,37]. In addition, through monthly lessons learned and documented, the organization may convey summaries of all accidents and process failures (including all first-aid and near-miss events) to its employees [44]. A poor safety and health culture, on the other hand, may lead to weaknesses because difficulties for employees working at the interface may be caused by poor communication [40].

2. Communication Effectiveness (CE)

Effective communication entails more than just providing one-way feedback [37]. Morning meetings, toolbox discussions, safety walks, and workshops are believed to generate conversations and contribute to a sense of openness and trust within the organization. Effective communication among employees is crucial to executing safety procedures. As a result, the organization should embrace safety measures, such as empowering two-way communication with employees, particularly if they are foreigners [40]. This entails developing a safety information system that gathers, analyses, and disseminates data from accidents and near misses, as well as via regular proactive checks on the system's vital signs [31]. Furthermore, organizational management may successfully convey the zero-accident vision to their employees, to establish an effective safety culture throughout the organization [10]. As a result, techniques and resources such as leading indicators and flexible communication means are required to enable the efficient exchange of information among individuals [37]. Accidents and unsafe conditions are supposed to be routinely reported, resulting in early problem resolution before employees are harmed, and results are presumed to be communicated on a regular basis [30]. However, when combined with frequent interaction with the safety culture, the employees' reliability and positive results should rise rather than fall [9].

3.2.6. Risk

Every workplace environment has hazards that could cause injuries or ill-health. However, risk assessments can drastically reduce the likelihood of work-related accidents and ill-health. Raising awareness about hazards and the risks to which the workforce is exposed can help employers identify ways to minimize health and safety risks. The risks concerning occupational safety and health always refer to a risk being the likelihood that a person may be harmed or suffer adverse health effects if exposed to a hazard. Three previous studies that focused on risk were discovered in this field, particularly in terms of impacting the organization's zero-accident vision strategies. Interestingly, the analysis for this issue produced two sub-themes: risk identification (1 study) and the risk barrier (2 studies).

1. Risk identification (RI)

In general, controls can only protect employees against the specific risks for which they were created. As a result, the framework's risk identification depicts circumstances in which there are no organizational controls for a danger, owing to a lack of identification. This may also be used in cases where the controls put in place were unable to contain the intensity of the event when it happened. The danger was recognized in this case; however, there was a lack of knowledge of its magnitude and/or method of release [32].

2. Risk barrier (RB)

Risk barriers are any mechanism (physical or non-physical) put in place to avoid, regulate, or reduce accidents [32]. The requirement for risk barriers in an organization

stems from the fact that the nature of some organizational operations makes it impossible to eliminate all hazards by design. In such cases, employees' safety is maintained by erecting a barrier between them and the hazard. This indicates that the danger presented by a hazard reaches a target only when there is no risk barrier in place to prevent it, or when the barriers that are in place are ineffective. The nature of the risk barriers in place also reveals much about the nature of the organization and the types of unsafe acts that are likely to occur in such an organization. Where barrier failure is likely, risk barriers should be employed in an approach that includes preventative barriers intended to keep the hazard under control, with appropriate reinforcement or redundancy. Monitoring barriers, on the other hand, are meant to monitor the status of the risk, to determine if it is different from what was predicted and if the barriers are as effective as necessary. Moreover, first-response barriers are designed to halt an undesired occurrence in its early phases, before any serious consequences arise. Furthermore, amelioration barriers are designed to reduce the impact of a significant unwanted occurrence [31]. Personal protective equipment, by the way, is often considered to be a means of hazard reduction or attenuation in terms of occupational safety and health. Personal protective equipment is viewed solely as a way of separating the employee from the various hazard manifestations identified [16].

3.2.7. Legislation

The goals of occupational safety and health legislation are to protect employees' safety, health, and welfare, as well as to protect others, primarily the general public, who may be exposed to hazards from job activities. Legislation should be an essential component of any organization of any size. Furthermore, compliance with safety and health regulations minimizes the risk of prosecution, penalties, and reputational harm, increasing the chance of positive company performance. As previously mentioned, a total of six studies focused on an organization's zero-accident vision related to legislation. The present study has managed to further categorize this theme into two sub-themes, as follows: (a) compliance (5 studies) and (b) punishment (1 study).

1. Compliance (CP)

An organization's overarching legislation and continuing regulatory compliance program are evident implementations of the hazard mitigation hierarchy of the control approach [16]. Regulations establish certain fundamental behaviors and activities [43]. However, the quantity and intricacy of rules grow significantly over time. In many situations, more regulation specificity is introduced to address previous experience, which is not always undesirable. However, in many situations, the regulations become unduly prescriptive, in an attempt to identify every event and combination of events that may result in a poor safety outcome. While it is acknowledged that regulation is required for excellent safety, compliance with laws and a regulatory system does not automatically result in an outstanding safety record. This dedication, however, must go beyond meeting statutory standards to achieve improvements in safety management [31]. Hence, the scale and variety of regulatory compliance have increased in many companies [45]. Furthermore, government authorities should take the lead in enforcing stringent and uniform industry safety rules [44]. Rather than depending on a massive enforcement team that is difficult and expensive to maintain, as well as a deep knowledge of the task or technology, regulators may have moved to make the industries perform the work [45].

2. Punishment (P)

While punishment has no formal role in the organization, certain safety-oriented actions, such as transferring someone to a different duty, may be perceived as punishment. Aside from that, the organizational management should actively employ disciplinary measures in the event of an accident [34].

4. Discussion

This study aimed to conduct a comprehensive review of the available literature on an organization's impact variables on the zero-accident vision. The zero-accident vision is a concept centered on preventing all accidents, and it is an organizational goal intended to create a safe workplace, to achieve excellence in occupational safety and health. A thorough search of two databases revealed 25 articles relating to an organization's zero-accident vision. The findings show that organizations have engaged in a wide range of impact variables. Seven themes and 28 sub-themes emerged from the scope of this review. The occupational safety and health management system, organizational leadership, safety culture, and training are the four main variables impacting an organization's zero-accident vision, while other impact variables are communication, risk, and legislation.

Occupational safety and health (OSH) management is a collection of interconnected or interacting elements that are used to develop and implement OSH policies and objectives, as well as to accomplish these objectives. Occupational safety and health management is a component of an organization's overall management system that is used to manage occupational safety and health risks [47]. An established safety policy will serve as a stimulus for both the organization's management and its employees to carry out work activities in a safe and healthy manner [46]. The formulation of safety policy in an organization is an expression of the organization's management's commitment to supporting the vision of zero accidents, and it must be established in accordance with the organization's safety planning [48]. However, unsafe acts and/or unsafe conditions are always the consequence of underlying failures, which are indicators of the failure of safety policy or oversight, which is the primary cause of the majority of accidents [49,50]. In 2018, the number of dangerous occurrences reported by the UK Health & Safety Executive increased by 19% compared to 2017, when only 6467 incidents were registered [51]. In addition, the distribution of resources, as well as a particular and consistent budget allocation for implementing safety measures, shows an organization's management objectives in ensuring that safety planning goals are met without difficulty [48]. Organizational security budget planning allows a targeted future picture to be obtained by the organizational management in prioritizing the safety budget evaluation function because any inaccurate information that is submitted will give unfavorable results [52]. Procedures for monitoring and assessing key aspects of zero-accident vision accomplishment should be developed and integrated into previously available measurement techniques. A systematic management system can standardize work processes and decrease the hazards connected with process operations and equipment maintenance. A comparison score should be developed between the actual progress of the activity and the benchmarks that have been established, to determine whether there are activities that are overdue or are late in the planned schedule, to avoid tasks being performed in a rush so that safety procedures are ignored [53]. The organization management should use the appropriate apparatus to monitor and evaluate the dependability and usefulness of data, in a range of applications [54]. Equipment and machinery that are not in good working order, as well as technical inefficiency in the organization's equipment, can all contribute to the incidence of workplace accidents. The application and assessment of the leading indicators of organizational safety performance give other stakeholders realistic and important scores for advancing the vision of zero accidents [55]. The organizational management should consider investing in proactive leading indicator equipment, equipped with the latest technology, to detect and manage safety issues before they become incidents or cause harm [56]. For the information integration process to function successfully, indications that are relevant and acceptable for safety performance evaluation must be examined. Furthermore, the causes of problems and solutions for initiatives to minimize the frequency of workplace accidents may be provided using regularly evaluated data, thus emphasizing the importance of continuous improvement [57]. The element of continuous improvement should concentrate on the factors of failure encountered by organizational management so that safety performance evaluation tools can operate consistently and without interruption [58].

Employees desire encouragement from organizational management to embrace organizational change, and this support should be delivered in a manner consistent with a successful leadership style [59]. Thus, leadership, personality, and integrity cannot be neglected when organizational management seeks to improve employee performance and behavior [60]. A leader who is unable to execute his obligations with integrity will be less respected and will not receive a sufficient reward. A leader with a high degree of integrity will be empowered to be more vocal and confident in deciding the path of organizational management, particularly in the process of achieving the vision of zero accidents [61]. The organizational management's commitment to attaining safety planning goals is highly impacted by the spirit of cooperation in the organization [62]. Everyone, regardless of rank or position, is responsible for preventing accidents. Moreover, an organization's commitment to a zero-accident vision will lead to the development of new criteria, as well as an emphasis on process elements rather than statistics alone [37]. Meanwhile, organizational management support may be observed in those actions promoting workplace safety aspects that are conveyed openly, rather than via words alone [62,63]. If it can provide positive returns in the form of safety assurance, organizational management support is crucial in building a conducive work environment, to guarantee that efficient communication systems may be implemented without impediment [64,65]. The participation of organizational management in safety programs offers useful indications for altering current employees' behavior toward the adoption of a zero-accident vision [66]. As a consequence of consultation between the two parties, the collaborative participation of organizational management and employees in establishing a zero-accident vision allows the stated goals to be readily accomplished [67]. Aside from that, using rewards may improve employee loyalty to the organization. For example, employees who receive regular praise for doing something correctly will have a stronger sense of loyalty than employees who do not receive praise. This can be achieved by giving staff bonuses, remuneration, benefits, incentives, or rewards [68,69].

The trust placed in employees by organizational management helps to maintain team spirit and the production of excellent work while ignoring the implementation of the safety culture [70]. Positive moral ideals should underpin belief and truthfulness. Furthermore, belief indicates employee knowledge of and intolerance for high-risk routine activities in any organizational management decision-making process for high-risk routine tasks [71]. Employees' actions should be based on the idea that they are safe and that actions have been agreed upon by the organization's management as a normal practice in building a culture of safety. Additionally, root cause analysis should demonstrate actual findings in any circumstance to acquire the trust of all stakeholders; the organization's management is accountable for executing improvement actions, based on recommendations made and not being bound over by third-party directives [72]. The use of values in the establishment of a safety culture in an organization needs the endorsement of organizational management. The fundamental aim of organizational management should be a spirit of collaboration and the desire to decrease the number of accidents, and it should be founded on safety culture principles. Furthermore, an organization's resilience regarding safety cultural values may be observed in its capacity to sustain ongoing safety practices while attempting to adapt to impending changes, pressures, or obstacles [73]. Employee decisions and responses to difficulties, or safety concerns that emerge while performing everyday activities, are influenced by individual attitudes in the workplace. Negative attitudes can drive employees to be negligent, to take things lightly, to take shortcuts, and even to lose concentration at work. Negative attitudes toward safety, in particular, can result in unsafe conduct that will lead to workplace accidents [74,75]. Motivation is a decisive element in transforming the vision of zero accidents into a type of action implemented by the organization's management. Motivation is essential to success in organizational management because it acts as a catalyst for inspiration, proper behavior, creativity, optimism, and self-confidence [76–78]. Furthermore, the safety climate is not only essential for assessing the organization's safety performance but it can also enhance the safety culture among employees. A good and

supportive safety atmosphere should affect the extent to which employees believe safety is essential in their business. Employee support and involvement as a component of the safety climate are compatible with the notion that a safety culture is more likely to exist in an organization that generally supports and appreciates its employees, and where there is an open and effective flow of information [79].

Employees who do not receive appropriate training do not acquire adequate information and abilities, which leads to low self-esteem, a lack of enthusiasm, and a bad attitude while performing routine tasks [80]. Training requirements affect skills, knowledge, productivity, and work performance, as well as affecting methods to address employee deficiencies [81]. At the same time, a balanced and impartial accident investigation may offer organizations the space and opportunity to learn something new [81]. The frequency of safety training offers organizational management assistance in structural and cost-effective training management, as well as legal compliance. The frequency of safety training is periodic and continuous, and also requires a specific schedule and time interval [82,83]. Regular safety training should be provided to ensure that knowledge and skills are kept up to speed with the newest technology and current advancements. Simultaneously, safety training should be continuous and not be limited to a single place or time. Incompetent employees in the organization will make mistakes in regular activities, resulting in decreased organizational output [84]. Employees that are incompetent lack knowledge, self-awareness, and individual abilities, and have issues with everyday conduct. The primary skills that employees must acquire via the training given are those linked to identifying risks and hazards in the workplace. Hazards that can be recognized early on may be addressed and eliminated promptly, contributing to the attainment of the zero-accident objective [85]. Employees with a lack of particular talents have fewer career options and are always agitated since they must fight for the desired job. Low-skilled employees are more likely to make blunders and errors when performing regular activities, failing to deliver quality products [86]. Organizational management that recognizes the value of employee human capital will provide regular and systematic safety training. An orderly timetable may be established on a daily, weekly, or monthly basis to record various pieces of training information, such as the rotation of workers who have attended training [87,88].

Most studies depend on electronic keyword searches since this approach is widely accepted as the best strategy for conducting a systematic review; nevertheless, various supplementary strategies may be used to supplement the researchers' search efforts [89,90]. Citation tracking is one approach that can be explored [91]. It refers to attempts to discover similar publications, based on those papers that cite the work under consideration. This approach enables the researcher to pursue research leads, both forward and backward in time. Moreover, the search results can be enhanced since the technique may discover new publications that cannot be identified by ordinary database searches owing to a search strategy's or bibliographic record's vocabulary constraints [91].

Another approach is reference searching, which involves looking for other articles by analyzing the reference lists of the selected articles. In situations where researchers are having difficulty identifying similar material, reviewing reference lists might potentially minimize the chance of missing relevant information [92]. Snowballing is another approach that, like citation tracking and reference searching, is separated into two types: forward snowballing and backward snowballing. It should be emphasized that the primary downside of citation tracking, reference searching, and the snowballing method is that the search can get out of hand, retrieving more articles than can be manually appraised [90]. Another method of searching that should be explored is contacting experts, especially if the specialty literature is not well defined [93].

On another note, the variables impacting an organization's zero-accident vision are the subject of this study. In the identification process, however, the keyword "organization" or something similar is not included in the search string. This is due to the fact that when the keyword "organization" is used, the number of articles discovered is quite low. This circumstance demonstrates that a search string containing the keyword "organization"

does not appear to give comprehensive and holistic information on articles concerning a zero-accident vision in organizations. There is a chance that the relevant article will not be identified via electronic keyword searches. As a result, the keyword “organization” is deleted from the previous key string, and the new key string is broader and focuses solely on zero-accident vision and impact variables. The articles retrieved using the revised key strings outnumbered those obtained using the prior key strings, persuading the authors to continue the screening and eligibility process.

5. Conclusions

This systematic review emphasized the significance of variables impacting an organization’s zero-accident vision. Within the organization context, the zero-accident vision appears to be a polarizing debate in the occupational safety and health environment. While many organizations and policymakers have efficiently instituted a zero-accident vision, along with occupational safety and health strategies and programs, several distinguished and experienced occupational safety and health scholars from a variety of backgrounds argue against its use and success in both theory and practice. It should be acknowledged that the United States accounted for the greatest number of studies, with eight being conducted in an occupational safety and health environment, followed by three studies on the South African occupational safety and health scene and two studies for other countries, namely, the United Kingdom and Europe. Besides that finding, one study each was conducted in New Zealand, the Netherlands, Italy, Germany, Pakistan, Malaysia, Singapore, UAE, Finland, and Australia. In terms of publishing year, 2014 had the most articles published, with five, followed by 2016 and 2017, each with four. Following that, the year 2019 saw the publication of three articles. This was followed by 2013, 2018, and 2020, each of which had two articles published. In 2011, 2012, and 2015, one article was published each year.

To answer the main research question, the authors identified seven impact variables regarding an organization’s zero-accident vision patterns, based on systematic reviews, including the occupational safety and health management system, organizational leadership, safety culture, training, communication, risk, and legislation. These impacting variables were then subdivided into 28 sub-themes. The most discussed subject areas have been the occupational safety and health management system and organizational leadership themes, each of which may be subdivided into six sub-themes. The sub-themes of occupational safety and health management systems include organizational policy, human resources, strategy, apparatus, indicator, and continual improvement, while the topic of organizational leadership may be further classified into leadership style, leadership integrity, commitment, management support, management and employee participation, and reward. Furthermore, the safety culture and training themes may be categorized into five sub-themes for each theme, namely: belief; value; attitude; motivation and safety climate for the safety culture theme, and requirement; approach; frequency; competency and training effectiveness for the training theme. Each of the three themes, communication, risk, and legislation, includes two sub-themes. The communication sub-theme comprises the communication mechanism and communication effectiveness; risk identification and the risk barrier comprise the risk theme; compliance and punishment comprise the legislation theme. This review makes numerous recommendations for further research. First, more qualitative studies are required since they provide in-depth analysis and extensive explanations of the variables impacting an organization’s zero-accident vision, such as behavior-based safety, which may serve as one of the workplace’s safety principles. Secondly, a specific and standard systematic review method should be used to lead research synthesis, in the frame of reference of variables impacting the organization’s zero-accident vision, as well as to conduct complementary searching techniques, such as citation tracking, reference searching, snowballing, and contacting experts.

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