National Safety Council

FULL REPORT

The New Value of Safety and Health in a Changing World

Foundation

verdantix

Contents

Foreword . . . 3

Executive Summary . . . 5

Background and Context . . . 10

Methodology and Content Assets . . . 10

The Evolving Meaning of Environment, Health and Safety . . . 12

Frameworks and Modern Environment, Health and Safety Alignment . . . 17

Framework Assessment Summary . . . 20

Introduction to the New Value of Safety Theme Profiles . . . 22

The New Value of Safety: Theme Profile Summary . . . 23

Human and Organizational Performance . . . 24

Total Worker Health . . . 25

Serious Injuries, Illnesses and Fatalities . . . 26

Mental Health . . . 30

Psychological Safety . . . 34

Environment, Social and Governance . . . 38

Diversity, Equity and Inclusion . . . 39

Environment and Sustainability . . . 43

Ethics and Governance . . . 47

Recommendations and Conclusion . . . 50

Appendix 1: Methodology . . . 52

Quantitative Survey . . . 54

Qualitative Survey . . . 55

Appendix 2: Glossary . . . 56

Appendix 3: References . . . 59

Acknowledgements . . . 61

Foreword

What does it mean to be safe? This simple question has spawned decades of debate, and even now discussion continues in circles both academically and practically about the true meaning of the word and the best way to manifest it in the field. That this conversation continues to evolve – even occasionally flaring into passionate arguments about human nature – may be difficult for some to believe. Yet we know over time, societal and business perspectives shift, sometimes more radically and rapidly than others. As they do, the models we once used to understand, evaluate and take action on these issues become outdated – even actively unhelpful – in affecting change in the world and the workplace.

Such is the case with safety today. In the past ten years alone, the world has seen a rapid advancement in technologies, faced crises that have imperiled the health and wellbeing of the global population and economy, and gone through significant demographic and cultural change. In the midst of this, our definitions of safety and health could not and did not remain static. Even absent of this level of external turmoil, the definition of safety had already been transforming in the business community, with the emergence of new thinking around leading indicators; decision-making; neuroscience; serious injury, illness and fatality prevention (SIIF); and human and organizational performance (HOP). Taken together, these elements form the basis of "The New View" of safety and health, sometimes called "Safety 2.0."

The past five years have seen not only a continuation of this "old/new" debate, with numerous points of view and practices developing in the market and research arenas, but a massive influx of attention on areas less traditionally considered as belonging to the safety domain. Two particular areas of influence have dominated this discussion – environment, social and governance (ESG) and total worker health (TWH). These two domains were already seeing an increased focus among more mature organizations in the past decade, with interlinks to traditional safety and health beginning to be established. However, the COVID-19 pandemic, alongside societal and workplace demographic changes, has forced greater attention on issues like physical wellbeing; mental health; psychosocial risk; diversity, equity and inclusion (DEI); sustainability; ethics and governance, driving a true transformation in the dialogue around the scope of safety.

Yet the models we rely on – philosophical and financial – do little, if anything, to account for this sea change. Tools like Heinrich's Triangle or the Iceberg Model have long been insufficient to express the true value and valuation of safety and health, and even the more modern and sophisticated efforts grounded in accounting principles have not been updated to reckon with the new reality of the safety landscape. Each organization may be at a different point on its path toward understanding and embracing safety. However, it's increasingly harder to ignore the fact that for many people, the concept of safety has expanded to include not just protecting one's arms and legs in an industrial facility, but to safeguarding all of the things that make us who we are – and all of the things in and surrounding our work environments.

In this fundamentally changed landscape, new models and new language are necessary – and so are new tools. This report, the outcome of a two-year effort by the National Safety Council, in partnership with and funded by Lloyd's Register Foundation and assisted by a panel of experts from the safety, health, ESG, business, research, investment, insurance, NGO and government communities, represents a first step toward redefining safety in 2023. As may be obvious from the size of this full report, this was no small undertaking, but we have segmented the work into discrete components for easier use:

- An executive summary capturing the key highlights, findings and recommendations of the work
- This full report, which provides a detailed look at the New Value of Safety model and its component parts, as well as recommendations for action
- A full literature review, which provides insights into the trends, frameworks and context informing the synthesis and creation of the model
- An activation guide, which provides methodologies and case studies that can be used to put the model into practice regardless of whether you are a safety and health practitioner or an ESG investor

We encourage you to read through this report and its associated resources and tools with an eye toward actual change and not as a passive conceptual piece. While the topics may be technical, the work has kept practicality in mind, and the recommendations and activation guide are intended to spark conversations, plans and policy change wherever they are used. Also, please note wherever the word "safety" appears, it should be understood as a shorthand for the myriad of issues impacting physical safety, and that utilizing it as a single word is not meant to exclude health, wellbeing and other associated topics.

In the century-old words of the first National Safety Council President & CEO, Robert W. Campbell, safety can perhaps best be understood as, "the study of the right way to do things." This definition, if nothing else, acknowledges that change is a constant in life. Embracing this means we must also change the way we conceive of safety to remain relevant, responsive and reflective of the context in which we attempt to create it every day.

We welcome you to join us on this journey.

Executive Summary

Environment, health and safety (EHS) is a constantly evolving field impacted by the latest scientific research, technological advancements, megatrends and associated changes in the regulatory landscape. To gain a better understanding of the importance and benefits of modern workplace safety, the National Safety Council (NSC) in conjunction with and funded by Lloyd's Register Foundation (LRF), commissioned a study into the New Value (and Valuation) of Safety, particularly in the context of modern-day topics, such as environment, social and governance (ESG). The New Value of Safety provides a basis on which a broad range of stakeholders can make commitments to practically modernize EHS programs, implement new safety strategies and improve culture.

While the highest priority of the EHS function will always be the physical safety of workers, this research highlights three organizational concepts that are generating broad value and driving a holistic approach to safety management for highly embedded and emerging risks. These concepts include:

- Human and Organizational Performance (HOP)
- Total Worker Health (TWH), developed by the National Institute for Occupational Safety and Health (NIOSH) and adapted in many formats, covering SIIF, mental health and psychological safety
- ESG, which covers several initiatives shaping modern safety excellence, including DEI, environment and sustainability, and ethics and governance

The analysis found these concepts and initiatives are inter-related and have distinct areas of overlap. While current organizational structures and resources have predominantly kept ESG and TWH programs separate, some themes, such as DEI, have relevancy across both TWH and ESG, and the benefits of integrating these areas are increasingly evident. A framework developed to visualize these relationships appears below:

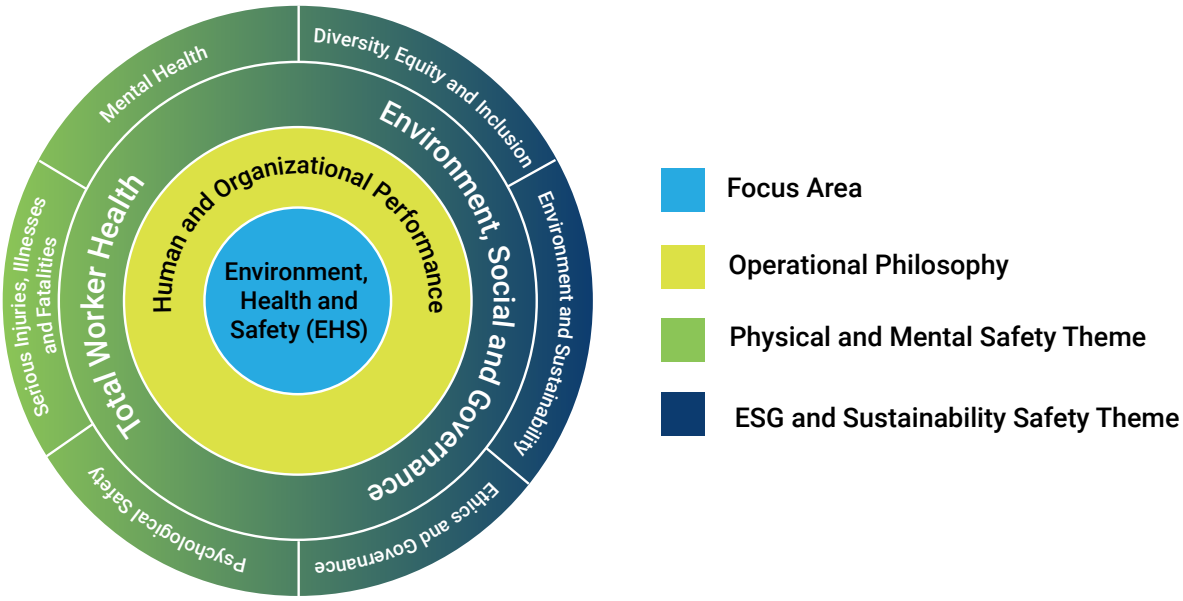
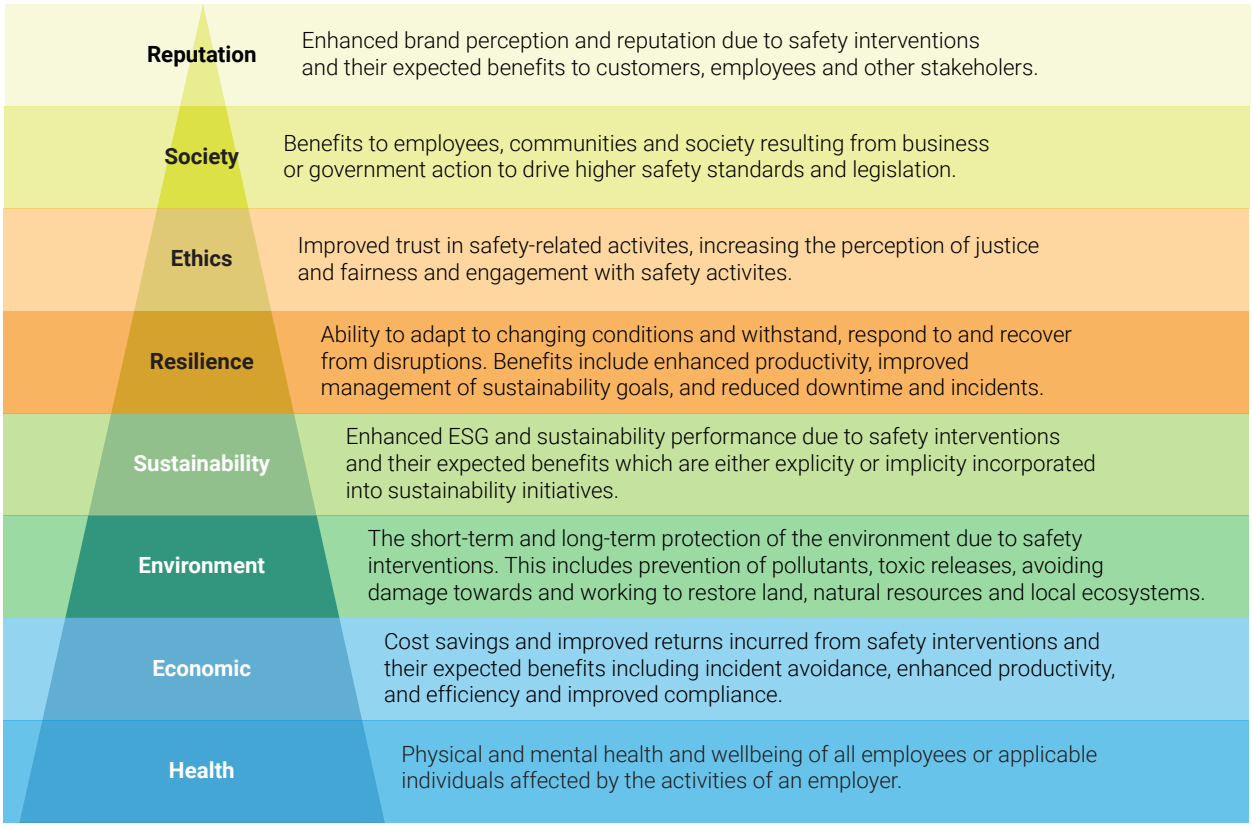


Figure 1: Framework of Environment, Health and Safety Themes

These modern EHS initiatives generate different areas of value for a broad set of stakeholders. As well as creating value for employees, investors and executives, value is generated across communities and society as a whole. Originally developed by The Delft University of Technology, and adapted through this study, the Hierarchy of EHS Value (see below) effectively represents the value generated through EHS programs across eight areas: health, economic, environment, sustainability, resilience, ethics, society and reputation. That said, we believe the relationships between these value creation areas are less a direct, ordinal hierarchy and more a set of closely and complexly interrelated linkages that require additional analysis and interpretation.



Note: Although called a "hierarchy," these concepts are not meant to be thought of as strictly or ordinally hierarchical in nature.

Figure 2: Hierarchy of Environment, Health and Safety Value (adapted from Yang, M (2022))

The holistic approach driven by contemporary safety programs creates an opportunity for businesses to generate long-term systemic value over and above physical safety and direct cost reduction. For example, SIIF prevention and mental health programs directly create health value, but they also ensure workers are more productive, which drives economic value. Additionally, a team that feels physically and emotionally safe is more resilient and able to withstand, respond to and recover from disruptions. More broadly, SIIF prevention and mental health programs can boost trust between employees and employers. They can also enhance an organization's reputation by mitigating the risk of serious incidents, and, by driving up safety standards, they contribute to healthier communities.

This shift is being increasingly supported by the regulatory and standards landscape developing to align with the New Value of Safety. While current coverage of safety frameworks is still heavily focused on physical safety risks, an increasing number of safety frameworks exist discussing ESG themes such as equality, culture and the environment.

However, silos and coverage gaps are created as a result of frameworks still viewing TWH and ESG as separate themes. Furthermore, regulations are also often voluntary and focused on offering deep technical support for industry-specific hazards which can inhibit a holistic approach to EHS. This has resulted in non-workplace hazards that materially impact wellbeing and safety at work being poorly supported across the regulatory landscape. A map of these themes to existing frameworks covering ESG, EHS and operational excellence appears below:

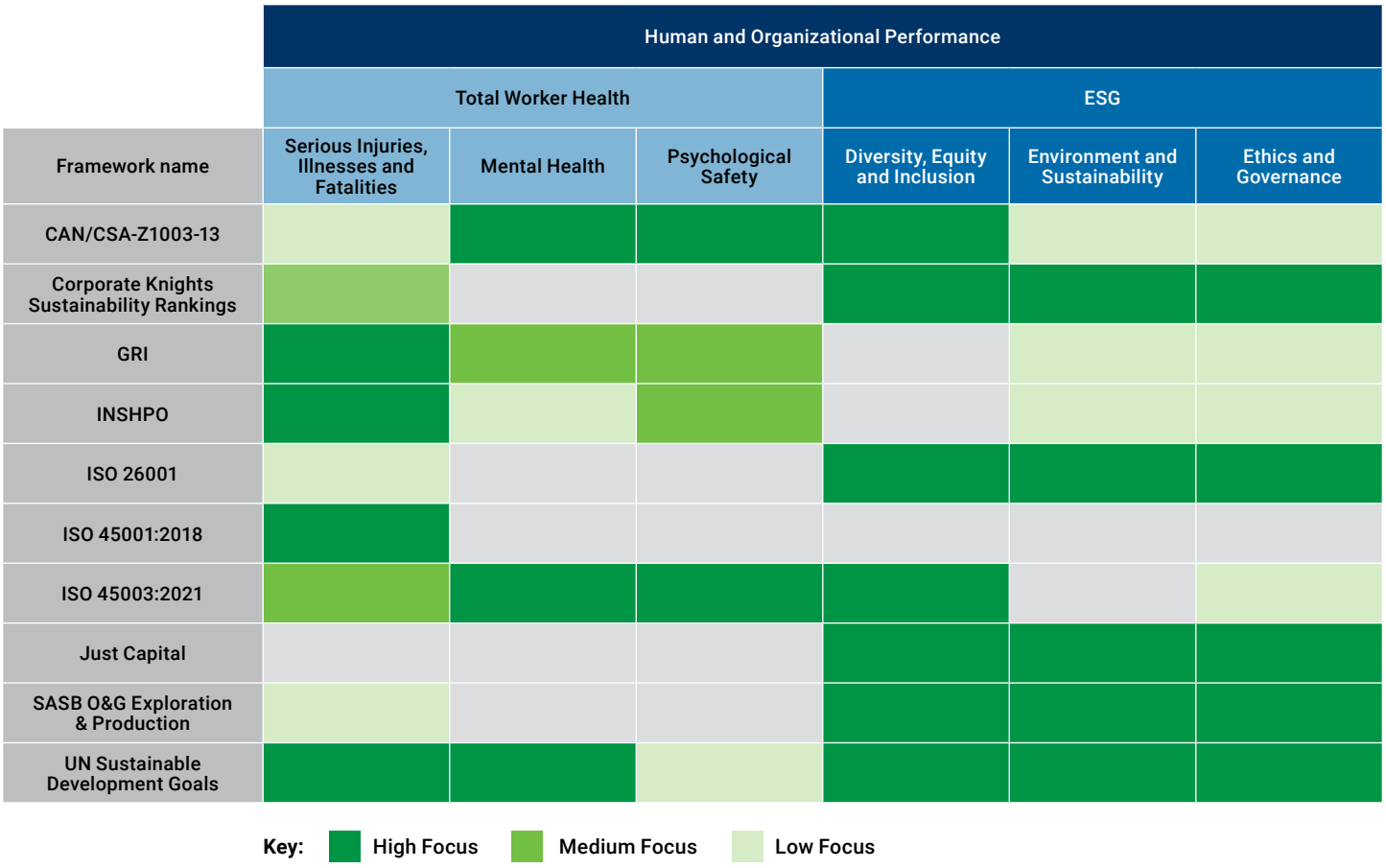


Figure 3: Framework Coverage of Environment, Health and Safety Initiatives

To improve the awareness and understanding of the organizational concepts and initiatives shaping modern safety programs, the New Value of Safety has been broken down into distinct concept and theme profiles. These profiles can be used by safety professionals, business executives, investors and policymakers to gain insight into the role and benefits of these initiatives in modern EHS programs and guide decision-making with respect to EHS strategies, best practices, investment decisions and performance tracking. Regardless of current maturity level, there is an opportunity to benefit from the compounding value modern safety programs create.

These themes and initiatives have been further studied to understand the primary, secondary and tertiary value they create across a variety of dimensions, and this full report includes quantitative and qualitative data regarding each initiative, program implementation guidance, sample metrics and KPIs, and recommended actions for the future. A summary appears below:

	Health and Safety					
	Human and Organizational Performance					
	Total Worker Health			ESG		
Theme	**Serious Injuries, Illnesses and Fatalities**	**Mental Health**	**Psychological Safety**	**Diversity, Equity and Inclusion**	**Environment and Sustainability**	**Ethics and Governance**
Definition/ Description	• Serious injuries, illnesses and fatalities are contributors to a significant reduction or total loss of human health	• State of mental wellbeing that enables people to cope with the stresses of life, realize their abilites, learn well and work well, and contribute to their community	• An organizational state where workers from diverse backgrounds are included, allowed and encouraged to learn, contribute and challenge co-workers without fear of ridicule and absence of interpersonal fear	• Principle that people should be subject to policies, processes and practices that are fair, free from bias and ensuring the inclusion of all stakeholders in organizational contexts	• Protection of the environment and ability for a company to sustainably maintain resources and relationships with, and manage its dependencies and impacts within its whole business ecosystem, over the short, medium and long term	• Guiding principle which implies moral conduct, showing consideration for the rights and interests of others reflected in the processes and practices of governing
Value Creation	• Health, Economic, Resilience, Ethics, Society, Reputation and Sustainability	• Health, Sustainability, Society, Economic, Resilience, Reputation and Ethics	• Health, Resilience, Economic, Ethics and Reputation	• Sustainability, Resilience, Society, Reputation, Economic, Health and Ethics	• Environment, Economic, Health, Sustainability, Reputation, Resilience, Ethics and Society	• Ethics, Health, Economic, Environment, Sustainability, Resilience, Society and Reputation
Framework Coverage	• ISO45001:2018 • GRI 403 • Corporate Knights Sustainability Rankings • INSHPO • ISO26000:2010	• CAN/ CSA-Z1003-13 • ISO45003:2021 • UN SDGs • GRI 403 • INSHPO	• CAN/ CSA-Z1003-13 • ISO45003:2021 • UN SDGs • INSHPO	• ISO26000:2010 • Corporate Knights Sustainability Rankings • Just Capital • UN SDGs • CAN/ CSA-Z1003-13 • SASB	• ISO26000:2010 • Corporate Knights Sustainability Rankings • Just Capital • UN SDGs • SASB	• INSHPO • ISO26000:2010 • ISO45001:2018
Initiatives/ Programs	• Safety culture and leadership • Continuous learning and improvement	• Employee engagement • Flexible work • Training and continuous leaning	• Leadership engagement • Transparent goals and performance measurement • Group training	• Equal treatment and remuneration • Impact assessments across genders, races and orientations • Ethical hiring and sourcing	• Pollution prevention • Sustainable resource use and supply chains • Climate change mitigation • Biodiversity	• Ethical sourcing and supply chains • Hazard and risk identification and elimination • PPE and controls • DEI and psychological safety
KPIs/Metrics	• Near miss and root cause analyses • Worker engagement indicators • Job hazard analyses • Equipment reliability and process control • Number and frequency of corrective actions	• Training and support • Frequency of communication • Productivity • Risk controls	• Employee engagement and feedback rates • Training and support resources • Risk controls	• Board, executive and director diversity • Workforce demographics • Fair Play Score and Rating • Living wage • EEOC Violations and Worker Grievance Fines	• Energy, GHG emissions, water, waste, air and, particulate matter productivity • Clean revenue and investment • Supplier sustainability scores • Resource efficiency	• Public and community sentiment polls • Employee turnover • Employee satisfaction • Sanctions and fines • CEO-average employee pay • Sick leave and pension

The New Value of Safety Report is intended to collate the actionable insights and value generation potential of key areas in modern EHS programs. Businesses should use the guidance provided in the theme profiles to implement targeted interventions for these areas. To effectively drive these changes and align with the New Value of Safety, several general areas of best practice were identified via analysis carried out across the research. This full report includes further recommendations and KPIs derived from this work, and a short list appears below. Recommendations that include an asterisk are suggested for those just beginning their journey:

- Assess the extent to which your strategy, policies and procedures address the full scope of modern EHS beyond physical safety and short-term environmental impacts*
- Review your activities against key safety frameworks to align and identify the coverage gaps with respect to legacy and emerging EHS themes
- Perform a holistic assessment, including materiality and risk analyses, to identify how these themes impact workers in your organization and the value they can generate to support initiative prioritization*
- Engage relevant functions to update the overarching safety and sustainability strategy, align with key frameworks and assign KPIs to track performance
- Develop programs (such as TWH or the pillars of ESG) to establish a hierarchy of accountability and organize workstreams (such as mental health or DEI initiatives)
- Create cross-functional committees to eradicate silos between safety, ESG and HR, and designate Safety Champions to drive ownership of and engagement with the safety strategy
- Develop a transformation and investment plan focused on value creation to gain leadership buy-in and support and encourage a leader-engaged safety culture
- Create an implementation plan and delegate ownership of specific activities at the functional and individual levels that will close the targeted gaps in your safety program*
- Develop a communication program to roll out the New Value of Safety program and the benefits this will drive, leveraging training and engagement tools to boost adoption
- Establish mechanisms enabling learning and feedback loops that drive continuous improvement and increase the agility and impact of safety programs*

In addition, this research has been leveraged to develop a targeted Activation Guide for stakeholders to support continuous improvement and help organizations evolve with the changing landscape of EHS, available on the NSC website. This guide will enable businesses to address safety holistically and mitigate risks from multiple directions. Regardless of current level of safety and health performance, there is an opportunity to benefit from this approach, and we encourage using it to inform your safety strategy going forward.

If you are interested in additional information stemming from this research, please visit **nsc.org/nvos.**

Background and Context

Introduction to the New Value of Safety

EHS is a constantly evolving field impacted by the latest scientific research, technological advancements, megatrends and associated changes in the regulatory landscape. The EHS function actively creates business value through labor and the mitigation of operational risks, but there remains a significant lack of awareness of the opportunity to drive value addition more broadly across society and a diverse set of stakeholders.

To gain a better understanding of the importance and benefits of modern workplace safety, NSC in conjunction with LRF commissioned a study into the New Value of Safety seeking to answer the following questions:

- What is understood by the meaning of safety today?
- Why is safety important and valuable to stakeholders across industries and geographies?
- How can current values around safety be practically integrated into everyday decision-making?
- How do existing safety measurement frameworks differ from the meaning of safety today?

For the purposes of this research, safety refers to workplace safety, also referenced as EHS interchangeably throughout this study. The New Value of Safety provides a basis on which a broad range of stakeholders can make commitments to practically modernize EHS programs, implement new safety strategies and improve culture. It sets out several methodologies for an effective EHS investment strategy across legacy and emerging safety themes, with recommendations on the key actions and performance metrics based on primary interviews and secondary research from existing frameworks, standards and literature.

The report aims to create a new comprehensive framework that can be used by all safety practitioners, irrespective of differing mandates, industry or maturity levels to guide business case development, governance and strategic decision-making. The insights from this report have been leveraged to develop an Activation Guide, which serves as a practical guide for different stakeholders to operationalize the New Value of Safety and can be accessed separately from this report.

Methodology and Content Assets

The New Value of Safety Report expands upon previous work performed on behalf of NSC and LRF by Avetta as well as the Delft University of Technology. Key external inputs include:

- Benchmarking Organizational Commitment to ESG (Avetta and NSC, 2022)
- Value of Safety (Yang, M. et al. 2022)

To build on this research base, the New Value of Safety study involved several secondary and primary research activities, the insights of which have been consolidated and included in this report. The key research activities conducted include:

- **Literature Review and Summary Report**
  - Built on a Delft study which analyzed the value of safety across 3,685 papers published from 1900 – 2021
  - Reviewed literature from 2017 – 2022, focusing on approximately 25 key documents to understand recent evolutions to the value of safety
  - Informed creation of models, analysis and recommendations included in this report
  - Available as a separate download through the NSC website

- **Framework Assessment**
  - In-depth study into existing EHS and ESG frameworks and legislation (full methodology available in Appendix 1)
- **Quantitative Survey**
  - Included 81 survey interviews conducted between June and December 2022 representing a broad range of stakeholder groups and geographies (full methodology available in Appendix 1)
  - While the number of interviews included in this study is insufficient to draw conclusive representative statements, this survey data provides an additional lens and further insight into the themes discussed in this report
  - While people from a wide spread of geographies were surveyed, the individuals included in this study generally come from high-maturity organizations with strong existing safety cultures and performance levels, which should be considered when reviewing the survey statistics
- **Qualitative Interviews**
  - Included 10 deep-dive interviews with senior leaders from the NSC ESG/EHS Expert Working Group and the Verdantix Research Network (full methodology available in Appendix 1)

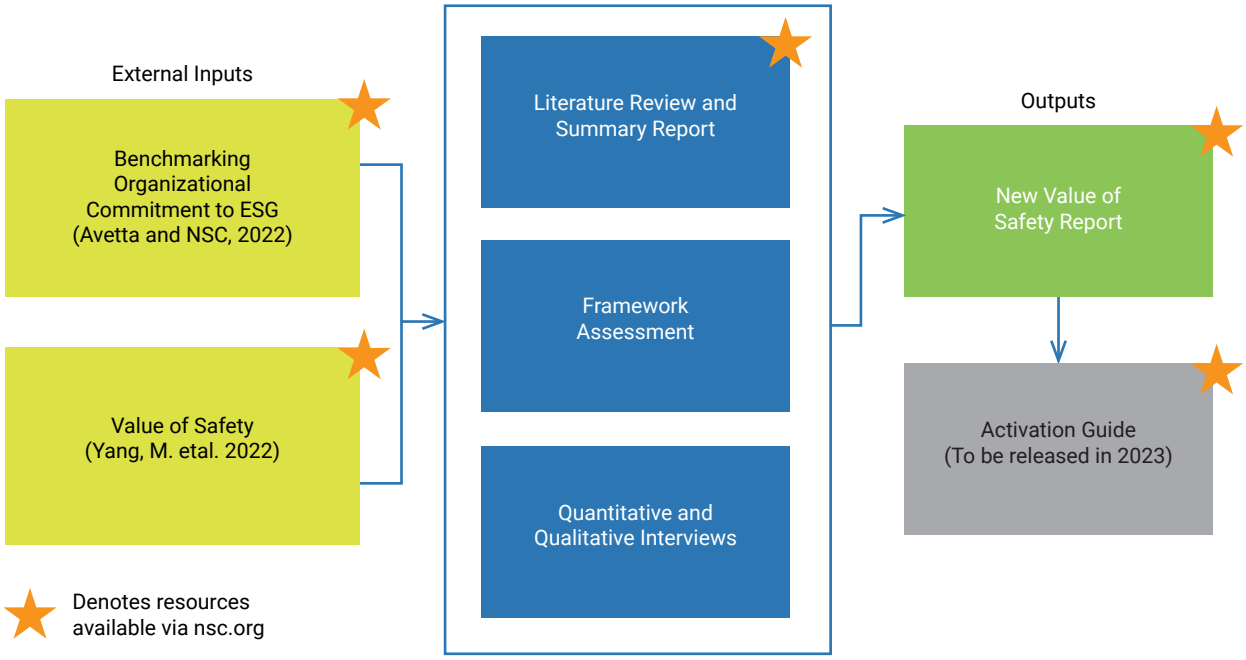


Figure 1. Methodology and Content Assets

The Evolving Meaning of Environment, Health and Safety

The meaning of EHS has evolved over time to include a broad set of themes and initiatives. Not only is the remit of EHS expanding, but the definition of legacy and emerging themes has also changed over time, along with expectations for performance (see Figure 2). A dynamic and agile approach to safety management is essential to keep up with the changing landscape and its requirements. This research provides insight into how new, as well as traditional safety areas, are being incorporated into modern safety programs and the value they generate.

While the highest priority of the EHS function will always be the physical safety of workers, this research highlights contemporary strategies that are generating value and driving a holistic approach to safety management for highly embedded and emerging risks.

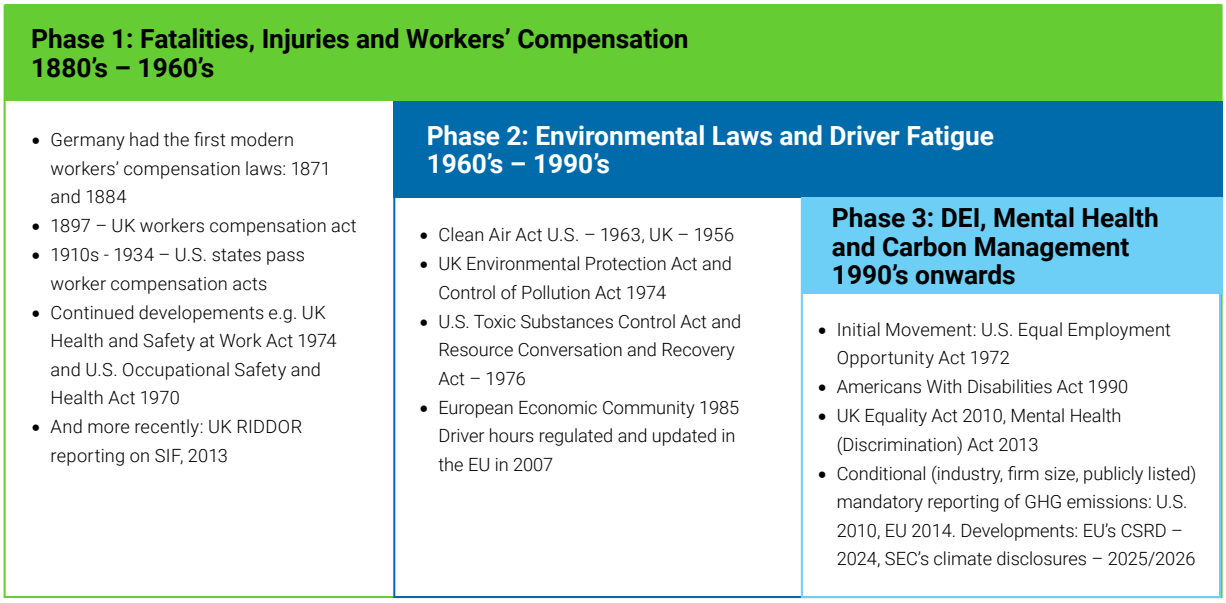


Figure 2. Evolution of Health and Safety

The major organizational concepts shaping the New Value of Safety include:

- **Human and Organizational Performance (HOP):** An operating philosophy recognizing error as part of the human condition, and that an organization's processes and systems greatly influence employees' decisions, choices and actions, and consequently, their likelihood of successful work performance (National Safety Council, 2021).
- **Total Worker Health (TWH):** Developed by NIOSH and defined as policies, programs and practices that integrate protection from work-related safety and health hazards with the promotion of injury and illness-prevention efforts to advance worker wellbeing (NIOSH, 2016).
- **Environment, Social and Governance (ESG):** Environment, social and governance issues are identified or assessed in responsible investment processes. Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems. Social factors are issues relating to the rights, wellbeing, and interests of people and communities. Governance factors are issues relating to the governance of companies and other investee entities. (UN Principles for Responsible Investment, 2023).

The EHS initiatives in this report include:

- **Serious Injuries, Illnesses and Fatalities (SIIFs):** SIIFs are contributors to a significant reduction or total loss of human health. These can be a permanent impairment or life-altering state, or an injury that if not immediately addressed will lead to death or permanent or long-term impairment.
- **Mental Health:** Mental health is defined as a state of mental wellbeing enabling people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community (World Health Organization, 2022).
- **Psychological Safety:** Psychological safety provides individuals with a strong sense of inclusion amongst leaders and peers in the workforce. Individuals are given a space to learn, are empowered to challenge unsafe conditions and contribute diverse ideas without fearing negative consequences. Organizations create psychologically safe environments by intentionally fostering a culture where employees feel safe to speak up and by having policies and procedures that support the individual's promotion of safe practices. With an empowered workforce, individuals at all levels of the organization can support one another and promote reciprocal trust, ultimately saving lives.
- **Diversity, Equity and Inclusion (DEI):** Diversity is defined as the characteristics of differences and similarities between people (ISO, 2021). Equity is defined as the principle that people should be subject to policies, processes and practices that are fair, as far as possible, and free from bias (ISO, 2021). Inclusion is defined as the process of including all stakeholders in organizational contexts (ISO, 2021).
- **Environment and Sustainability:** The environment is defined as the "natural surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, people, outer space and their interrelationships" (ISO, 2010). Sustainability is defined as the ability of a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium and long term. Sustainability is a condition for a company to access over time the resources and relationships needed, such as financial, human and natural, ensuring their proper preservation, development and regeneration to achieve its goals (IFRS, 2022).
- **Ethics and Governance:** Ethics is a guiding principle, which implies moral conduct and honorable behavior, showing consideration to the rights and interests of others (Verma, S. and Prakash U.M., 2011). Business ethics attempts to apply moral norms and values to business procedures and institutions (Tayşir and Pazarcık, 2013). Governance refers to all processes of governing, the institutions, processes and practices through which issues of common concern are decided upon and regulated. Good governance adds a normative or evaluative attribute to the process of governing (United Nations Human Rights Office).

The analysis found these themes and initiatives are inter-related and have distinct areas of overlap. Firstly, HOP is an operating philosophy, as opposed to a safety program, with its principles primarily being used to design safety initiatives. HOP supports businesses by creating an underlying philosophy or worldview that all organizations can adopt to drive higher safety standards. Furthermore, TWH brings together physical safety with health and wellbeing creating value across SIIF, mental health and psychological safety themes. Similarly, ESG encompasses all issues related to the natural world, people and operatory standards which includes DEI, environment and sustainability, and social, ethics and governance themes. Due to these relationships, a Framework of Environment, Health and Safety Themes has been developed to visualize how these topics fit together and can be structured within safety programs (see Figure 3).

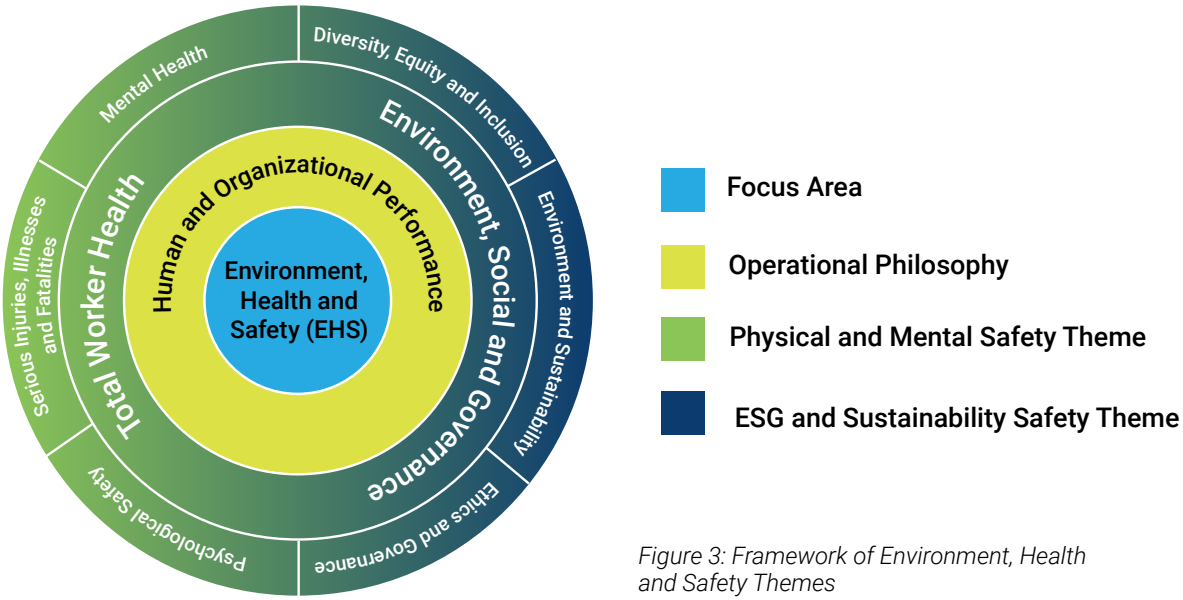


Figure 3: Framework of Environment, Health and Safety Themes

While current organizational structures and resources have predominantly kept ESG and TWH programs separate, some themes, such as DEI, have relevancy across both TWH and ESG, and the benefits of integrating these areas are increasingly evident. For example, when considering TWH-related initiatives, recommendations focus on minimizing physical hazards, improving worker security and productivity, and lowering the rate of psychological distress and mental health problems. The resulting improvements across cost effectiveness, injury rates, recruitment, employee retention and organizational excellence is set to drive ESG and sustainability performance.

Modern EHS initiatives generate different areas of value for a broad set of stakeholders. As well as creating value for employees, investors and executives, value is generated across communities and society as a whole. Originally developed by The Delft University of Technology, and adapted through this study, the Hierarchy of EHS Value effectively represents the different areas of value generated through EHS programs (see Figure 4). While represented as a hierarchy in the original publication, it is perhaps helpful to think of this visualization as less of an ordinal hierarchy and more of a closely and complexly interlinked set of topics.

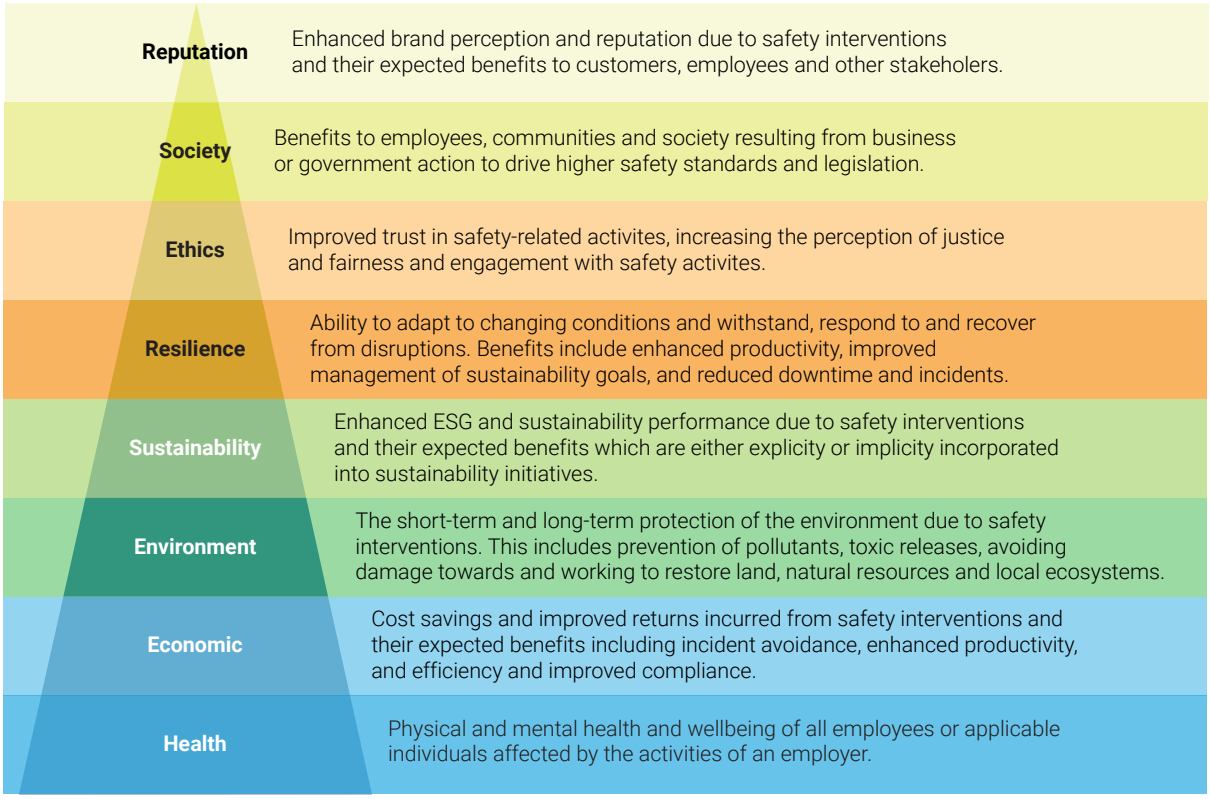


Figure 4: Framework of Environment, Health and Safety Themes

Although the value areas EHS creates can be understood as a hierarchy, they are also interconnected, whereby an activity generating primary value in a specific area can also generate secondary and tertiary value creation (see Figure 5).

For example, SIIF prevention and mental health programs directly create health value, but they also ensure workers are more productive, which drives economic value. Additionally, a team that feels physically and emotionally safe is more resilient and able to withstand, respond to and recover from disruptions. More broadly, SIIF prevention and mental health programs can boost trust between employees and employers. They can also enhance an organization's reputation by mitigating the risk of serious incidents, and, by driving up safety standards, they contribute to healthier communities.

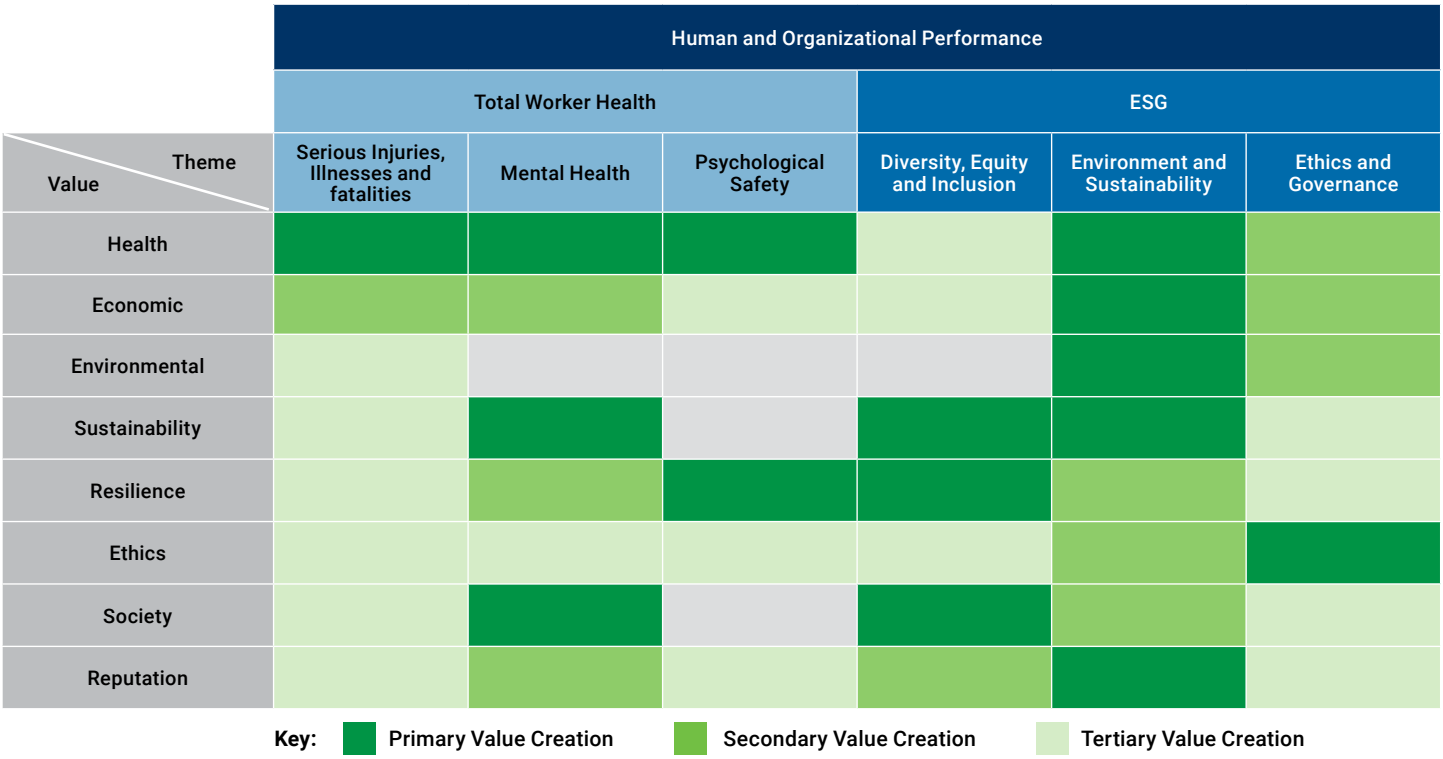


Figure 5. Environment, Health and Safety Initiatives Value Creation

The holistic approach driven by contemporary safety programs creates an opportunity for businesses to generate long-term systemic value over and above physical safety and direct cost reduction. This shift is being increasingly supported by the regulatory and standards landscape that is developing to align with the New Value of Safety.

Frameworks and Modern Environment, Health and Safety Alignment

Frameworks and regulations have been developed to help organizations map the evolution of safety and proactively address pressures surrounding emerging safety themes. This is evidenced by the evolution of modern safety programs and the introduction of new regulations, such as the 2010 UK mental health equality act (Gov.uk, 2015), ISO 45001 (NQA, 2018), the updated Occupational Health and Safety Professional Capability Framework (INSHPO, 2017), the SASB ESG Conceptual Framework (SASB, 2017) and carbon emission reporting disclosures. While the current coverage of safety frameworks is still heavily focused on physical safety risks, there are an increasing number of frameworks discussing ESG themes such as equality, culture and the environment (see Figure 6).

"Standards are coming together, covering a wide range of topics, in particular, issues around living wage are gaining traction and have a huge impact on worker safety in terms of wellbeing." *– Technical Director, Consulting Firm*

Figure 6. Regulatory and Standards Coverage of Safety Risk Factors

An in-depth framework assessment was conducted to evaluate the extent to which existing safety frameworks defined, measured and valued safety in light of the evolving landscape and the greater focus on ESG and TWH. To perform such an assessment, Verdantix identified over 80 applicable EHS and ESG frameworks, of which 10 frameworks were shortlisted based on their alignment with the values associated with modern-day safety, the quality and practicality of metrics on offer, and the significance of the new value of safety within the framework.

The 10 shortlist frameworks include:

- CAN/CSA-Z1003-13 (BCFED, 2013)
- Corporate Knights Sustainability Rankings (CKSR) (Corporate Knights, 2021)
- GRI (GRI, 2018)
- INSHPO
- ISO 26001 (ISO, 2010)
- ISO 45001: 2018
- ISO 45003:2021 (ISO, 2021)
- Just Capital (Just Capital, 2022)
- Sustainability Accounting Standards Board (SASB) Conceptual Framework
- UN Sustainable Development Goals (United Nations, 2022)

While organizations are incorporating elements of TWH, ESG and HOP into their safety management systems and programs through the guidance of existing frameworks, significant gaps and silos in the overall coverage of the values identified remain (see Figure 7).

"Climate is getting all the attention right now. Governance has been worked on for a very long time. It is still quite vague and poorly defined by a lot of folks." *– Chief Strategy Officer, EHS Software Company*

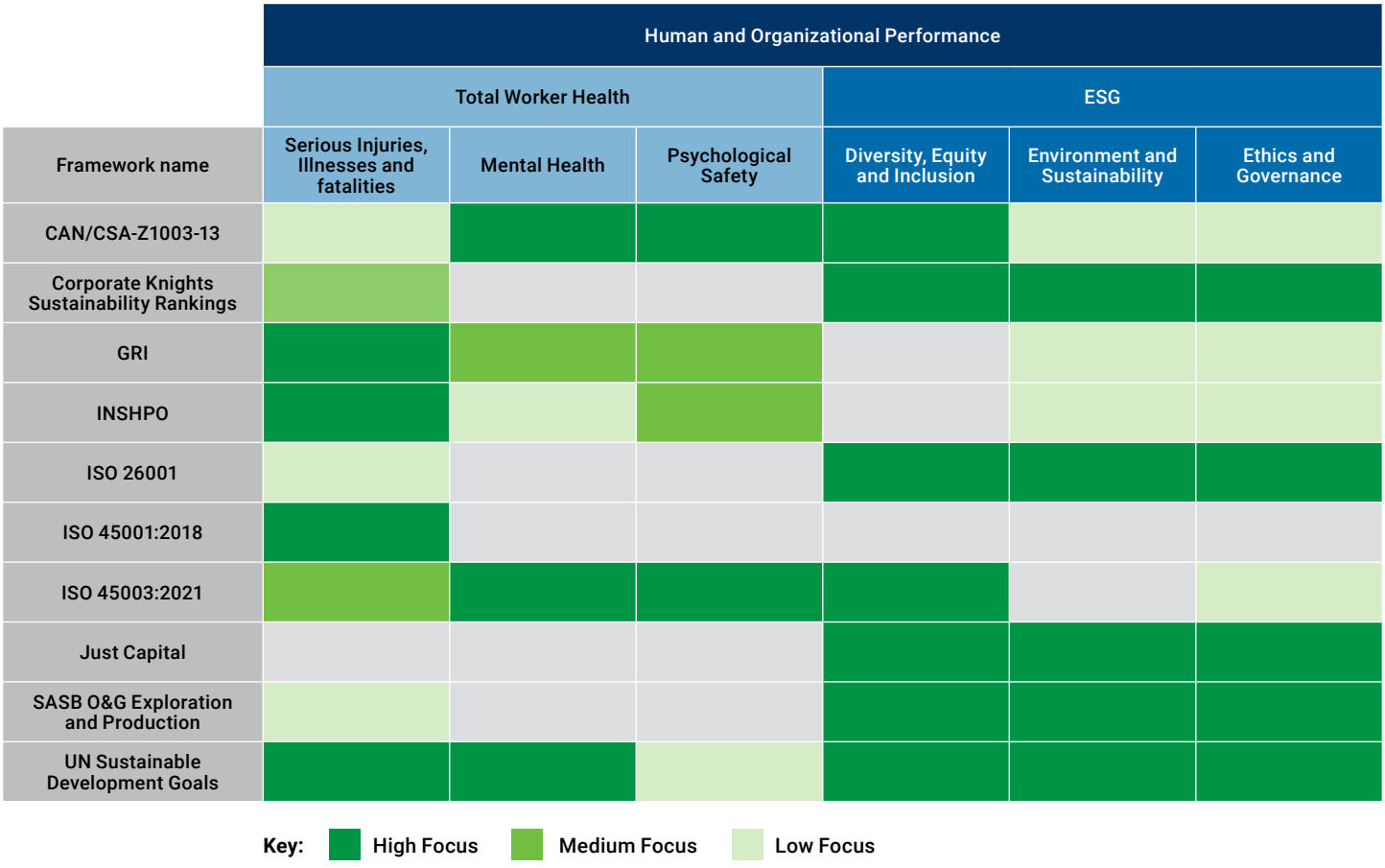


Figure 7. Framework Coverage of Environment, Health and Safety Initiatives

From a guidance perspective, the main silos are created as a result of existing frameworks still viewing TWH and ESG as separate themes. This is seen through the CKSR, ISO 26001 and Just Capital frameworks, which almost wholly look at ESG-related themes with little consideration for TWH. Furthermore, governing bodies and their corresponding frameworks are being forced to constantly update their coverage to align with the moving target of safety best practices. Therefore, existing methodologies may not address all ESG and TWH-related struggles, presenting additional challenges for organizations to achieve modern safety excellence.

More generally speaking, regulations are also often focused on offering deep technical support for industry-specific hazards, which can inhibit a holistic approach to EHS. For example, OSHA has specific industry orders and the SASB framework is split into 77 different industry standards. This has resulted in non-workplace hazards that materially impact wellbeing and safety at work being poorly supported across the regulatory landscape.

"During the pandemic, OSHA couldn't offer full guidance on COVID because they were limited to work-related safety only, while COVID could be spread outside of work. This view of safety limits the scope of safety – having broader education of safety and how it fits into the world is more valuable." *– Director, Federal Agency*

Moreover, frameworks have also seen varied adoption rates across geographical regions. Historically speaking, the U.S. has lagged behind Europe, which has a more stringent regulatory environment and greater coverage of non-physical safety and psychosocial risk factors. While the U.S. and associated regulators are increasingly looking to shift their requirements to include worker equality and mental health, such topics have been prevalent in the European market for many years now. For instance, the recent EU directive on Corporate Sustainability Reporting (Meynier, et. al., 2023) will require over 50,000 companies to provide more detailed sustainability reporting, including environmental, social, and human rights and governance information. Non-EU companies trading within the EU will have to comply by 2028.

While this study looked at global research and interviewed stakeholders based in countries outside of North America, it is important to note that it was not focused on addressing variance in safety performance, organizational maturity or regional/global maturity with respect to approaches to safety. For instance, the loose hierarchy developed in the precursor report to this document, as well as the Framework of EHS themes and Framework of Coverage of EHS Initiatives, are not differentiated based on macro conditions such as societal and cultural points of view on the value of human life, existence of social security or healthcare systems and schema, and so on. It is therefore important to note that not every stakeholder engaging with this work will want to start at the same point for affecting change.

"In the UK, since the year 2000, people have been talking about and addressing stress in the workplace. In the U.S., even today, people don't talk about stress. It still isn't compensable under workers' compensation."
– CEO, EHS Management Consultancy

Finally, of the 80 frameworks screened for this assessment, over 85% were voluntary. The combination of voluntary, disparate and unclear frameworks has resulted in organizations being able to pick and choose initiatives to implement reducing the accountability of employers to pursue modern safety excellence.

Framework Assessment Summary

Framework	Summary	Framework Category	Safety Theme(s)	Geographic Applicability	Strengths	Limitations
CAN/CSA-Z1003-13	Framework covering stakeholders, implementation, resources, infrastructure, event management and training for issues relating to psychological health, mental wellbeing and safety in the workplace	EHS and ESG	Mental Health Psychological Safety Diversity, Equity and Inclusion	North America	• Offers guidance and scenarios based implementation advice to help firms understand how best to improve workplace management practices to reduce psychological safety risks	• Mental health and psychological risk is still quite nascent and corresponding metrics are difficult to quantify – recommendations may come across as being too simplistic
Corporate Knights Sustainability Rankings	Assesses over 7,000 public companies with over $1 bn revenue to provide guidance on equality, diversity, injuries, fatalities, environmental performance and turnover	ESG	Serious Injuries, Illnesses and Fatalities Diversity, Equity and Inclusion Environment and Sustainability Ethics and Governance	Global	• Ranks the 100 most sustainable companies in the world through a clearly defined methodology based on publicly-disclosed data and 21 ESG-related performance indicators	• Few guidelines on how to implement recommendations • Largely focused on social responsibility with less than half of the key performance indicators relating to environmental sustainability
GRI 403: Occupational health and safety	Supports organizations in reporting on health and safety issues, and mental health in workplaces	EHS	Mental Health	Global	• Can be used by firms to prepare sustainability and worker-centric reports • Standard focuses on workers' recovery from injuries instead of lost time • Aligned with ISO 45001	• Guidelines can be ambiguous resulting in different interpretations • Provides lagging indicators (e.g. it records fatality rates rather than providing proactive guidance for SIIF)
INSHPO	An international forum for engagement on EHS-related matters, advancing the EHS profession through the exchange of evidence-based practices and the development of a harmonized framework	EHS and ESG	Serious Injuries, Illnesses and Fatalities	Global	• Provides guidance into roles, responsibilities, knowledge and skills required by EHS professionals • Provides a benchmark for firms on what to expect and invest in with regards to EHS	• Limited to accidents and legal requirements rather than proactive safety • No clear definition around the model practice for EHS
ISO 26000	International standard for guidance on sustainable, social and environmental responsibility	EHS and ESG	Diversity, Equity and Inclusion Environment and Sustainability Ethics and Governance	Global	• Support any organization to behave in a more social and environmental way through a series of management guidelines • Support social responsibility reporting and integration with existing ISO standards and government regulations	• Framework is a guide to "socially responsible" organizational behavior – focused on helping firms improve public perception rather than adding actual safety value

Framework Assessment Summary

Framework	Summary	Framework Category	Safety Theme(s)	Geographic Applicability	Strengths	Limitations
ISO 45001:2018	International standard for guidance on creating and managing effective EHS programs, reducing workplace incidents, absenteeism, reducing insurnace cost, health and safety culture, reputation staff and moral	EHS	Serious Injuries, Illnesses and Fatalities	Global	• Support organizations to improve their occupational health and safety performance to prevent serious injury, reduce ill-health, enhance legal compliance, improve health and safety culture, reputation and staff morale	• Framework does not consider the current maturity of firms or consider if companies are practically ready to implement new safety guidelines • May be difficult for smaller, less mature firms to interpret what the standard is asking for
ISO 45003:2021	Designed to be used with ISO 450001, this standard provides guidance on the management of psychosocial risks and promoting wellbeing at work as part of an EHS management system	ESG	Mental Health Psychological Safety Diversity, Equity and Inclusion	Global	• Support organizations in improving work environment, resilience and productivity in relation to psychological safety • Framework covers how to identify psychosocial hazards that can affect workers and provides examples of effective - often simple - actions to manage these and improve employee wellbeing	• Mental health and psychological risk is still quite nascent and therefore it is not clear who should be taking responsibility of implementing the standard • Guidance assumes ISO 45001 has been implemented
JUST Capital	JUST Captial's Rankings serve as a scorecard, providing unbiased data on how the largest U.S. companies perform on the issues Americans prioritize such as worker rights, community impact, environment and customer rights	EHS and ESG	Diversity, Equity and Inclusion Environment and Sustainability Ethics and Governance	North America	• Detailed measurement methodology on relevant ESG and EHS issues • Offers a series of metrics to measure corporate performance	• Considers harmful industries (e.g. tobacco/gambling) when providing ESG and EHS guidance • Majority of companies considered are technology companies which skews data – industry mapping methodology is not explained
SASB	The framework sets out the basic concepts, principles and objectives that guide firms in their approach to managing environmental and social impacts and value creation arising from production of goods and services – also including the impacts that sustainability challenges have on innovation, business models, and corporate governance and vice versa	ESG	Diversity, Equity and Inclusion Environment and Sustainability Ethics and Governance	Global	• Supports firms in building sustainability strategies and more effectively perform ESG reporting • Supports investors to make investment decisions that align with their ESG values • Identifies sustainability factors more likely to impact the financial condition and operation performance of an organization • Consists of 77 standards to reflect the needs of different industries	• No guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry or company • Principles aligned with SEC guidance but no official affiliation with SEC or other entities governing financial reporting, such as FASB, GASB or IASB
UN Sustainable Development Goals	A global call to action to end poverty and inequality, protect the planet, and promote health, justice and prosperity – 17 SDGs that cover social, environmental, infrastructure, equality, worker and community health	EHS and ESG	Serious Injuries, Illnesses and Fatalities Mental Health Diversity, Equity and Inclusion Environment and Sustainability Ethics and Governance	Global	• Wide-ranging goals covering social, environmental, infrastructure, equality, worker and community health that help improve awareness and culture barriers in relation to EHS and ESG objectives	• Goals are slow moving and very generic – it doesn't consider individual issues or practicality • Countries are not forced to comply • No support for lower funded countries

Introduction to the New Value of Safety Theme Profiles

To improve the awareness and understanding of the organizational concepts and initiatives shaping modern safety programs, the New Value of Safety has been broken down into distinct theme profiles. The structure of these profiles aligns with the hierarchies outlined in this report (see Figure 8).

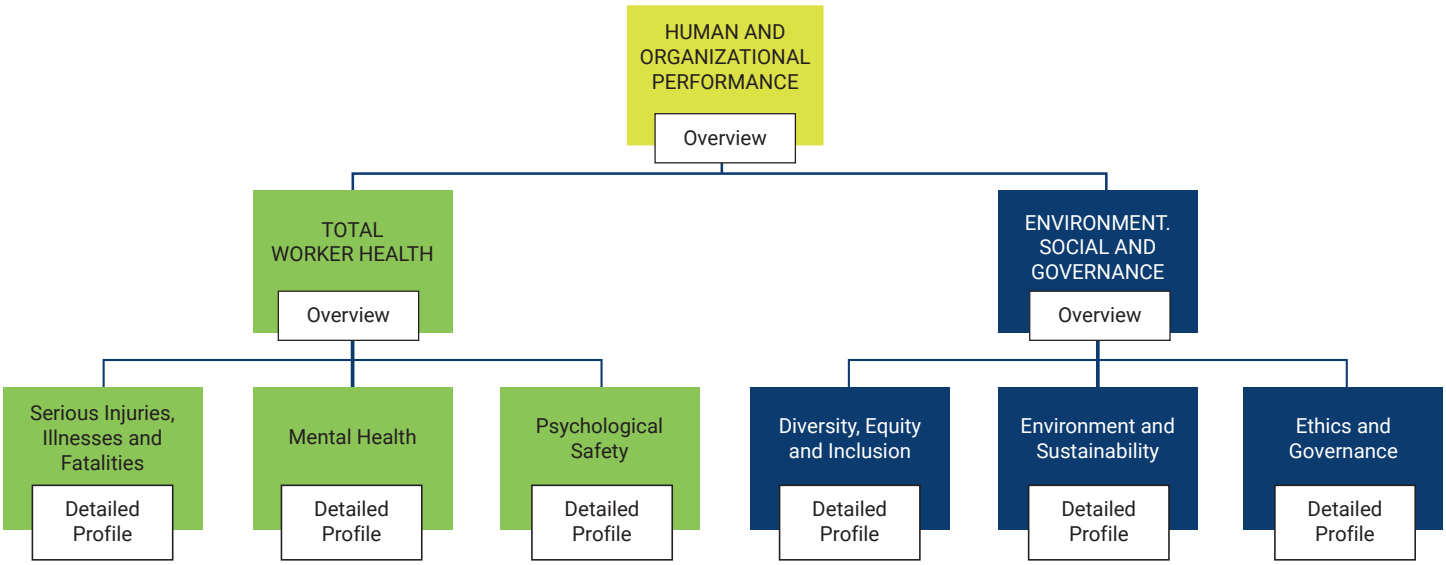


Figure 8. New Value of Safety Theme Profile Structure

The profiles aim to provide consolidated information on the:

- Definition and context of the theme
- EHS value creation areas
- Framework coverage and guidance
- Recommended initiatives and programs
- Metrics and key performance indicators

Note that with respect to metrics, context is critical; metrics provided are intended to be directional, not prescriptive, and an organization's operating type, culture, location, relative maturity and many other factors influence the selection and use of the correct performance indicators.

The profiles detailed in the subsequent sections can be used by safety professionals, business executives, investors and policymakers to gain insight into the role and benefits of these initiatives in modern EHS programs and guide decision-making with respect to EHS strategies, best practices, investment decisions and performance tracking. These can be paired with the Activation Guide, available separately on nsc.org, in order to create a starting point for action in your organization.

The New Value of Safety: Theme Profile Summary

	Health and Safety					
	Human and Organizational Performance					
	Total Worker Health			ESG		
Theme	**Serious Injuries, Illnesses and Fatalities**	**Mental Health**	**Psychological Safety**	**Diversity, Equity and Inclusion**	**Environment and Sustainability**	**Ethics and Governance**
Definition/ Description	• Serious injuries, illnesses and fatalities are contributors to a significant reduction or total loss of human health	• State of mental wellbeing that enables people to cope with the stresses of life, realize their abilites, learn well and work well, and contribute to their community	• An organizational state where workers from diverse backgrounds are included, allowed and encouraged to learn, contribute and challenge co-workers without fear of ridicule and absence of interpersonal fear	• Principle that people should be subject to policies, processes and practices that are fair, free from bias and ensuring the inclusion of all stakeholders in organizational contexts	• Protection of the environment and ability for a company to sustainably maintain resources and relationships with, and manage its dependencies and impacts within its whole business ecosystem, over the short, medium and long term	• Guiding principle which implies moral conduct, showing consideration for the rights and interests of others reflected in the processes and practices of governing
Value Creation	• Health, Economic, Resilience, Ethics, Society, Reputation and Sustainability	• Health, Sustainability, Society, Economic, Resilience, Reputation and Ethics	• Health, Resilience, Economic, Ethics and Reputation	• Sustainability, Resilience, Society, Reputation, Economic, Health and Ethics	• Environment, Economic, Health, Sustainability, Reputation, Resilience, Ethics and Society	• Ethics, Health, Economic, Environment, Sustainability, Resilience, Society and Reputation
Framework Coverage	• ISO45001:2018 • GRI 403 • Corporate Knights Sustainability Rankings • INSHPO • ISO26000:2010	• CAN/ CSA-Z1003-13 • ISO45003:2021 • UN SDGs • GRI 403 • INSHPO	• CAN/ CSA-Z1003-13 • ISO45003:2021 • UN SDGs • INSHPO	• ISO26000:2010 • Corporate Knights Sustainability Rankings • Just Capital • UN SDGs • CAN/ CSA-Z1003-13 • SASB	• ISO26000:2010 • Corporate Knights Sustainability Rankings • Just Capital • UN SDGs • SASB	• INSHPO • ISO26000:2010 • ISO45001:2018
Initiatives/ Programs	• Safety culture and leadership • Continuous learning and improvement	• Employee engagement • Flexible work • Training and continuous leaning	• Leadership engagement • Transparent goals and performance measurement • Group training	• Equal treatment and remuneration • Impact assessments across genders, races and orientations • Ethical hiring and sourcing	• Pollution prevention • Sustainable resource use and supply chains • Climate change mitigation • Biodiversity	• Ethical sourcing and supply chains • Hazard and risk identification and elimination • PPE and controls • DEI and psychological safety
KPIs/Metrics	• Near miss and root cause analyses • Worker engagement indicators • Job hazard analyses • Equipment reliability and process control • Number and frequency of corrective actions	• Training and support • Frequency of communication • Productivity • Risk controls	• Employee engagement and feedback rates • Training and support resources • Risk controls	• Board, executive and director diversity • Workforce demographics • Fair Play Score and Rating • Living wage • EEOC Violations and Worker Grievance Fines	• Energy, GHG emissions, water, waste, air and particulate matter productivity • Clean revenue and investment • Supplier sustainability scores • Resource efficiency	• Public and community sentiment polls • Employee turnover • Employee satisfaction • Sanctions and fines • CEO-average employee pay • Sick leave and pension

Human and Organizational Performance

Definition and Context

HOP is defined as an operating philosophy that recognizes error as part of the human condition, and an organization's processes and systems greatly influence employees' decisions, choices and actions, and consequently, their likelihood of successful work performance (National Safety Council, 2021).

The principles of HOP can be designed into any specific safety initiative by integrating checks, reviews and communication opportunities throughout. HOP is partially embedded within safety initiatives because it is a cross-cutting approach to risk management, but it is typically seen only in high-maturity organizations (see Figure 9).

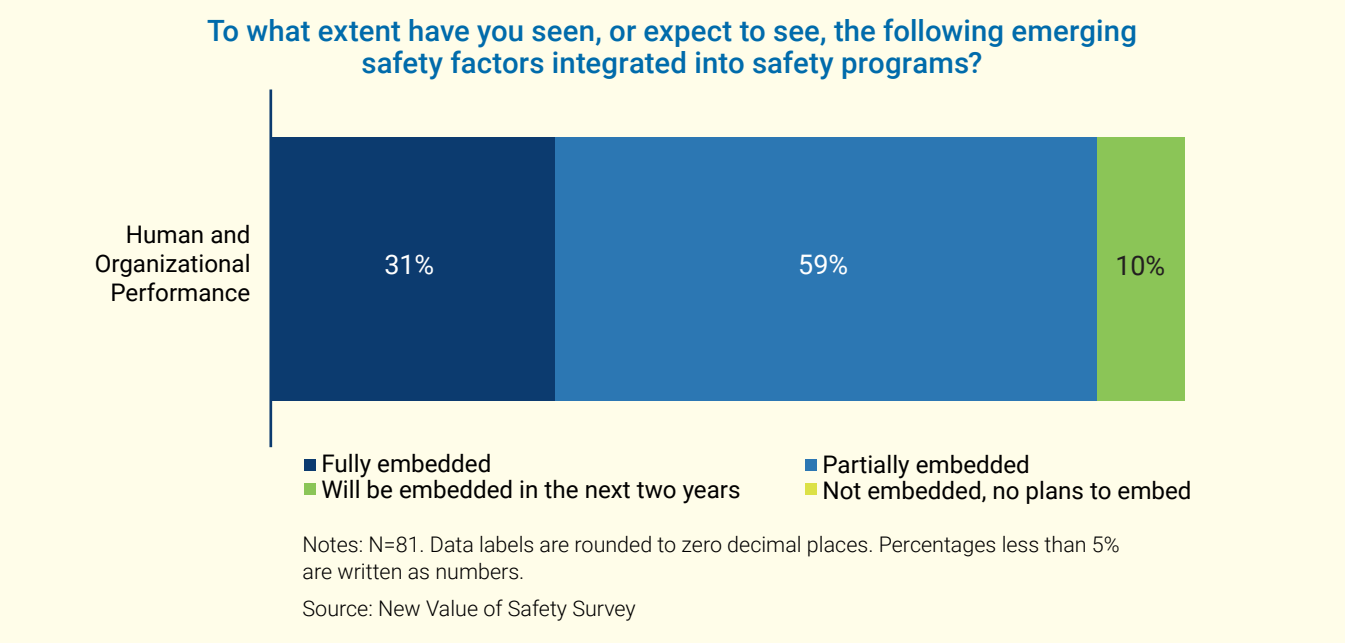


Figure 9. Integration of HOP in Safety Programs. As noted on page 11, the survey cohort skewed toward higher-maturity organization representatives.

Framework Coverage

The framework assessment revealed there is little focus on HOP, with only the UN Sustainable Development Goals encouraging a holistic approach to safety that considers the broader social and environmental context in which organizations operate. For example, by working towards Goal Three (Good Health and Wellbeing), Goal Six (Clean Water and Sanitation), Goal Seven (Affordable and Clean Energy), Goal Eight (Decent Work and Economic Growth) and Goal Nine (Industry, Innovation and Infrastructure), organizations can improve safety outcomes for workers, while creating a culture encouraging continuous improvement and innovation.

Instead of being directly covered, many of the frameworks provide recommendations that align with the HOP philosophy, but do not reference this approach directly. For example, to improve safety outcomes most of the frameworks assessed an underlying no-blame safety culture that promotes proactive risk mitigation through PPE deployment and frequent EHS inspections and audits, all of which align with the HOP principles. The generic coverage of HOP across the frameworks further emphasizes it is not a program but a risk-based operating philosophy, which recognizes that human error is unavoidable and that an organization's processes and systems are greatly influenced by worker actions.

Total Worker Health

Definition and Context

The TWH concept, developed by NIOSH and adapted by many others, is defined as policies, programs and practices that integrate protection from work-related safety and health hazards with the promotion of injury and illness prevention efforts to advance worker wellbeing (NIOSH, 2016). These efforts may relate to wages, work hours, workload, work social issues, workers' families and their communities. This holistic understanding of EHS has partly arisen due to the COVID-19 pandemic, where the interconnectivity between how business is conducted and the quality of life for employees and communities has come to the forefront.

Organizations moving to recognize TWH are bolstering existing SIIF initiatives with mental health and psychological safety programs. However, they are facing obstacles as these different components of TWH are currently siloed between functions.

"Safety, HR, security and wellbeing personnel are all responsible for different dimensions of total worker health and companies are struggling to bring the functions together. No single employee can manage total worker health due to siloed specialism training programs." *– Director, Federal Agency*

Framework Coverage

With the rising importance of stress and burnout in the workplace, TWH initiatives have evolved past the purely physical aspects of safety to include mental wellbeing and psychological factors. NIOSH has developed a comprehensive program focused on promoting worker health and wellbeing through such initiatives. The program includes resources and tools for workers to prevent injuries and illnesses in the workplace while also improving overall worker wellbeing.

The framework assessment indicated that TWH is mainly addressed through physical safety measures, particularly in the form of preventing SIIFs. However, there is an increasing focus on promoting a positive organizational culture that enhances safety, health and wellbeing initiatives to sustain and improve TWH in the workplace. For example, ISO 45001 aligns with TWH initiatives by offering requirements to identify and manage risks to both worker health and wellbeing. The assessed frameworks offer ample support to minimize physical hazards, improve worker security and productivity, and lower rates of psychological distress and mental health problems.

Serious Injuries, Illnesses and Fatalities

Definition and Context

SIIFs are contributors to a significant reduction or total loss of human health. These can be a permanent impairment or life-altering state, or an injury that if not immediately addressed will lead to death or permanent or long-term impairment. SIIF management has long been, and remains, a core element within EHS, focusing on preventing events such as fatalities, missing digits, limbs, permanent partial or total loss of hearing, sight or poisoning leading to long-term or complete loss of productivity. It is worth noting, however, that performance in preventing SIIF events is not necessarily correlated one to one with performance in other safety outcomes (including "minor" injuries) and vice versa.

SIIFs are usually straightforward to measure and may lead to worsened brand reputation, higher worker turnover, higher premiums and a more unstable company due to ongoing workers' compensation payments and litigation. Technologies such as connected safety solutions, portable gas detection devices and real-time risk management systems are providing EHS personnel with the ability to proactively measure and reduce SIIF risks.

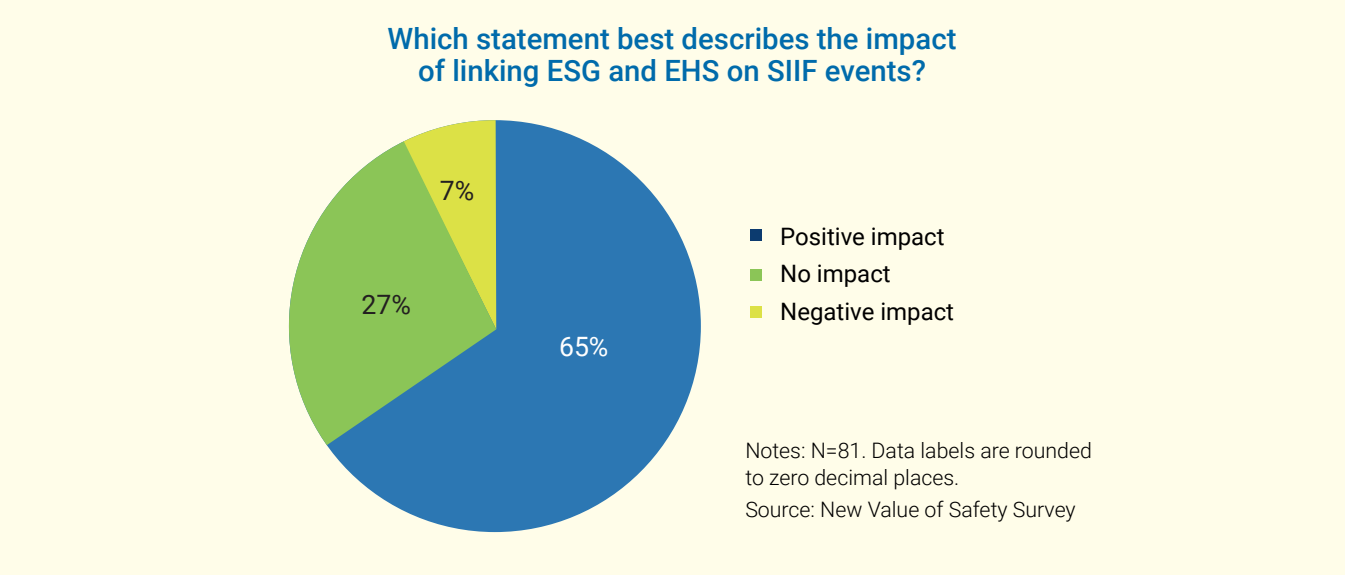


Figure 10. Benefits of Linking ESG and EHS on SIIF Events

Linking ESG to EHS creates a range of benefits for SIIF event reduction (see Figure 10). Increasing disclosures on SIIFs improves transparency and drives commitments to reduce incident rates due to increased shareholder and stakeholder pressure. ESG also facilitates good governance and work practices, which support gradual SIIF reduction.

"With the right methods and communication, EHS can set objectives for ESG. EHS assists in identifying the system's issues, and the EHS and ESG departments can develop solutions to reduce SIIF events or any other safety-related concerns." *– Chief Sustainability Officer, Mining Company*

SIIF EHS Value Creation

Focus Level	Value of Safety	Rationale
Primary Value Creation	Health	SIIF reduction initiatives and active risk mitigation and eradication improve the physical, mental and social wellbeing of workers.
Secondary Value Creation	Economic	SIIF management and avoidance offsets potential fines, legal fees and workers' compensation costs. Serious incidents and negligence can result in noncompliance and loss of social license to operate having signicant financial impacts. Beyond cost avoidance, worker productivity is seen to increase in safe environments.
Tertiary Value Creation	Resilience	Teams with robust systems for reducing SIIFs will be better able to withstand disruption and overcome challenges while reducing exposure to legal and financial risk.
	Ethics	Organizations focused on reducing SIIFs will see greater trust and participation in safety-related activities, with executive buy-in improving organizational safety culture and trust.
	Society	SIIFs have far-reaching consequences impacting colleagues, families and communities. Commitment to and investment in risk mitigation and eradication will reduce the negative impact of an organization on society.
	Reputation	SIIFs can tarnish the brand perception of the organization, impacting employee retention and attraction, and inhibit access to finance. SIIF reduction will reduce the risk of non-compliance and help maintain and win new business.
	Sustainability	SIIFs are a key ESG and sustainability metric, the reduction of which will provide valuable improvements to ESG ratings for organizations, with benefits to financing and insurance. As ESG reporting maturity on safety increases, we expect to see a greater focus on proactive leading indicators.

Figure 11. EHS Value Generated Through SIIF Management

Framework Coverage

SIIFs and the associated processes and mitigation strategies are extensively covered in regulations and standards that are expected to receive only minor updates over the next five years. Guidance on SIIF reduction is provided in five out of the ten frameworks assessed in this study.

ISO 45001:2018: Managing a robust occupational health and safety program

- Provides information on the benefits of effective SIIF-reducing occupational health and safety programs, including reduced absenteeism, lower insurance costs and improved worker morale. It also shares recommendations on how to consistently implement mitigations by leveraging a hazard assessment and risk-based methodology.
- The framework is not globally mandated, and its complexity and resource intensity mean some organizations find it challenging to implement.

GRI 403 and Corporate Knights Sustainability Rankings: Benchmark performance

- Both frameworks incorporate metrics on SIIFs and related lost time due to injury, helping organizations to gather information on their management systems, policies, processes and KPIs to compare their performance with peers and make improvements.
- The content of these frameworks is focused on reporting in a consistent, comparable format rather than offering guidance on implementation.

INSHPO: Standards for EHS professionals

- Covers 69 competencies related to EHS, including SIIF reduction, focused on knowledge, skills, behavior and ethical values. It emphasizes the importance of developing capabilities in communication, risk management, and how health and safety interact with the broader operational environment.
- Implementation is resource-intensive, focused primarily on EHS professionals and legally-required safety-related activities, and offers little guidance on proactive SIIF reduction measures beyond compliance.

ISO 26000:2010: Guidance on social responsibility

- Provides guidance on social responsibility risks associated with operations, including those related to SIIFs. Encouraging the implementation of effective management systems for social responsibility, engaging stakeholders in dialogue and encouraging the use of PPE to support SIIF reduction.
- This standard lacks a specific focus on SIIF reduction and can be seen as more targeted at improving external perception as opposed to driving internal change.

Recommended Initiatives and Programs

A consistent theme throughout the quantitative and qualitative surveys was the importance of having safety champions and a strong safety culture within an organization. These individuals need to be able to bridge the communication gaps between SIIF-risk employees and C-level executives and help both stakeholders understand the benefits of safety initiatives.

"We developed Behavioural Based Safety programs and foster a safety culture among all employees so every individual can contribute to the safety management program. We do this through participation, consultation, skill development and employee involvement in risk assessments, and incident and near miss reporting activities."
– Head of EHS, Steel Producer

The extensive coverage of SIIF reduction initiatives in various frameworks and standards list a number of areas to address and provide high-level guidance for program implementation:

- Leverage global benchmarks and public or private targets on SIIF reduction provided by industrial peers using standardized metrics to set targets and track performance
- Educate workers and safety leaders on hazard identification and SIIF risk mitigation processes
- Encourage continuous learning and safety feedback as part of incident investigations and root causes analyses
- Foster a genuine safety culture, where the reporting of safety incidents and ethical conduct are deeply understood in relation to reducing SIIFs in the workplace
- Create a communication bridge between executive leadership, safety managers and workers most at risk of SIIFs to ensure safety becomes everybody's job
- Engage external stakeholders such as customers, investors, insurers and the wider community to promote a shared sense of social responsibility to address EHS issues, such as SIIFs
- Assess the applicability of EHS technologies and employee wearables and their ability to reduce significant workplace risks

Metrics and Key Performance Indicators

The lengthy history of organizations managing SIIFs has resulted in broadly understood and adopted metrics, although these have traditionally been viewed in relation to litigation costs in the wake of SIIF-related incidents.

"There was a shift about 10 years ago – beyond leading indicators like training, near misses, leadership engagement and presenting these on dashboards. Now, we're seeing real value in looking at compliance issues and incident rates and tying these together with workers' compensation costs."
– Chief Strategy Officer, EHS Software Company

Despite being considered lagging indicators, conventional metrics are still widely used to track SIIFs. These metrics include:

- Lost time due to injury
- Occupational fatalities
- Hours of safety training
- Rate of usage of PPE for relevant tasks
- Litigation costs due to SIIF events
- Workers' compensation costs
- Time taken to report SIIFs

However, with advances in technology allowing for the tracking and aggregation of data for reporting on PPE compliance, training, near misses and incidents, EHS professionals and senior leaders are provided with leading indicators that offer greater visibility into their SIIF-risk operations. These leading indicators include:

- Rate of engagement with safety culture surveys that assess areas of improvement
- Near miss reporting and root cause analysis recordings
- Worker engagement indicators e.g., participation rates
- Job hazard analyses and safety inspections
- Number of safety-related reports/work orders and time to complete from identification
- Monitoring and tracking equipment reliability, process control and asset integrity to understand and prevent failure
- Contractor hiring requirements e.g., certifications
- Percentage of equipment downtime
- Number and frequency of corrective actions (elimination, substitution, engineering controls)
- Percentage of senior personnel overlooking critical design review and operatory actions
- Number of repeat findings

By focusing on leading indicators, organizations can take proactive and predictive steps to prevent SIIFs rather than simply reacting to them after they have already occurred.

Mental Health

Definition and Context

Mental health is defined as a state of mental wellbeing enabling people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community (World Health Organization, 2022).

"At the core of every thriving business is people. If they aren't safe and healthy and if they lack a sense of wellbeing, they won't be at the top of their game, and neither will their organization."
– CEO, EHS Management Consultancy

Employers are starting to recognize the negative impact employee mental distress has on productivity, profits and overall worker health. Prior National Safety Council studies have shown significant relationships between mental health and physical safety, including that work injuries are more common among workers who experience more frequent and significant symptoms of mental health problems. A recent NSC survey of 1,500 working adults between April and May of 2023 found the average rate of injury increased from 12% for workers with no clinically significant symptoms of depression to 53% amongst those with severe depression; a similar relationship was found with anxiety symptoms. Eighty percent of the 81 respondents in the New Value of Safety survey said mental health was already fully or partially embedded into safety programs. Furthermore, 51% of respondents placed mental health and wellbeing as one of their top two priority safety risk factors (see Figure 12).

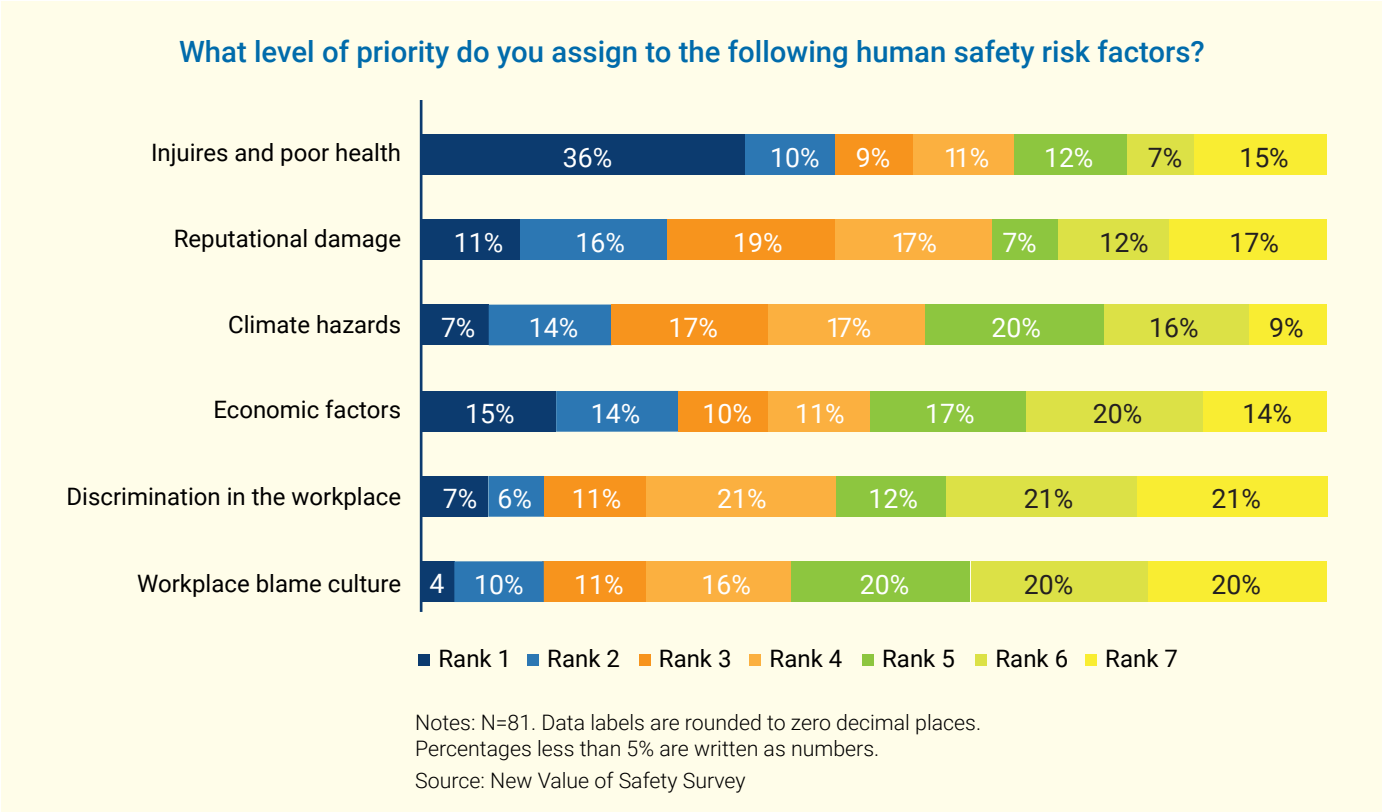


Figure 12. Priority of Mental Health Across Safety Risk Factors

Mental Health EHS Value Creation

Focus Level	Value of Safety	Rationale
Primary Value Creation	Health	Mental health promotion safeguards worker wellbeing, focusing on reducing stress and burnout and promoting productivity.
	Sustainability	Proper consideration of mental health empowers workers to manage it actively and openly, thus promoting a more sustainable work environment.
	Society	Supporting mental health provides a greater work-life balance by minimizing work-related stress, improving the standard of living and offering positive contribuitions to wider society.
Secondary Value Creation	Economic	Improved worker wellbeing and health drives enhanced work quality and productivity.
	Resilience	Greater capabilities and support for workers enable them to handle adverse situations, such as stress or trauma and to adapt to new challenges.
	Reputation	Prospective employees, investors and stakeholders are increasingly considering mental health KPIs when considering working at, investing in or purchasing from an organization.
Tertiary Value Creation	Ethics	Managing worker wellbeing and mental health is a focus across ethical operating and supply chain practices.

Figure 13. EHS Value Generated Through Mental Health Initiatives

Framework Coverage

HR functions, EHS teams and senior executives are being tasked with implementing mental health and wellbeing strategies. In doing this, they are looking toward recognized standards and government regulations for guidance. Such guidance is provided by five out of the ten frameworks assessed in this study.

CAN/CSA Standard Z1003-13: Implementing a psychological safety management system

- Provides preventative and proactive measures and reporting procedures that minimize work-related hazards including mental health and HOP principles, such as the implementation of a psychological health and safety management system – used to identify and mitigate hazards affecting the psychological or mental health and safety of employees in the workplace. The framework covers mental health resources, infrastructure, event management and training across EHS and ESG business functions.

- This framework is not mandatory and its complexity and resource intensity means some organizations may struggle to put recommendations into practice.

ISO 45003:2021: Managing mental health risks as part of EHS

- Provides guidance on managing psychosocial risk within an EHS management system based on the recommendations within ISO 45001. It includes definitions, organizational responsibilities, implementation guidelines and examples to help organizations prevent work-related injury and illness while promoting wellbeing at work.

- This standard outlines a management system for managing mental health, but requires organizations to take responsibility for identifying and mitigating specific mental health risks.

UN Sustainable Development Goals: Mental health is an important pillar in sustainability

- Mental health represents an important pillar in this effort due to its direct impact on health and sustainable development, mentioned under goal three through targets for reducing mental health diseases and substance abuse. It also mentions goals four, eight, 10 and 11, relating to people with mental, intellectual and psychosocial disabilities.

- The SDG goals are extremely broad and do not consider local or regional challenges for addressing mental health issues, acting more as a wish list rather than providing clear guidance on how to improve organizational mental health.

GRI 403: Benchmark mental health performance with global peers

- Provides an ESG reporting framework on EHS issues, including mental health in workplaces. It aims to facilitate optimal physical and mental health by requesting organizations to provide a description of EHS processes contributing to the identification and elimination of hazards and an explanation of how they plan to maintain quality and access to such processes for workers.

- This framework does not directly require organizations to implement services to improve mental health, but rather recommends reporting on existing services. As a result, organizations may lack the drive or focus to launch initiatives to drive improved mental health and improved mental health management.

INSHPO: Promotes awareness of EHS risk management alongside mental health

- The framework promotes physical and mental health wellness through the development and implementation of hazard identification and risk mitigation processes.

- While the framework provides guidance on the roles and expectations of EHS specialists and their responsibilities with regard to mental health, the framework does not provide clear guidance on how to improve or implement mental health initiatives.

Recommended Initiatives and Programs

To deliver improvements in mental health, organizations need to adopt and embed systems and processes to identify and recognize mental health challenges. Critically, these must be accompanied by investments in initiatives or services that can help address emerging mental health challenges. At the same time, there needs to be a leadership-championed program to normalize the need to monitor and manage mental health. This will help break down some long-established negative notions toward the discussion of mental health.

"While firms are taking steps to address cultural barriers, not enough is being done to truly embed mental health in day-to-day work culture. There is still a stigma around mental health, and people are not comfortable speaking up about issues. This leaves a gap between implementing mental health policies and practically improving mental health. Frameworks are able to offer theoretical steps for firms to implement policies that improve mental health but lack coverage in addressing cultural barriers to the problem."

– VP of Sustainable Finance Advisory at a Financial Services Firm

Fostering a safe and open working culture, where team members can speak openly about personal health issues or health risks, is vital to avoid exacerbating workplace health conditions. While the frameworks provide little actionable guidance on managing mental health within high-risk and/or high-stress workplaces, there exist actions for managers and executives to consider:

- Allow flexible working hours and job rotations
- Introduce continuous training plans and appraisals
- Offer substance misuse, addiction treatment and recovery support
- Implement processes to respond to issues that can impact the mental health and safety of workers
- Ensure stakeholder education, awareness and understanding in regard to the nature and dynamics of stigma, mental illness, safety and health
- Offer resources, such as counseling and support groups, to workers who are experiencing mental health difficulties related to the organization or from personal issues
- Provide information about factors in the workplace that can adversely affect mental health
- Identify potential critical events where psychological suffering, illness or injury is involved, or likely to occur, while respecting the confidentiality and privacy of all parties

Metrics and Key Performance Indicators

Mental health is challenging to measure as it relies heavily on self-reporting and subjective experiences and may be affected by factors outside the control of the worker's employer.

"Many environmental valuations and human capital data points come from surveys. This could be applied to safety, but I don't think this would always work so well for worker safety. Might be too much of an emphasis on 'on a scale of 1 to 10, how happy are you?'. This doesn't get very far and is not really actionable."

– Chief Strategy Officer, EHS Software Company

Academics and regulators are working on developing more robust metrics for measuring worker mental health, but metrics organizations can leverage to start measuring and reporting on mental health in workplaces are:

- Training and initiative uptake
- Awareness surveys
- Employee churn and burnout
- Surveys of worker satisfaction
- Gambling, substance misuse rates
- Employee assistance program utilization metrics
- Pharmacy benefit program audits
- Workers' compensation claims data

Psychological Safety

Definition and Context

Psychological safety provides individuals with a strong sense of inclusion amongst leaders and peers in the workforce. Individuals are given a space to learn, are empowered to challenge unsafe conditions and contribute diverse ideas without fearing negative consequences. Organizations create psychologically safe environments by intentionally fostering a culture where employees feel safe to speak up and by having policies and procedures that support the individual's promotion of safe practices. With an empowered workforce, individuals at all levels of the organization can support one another and promote reciprocal trust, ultimately saving lives.

"When you consider safety, you can no longer just consider physical safety. You now have to understand non-work-related aspects, such as how hard is it for the employee to get to work. What is their health profile? Do they have any illnesses? Do they have a family and support system outside of work? Without understanding this, you can't truly define worker safety." *– Director, Federal Agency*

Psychological safety isn't a new concept but one that has seen a resurgence in recent years due to the pandemic, demonstrating how closely connected it is to work life, productivity and overall worker health. However, with the rising focus on mental health and wellbeing, psychological safety remains a lower priority for organizations over the next two years when compared to other emerging safety factors (see Figure 14).

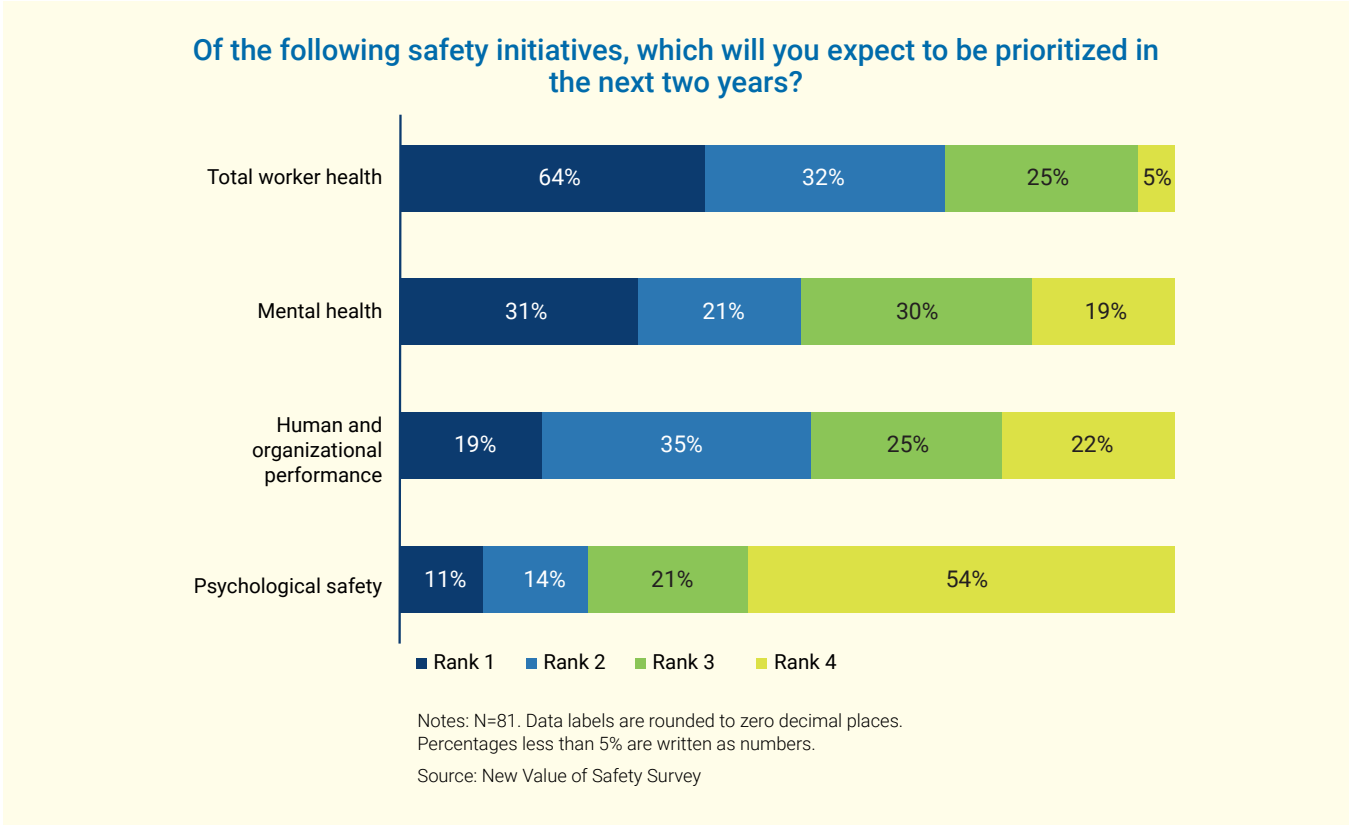


Figure 14. Lower Prioritization of Psychological Safety in the Next Two Years

Psychological Safety EHS Value Creation

Value Creation Level	Value of Safety	Rationale
Primary Value Creation	Health	Improved working conditions reduce the risk of mental health issues, stress and fatigue, which all can contribute to incidents in the workplace.
	Resilience	Psychologically safe environments strengthen communication and team culture, promoting agility and the ability to manage business shocks and challenges.
Tertiary Value Creation	Economic	Improved working environments promote happier workforces, which in turn increases employee retention, engagement and productivity while reducing absenteeism. This will positively impact business performance and revenues.
	Ethics	Psychologically safe environments enable employees to raise concerns without fear of retribution and increase accountability. When employees feel safe, they are more willing to share their ideas and challenges, and are more likely to make ethical decisions.
	Reputation	Prospective employees, investors and customers are increasingly considering psychological safety-related KPIs (e.g. culture, work-life balance and promotion opportunities) before making decisions.

Figure 15. EHS Value Generated Through Psychological Safety Initiatives

Framework Coverage

Standards impacting psychological health and safety in the workplace provide support across prevention, promotion, guidance and implementation of mental health and wellness initiatives and processes. Psychological safety guidance is provided in five of the ten frameworks assessed in this study.

CAN/CSA Z1003-13: Define a psychologically healthy and safe workplace

- Provides information on what employers can do to create psychologically healthy and safe workplaces to protect mental health, thus improving talent retention, employee engagement, productivity, safety and profits. The framework has a particular focus on implementing a psychological health and safety management system (PHSMS) and undertaking performance monitoring measurements to ensure objectives are met, psychological safety data is recorded, risk mitigation arrangements are operating effectively and workplace improvement opportunities are identified.

ISO 45003:221: Improve psychological safety through better job satisfaction and productivity

- Provides information on how to recognize the psychosocial hazards that can affect workers and the economic impact of psychological safety on an organization and society.
- The framework acknowledges the lack of trained workers to manage psychological health and therefore offers top-level actions to manage hazards.

INSHPO: The role of psychological safety in an EHS professional's work

- INSHPO stipulates that EHS practitioners are expected to have an understanding of the principles of psychological safety and a basic grasp of how to implement standard procedures addressing these risks. EHS professionals on the other hand require more comprehensive knowledge, requiring the ability to integrate, adapt and apply psychological safety themes and actions to all relevant areas and situations.
- The framework does not provide clear guidance on how to improve or implement psychological safety-related initiatives but focuses on the safety professionals' responsibilities.

GRI 403: Reporting on worker-related hazards

- Provides guidance on mitigating "worker-related hazards," which includes psychosocial factors like verbal abuse, harassment and bullying.
- The framework acknowledges psychological safety-related hazards as part of a broader set of work-related hazards, resulting in non-specific recommendations.

UN Sustainable Development Goals: Psychological safety to promote peaceful and inclusive societies.

- Psychological safety is represented through goals to reduce all forms of violence, especially amongst the most vulnerable (e.g., children). It is mainly covered in goal 16, relating to monitoring the proportion of the population subjected to physical violence, psychological violence and sexual violence in the previous 12 months.
- The SDG goals are extremely broad and do not explore the impacts of psychological safety in the workplace.

Recommended Initiatives and Programs:

To deliver effective psychological safety improvements, organizations must encourage leader-engaged cultural change. This can be achieved by outlining clear objectives, measuring performance and ensuring leadership buy-in. Key areas to improve are risk mitigation, cost-effectiveness, recruitment and retention, organizational excellence and sustainability.

"When you consider workers, such as those in health care or rescue professions, they often put themselves at risk both physically and mentally during catastrophic events like flooding and fires. Responsible firms need to make sure relevant psychological treatment and initiatives are in place to support these workers."

– CEO, EHS Management Consultancy

Practical guidance on embedding psychological safety in safety programs is limited due to the immeasurable nature of the theme. Guidance tends to remain high level and leaves lots of room for interpretation. Of the assessed frameworks, only two provided advice on improving workplace psychological health and safety, which included:

- Perform regular staff meetings, surveys and informal discussions to learn what areas of the business need to be improved.
- Develop and regularly review written policy statements that clearly outline the organizations' intentions to improve psychological health. Formulate commitments to working collaboratively with employees to create and sustain a psychologically and physically healthy and safe work environment.
- Communicate policies with workers (verbally, emails, bulletins etc.).
- Assign leaders who are accountable for driving policies. If needed, hire new leaders with the ability to communicate policies to others within the organization. Organizations should ascertain the psychological safety awareness of prospective senior staff during the hiring process through scenario-based interviews.
- Organizations should ensure workers agree with policies and actively participate in the development, implementation and continual improvement of future psychological safety initiatives. Organizations can implement specific committees or sub-committees for psychological health and safety in the workplace to encourage participation and drive communication.
- Identify barriers to workplace safety by assessing hazards. Organizations should assess factors, such as current psychological support, organizational culture, civility and respect, job demands, growth opportunities, work/life balance and protection of physical safety.
- Set realistic goals to address identified barriers and communicate all actions to staff. For example, provide interventions like PPE and lone worker technology should employees raise safety concerns.
- Create an environment where workers are encouraged to speak up about their feelings, doubts and shortcomings. Workers should feel like a mistake can be made and reported without unnecessary repercussions. Organizations may wish to also further develop their training regimes to ensure workers are fully competent and confident so risks can be addressed before mistakes lead to SIIF events.
- Offer opportunities for employee growth and development through performance reviews and training.
- Determine the extent to which the PHSMS policy, objectives and targets are being met. Polices should be regularly reviewed and updated.
- The organization should encourage workers to take their entitled breaks (e.g., lunchtime, sick time, vacation time, earned days off, parental leave).

Metrics and Key Performance Indicators:

Psychological safety covers a broad range of topics that promote positive working environments, organizational resilience as well as enhanced engagement, performance and productivity. Psychological safety is not something an organization can achieve overnight, but rather a continuous process to improve employee wellbeing and culture. Therefore, it can be ambiguous and difficult to quantify.

"We perform engagement and wellbeing surveys annually to identify gaps in our safety programs, trends and improvement opportunities. Extra programs are put in place to drive improvement."

– Director of HSE, Footwear Manufacturing Company

Existing frameworks have provided simple metrics and guidance to help organizations better understand how they are currently performing and in turn, kick start their psychological safety journey. They include:

- Rate of absenteeism
- Rate of turnover
- Short-term disability (STD) and long-term disability (LTD) costs
- Worker engagement indicators e.g., participation rates

While there is no correct metric or action organizations can implement to "achieve" psychological safety, many performance-related steps exist that organizations can take to help improve employee morale and reduce absenteeism, including:

- Regular surveys to ensure policies are still relevant and improve worker safety
- End of employment interviews to understand employee turnover
- Data from social media websites and other websites e.g., Glassdoor, to better understand employee feelings
- Access to anonymous hotlines and staff suggestion boxes
- Employee and family assistance programs, which give workers access to free helplines when distressed
- Percentage of leadership actively promoting psychological safety best practices
- Baseline assessments of workplace determinants of psychological health (e.g., environmental, physical, job requirement, staffing levels)
- Psychological injury and illness statistics
- Return-to-work programs
- Incident numbers and the use of EHS mobile apps to drive incident and near-miss reporting
- Recognition and awards schemes, which include employee accomplishment awards and commitment to work awards
- Worker fair pay
- Respectful workplace policies
- Wellness programs
- Work/life balance programs

Environment, Social and Governance

Definition and Context:

ESG refers to issues that are identified or assessed in responsible investment processes. Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems. Social factors are issues relating to the rights, wellbeing and interests of people and communities. Governance factors are issues relating to the governance of companies and other investee entities (UN Principles for Responsible Investment, 2023). Safety falls across all three ESG pillars, and the growing recognition of mental health and DEI is providing more incentives for safety programs of this kind to be understood within the context of corporate ESG strategies. While external ESG ratings and scores are not being extensively leveraged to quantify and assess safety performance, safety professionals have an increasing role to play in ESG initiatives (see Figure 16).

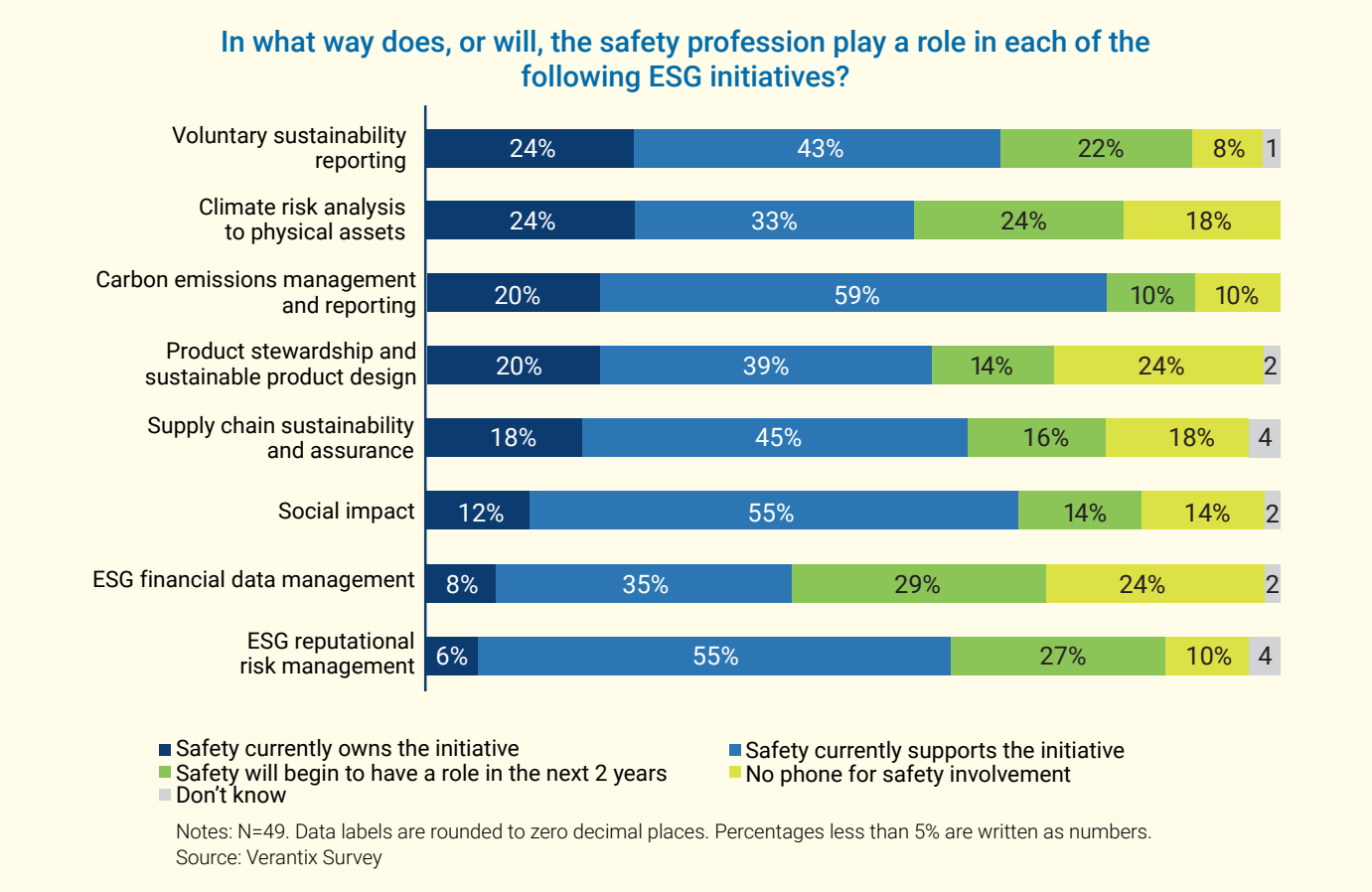


Figure 16. Role of the Safety Profession in ESG Initiatives

While safety and ESG are interconnected, decarbonization and plastic reduction remain the key focus for corporate ESG agendas. Although safety is yet to be fully incorporated into the context of ESG, it is starting to emerge through the lens of Human Capital as evidenced in the Capital Coalitions Natural Capital Protocol, and Social & Human Capital Protocol (Capitals Coalition, 2023).

Framework Coverage

Safety guidance across key ESG themes has risen as a result of global sustainability pressures and initiatives. The framework assessment revealed a widespread focus on ESG themes, such as gender equality, worker rights, health and wellbeing, reducing energy consumption and emissions, good governance, and commitment to laws and regulations.

Diversity, Equity and Inclusion

Definition and Context:

Diversity is defined as the characteristics of differences and similarities between people (ISO, 2021). Equity is defined as the principle that people should be subject to policies, processes and practices that are fair, as far as possible, and free from bias (ISO, 2021). Inclusion is defined as the process of including all stakeholders in organizational contexts (ISO, 2021).

> ***"Although safety comes under the 'S' pillar of ESG, corporate executives often only think of DEI issues. For many business leaders the 'S' is vague and poorly defined."*** *– CSO, EHS Software Company*

DEI remains an emerging safety area that is seen as partially embedded in safety programs compared to other ESG themes, including environment, sustainability and governance. Although nascent, DEI is a focus area for businesses to fully establish in their safety programs going forward and will receive increasing coverage as NSC and LRF plan to release dedicated studies on this theme later in 2023.

DEI EHS Value Creation:

Value Creation Level	Value of Safety	Rationale
Primary Value Creation	Sustainability	A diverse leadership team can ensure sustainability goals are kept within scope, and improve trust between stakeholders.
	Resilience	A diverse and inclusive leadership team can reduce siloed and one-track thinking, positioning the team more effectively to tackle problems and manage risks.
	Society	The full and effective participation and inclusion in society of all groups, including those who are vulnerable, provides and increases opportunities for all organizations as well as the people concerned.
Secondary Value Creation	Reputation	In the wake of the global pandemic, prospective employees are prioritizing DEI factors, along with work-life balance and wellbeing. Including a diverse team in company decision-making can enhance an organization's responsiveness to the preferences of an increasingly diverse customer base.
Tertiary Value Creationn	Economic	There is a demonstrated positive link between gender equality and economic and social development. Additionally, without a DEI agenda, discrimination in the workplace can lead to reduced productivity and higher employee turnover.
	Health	Without a DEI agenda, discrimination in the workplace can lead to mental illness.
	Ethics	A DEI agenda can increase trust and the perception of fairness amongst employees.

Figure 17. EHS Value Generated Through DEI Initiatives

Framework Coverage:

While regulatory coverage of discrimination due to protected characteristics (such as race, sex, religion, orientation, etc.) varies by geography, requirements are expected to become more stringent over the next five years (see Figure 18).

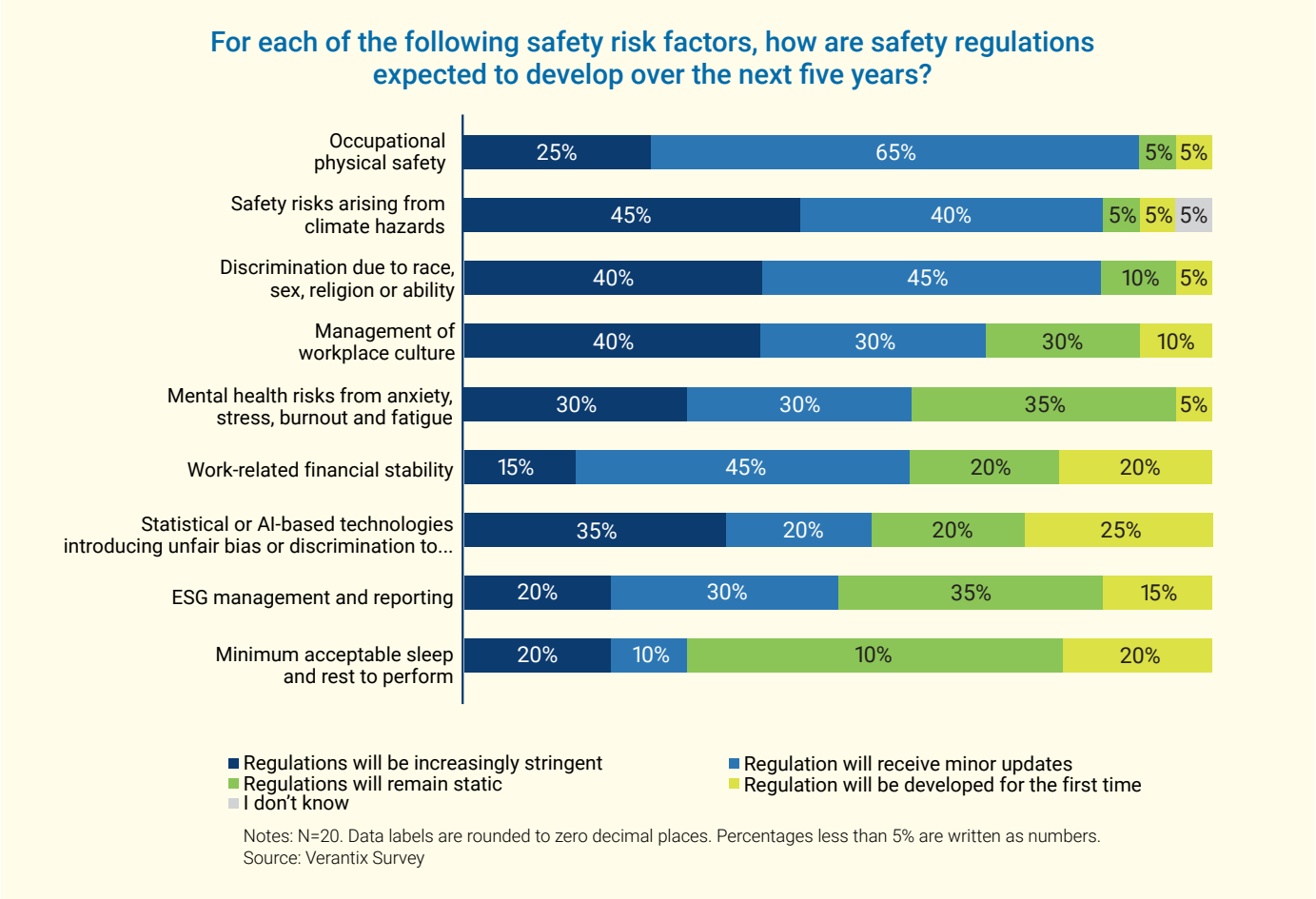


Figure 18. Increasing Regulations for DEI in the Next Five Years

DEI guidance is provided in six of the ten frameworks assessed in this study.

ISO 26000: Improve DEI with a focus on gender equality

- Provides information on the benefits of DEI as well as recommendations on principles and programs to uphold and undertake to improve equality. The framework has a particular focus on providing actions to target and eliminate gender bias and guide corporate DEI strategies.
- The framework does not include recommendations on metrics to track the performance of the DEI programs.

Corporate Knights Sustainability Rankings and Just Capital: Benchmark performance

- Both frameworks incorporate several DEI KPIs into their corporate social responsibility rankings. The criteria provided in these rankings can help identify relevant safety metrics to track and support external benchmarking across equality, diversity and turnover.
- These frameworks do not incorporate any implementation recommendations. Limited transparency was provided on the scoring methodology and criticism over ratings focused on the quantity of data instead of the quality of disclosures.

UN SDGs: Facilitate target-setting and sustainability planning

- DEI is incorporated in goals to ensure inclusive and equitable quality education and to promote lifelong learning opportunities for all (four), achieve gender equality and empower all women and girls (five) and reduce inequality within and among countries (10) of the UN SDGs. This framework can be used to guide sustainability planning and provide guidance on setting public or private performance targets for 2030.
- The UN SDGs provide guidance on global goals and do not provide recommendations relating to implementation or actions to achieve targets.

CAN/CSA Z1003-13: Integrate DEI into psychological safety programs

- DEI factors are important to consider when executing psychological safety programs supporting the unique needs across a workforce. This framework provides guidance on how to collaborate with employees to effectively roll out these initiatives.
- This framework does not provide any metrics or initiative recommendations and focuses primarily on psychological safety.

SASB: Industry-specific, and ESG-aligned reporting

- The extent to which DEI is covered in SASB differs between industries. For example, health care and biotechnology, tech, and financial and professional services standards incorporate several DEI metrics. However, these will be replaced by the ISSB standards in 2023 to create a building block approach for ESG reporting. These standards will allow national and regional jurisdictions to build upon global baselines and set additional standards serving their jurisdictional needs. The ISSB is utilizing a literature review and targeted consultations to explore how DEI is currently addressed in disclosures and how this can be improved.
- This framework does not provide any initiative recommendations.

Recommended Initiatives and Programs:

To deliver concrete DEI improvements, top-down/leader engaged culture change is essential. In conjunction with commitments from management, businesses should invest in training programs and flexible working policies that cater to the diverse needs of their employees.

> ***"Change should start with an announcement from the top management, followed by significant training and a non-monetary incentive mechanism. Part of this change should include putting in place alternative and flexible ways of work that are really designed for the needs of the employees, including people with families and kids."***
> *– VP of Sustainable Finance Advisory at Financial Services Firm*

While practical guidance on embedding the full breadth of DEI initiatives in safety programs is scarce, the assessed frameworks do highlight several key areas to address and provide considerations for program implementation, which include:

- Leveraging external benchmarks to set private or public diversity targets
- Reviewing the diversity (gender, race, orientation, etc.) split in an organization's governing structure and management
- Reviewing the treatment of different populations in recruitment, training opportunities and job assignments
- Ensuring equal remuneration for different populations for work of equal value
- Assessing differential impacts on different populations concerning workplace and community safety and health
- Ensuring organizational decisions incorporate equal consideration of the needs of different populations, such as appropriate PPE for both men and women
- Supporting individual workers to seek assistance internally or externally in consideration of the unique needs of diverse populations
- Ensuring different populations all benefit from the organization's contributions to community development
- Integrating ethical, social, environmental and gender equality criteria in its purchasing, distribution and contracting policies and practices to improve consistency with social responsibility objectives and targets

Metrics and Key Performance Indicators:

The expansive definition of DEI includes factors, such as culture and how workers are perceived by their employer, which are subjective and complex to measure.

> ***"Surveys of workers on satisfaction scores can help to tease out the value of the attributes of safety and understand the broader impact on worker families and communities."*** *– Technical Director, Consultancy Firm*

Despite these challenges that academia and standards bodies are working to mitigate, there are a range of simple metrics businesses can leverage to start evaluating, measuring and reporting on their DEI performance.

Diversity metrics:

- Non-males in executive management
- Non-males on boards
- Racial diversity among executives
- Racial diversity on the Board of Directors
- Workforce demographics (beyond gender and race including ethnicity, religion, age, sexual orientation, physical abilities and ideologies)

Equity metrics:

- CEO-to-median worker pay
- Wage violations
- Living wage
- Fair play score
- Fair play rating (living wage portion)

Policies and legal metrics:

- Discrimination controversies
- EEOC violations and worker grievance fines
- Diversity, equity and inclusion policies

Environment and Sustainability

Definition and Context

The environment is defined as the, "natural surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, people, outer space and their interrelationships" (ISO, 2010). Sustainability is defined as the ability of a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium and long term. Sustainability is a condition for a company to access over time the resources and relationships needed (such as financial, human and natural), ensuring their proper preservation, development and regeneration, to achieve its goals (IFRS, 2022). Environment and sustainability can be understood as, "the responsible management and protection of the natural world."

"When it comes to sustainability, credibility and reputation are critical topics. For example, due to reputational risks, banks won't finance a company that has sustainability controversies or conflicts."
– VP of Sustainable Finance Advisory at a Financial Services Firm

Environment and sustainability is already fully or partially embedded in safety programs due to established areas, such as chemical compliance and waste and water management already sitting within the environment, health and safety wheelhouse. Environment and sustainability is a high priority to be incorporated into safety programs over the next two years, above other ESG initiatives such as DEI, ESG and reputation management, and social and governance (see Figure 19). This is likely due to the growing focus on GHG emissions management and climate risks from stakeholders and regulatory bodies.

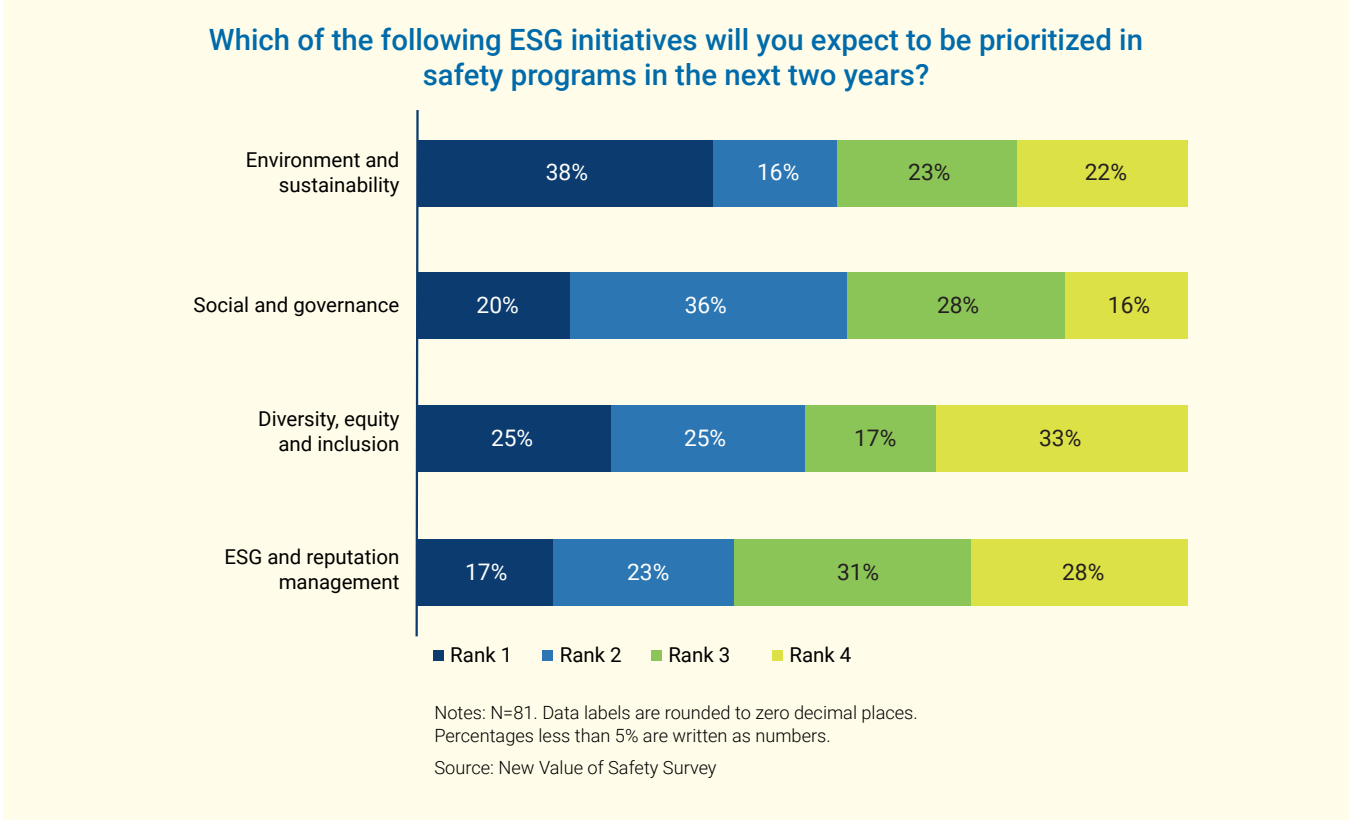


Figure 19. Prioritization of ESG Initiatives in Safety Programs

Environment and Sustainability EHS Value Creation:

Value Creation Level	Value of Safety	Rationale
Primary Value Creation	Environment	Safety initiatives that incorporate environment and sustainability directly benefit the natural environment. For example, by incorporating waste reduction initiatives and regenerating natural spaces.
	Economic	Organizations can gain a competitive advantage by meeting customer demands for sustainable products as well as investor demands for organizations to set strong decarbonization targets and policies.
	Health	Maintaining air and water quality directly impacts human physical health.
	Sustainability	Safe and sustainable operations are integral for maintaining a sustainable economy and society for all.
	Reputation	Environmental degradation, resource abuse and pollution event controversies can negatively affect an organization's reputation and credibility.
Secondary Value Creation	Resilience	Corporate environment and sustainability agendas often include ESG risk and climate risk management, which helps to develop resilience.
	Ethics	Ethical business practices are integral to environment and sustainability initiatives, such as due diligence practices across human rights, worker conditions as well as environmental protection.
	Society	By sustaining natural capital, community wellbeing can be preserved. For example, time spent in green spaces can benefit mental health.

Figure 20. EHS Value Generated Through Environment and Sustainability Initiatives

Framework Coverage:

Environment and sustainability guidance is provided in five out of the ten frameworks assessed in this study.

ISO 26000: Inform sustainability decision-making

- Unpacks the following environmental issues: pollution prevention, sustainable resource use, climate change mitigation and adaptation as well as biodiversity and natural habitat protection. It lists actions for corporate executives on these topics and recommends using the ISO 14000 series as technical tools to further assist organizations in systematically addressing environmental issues. By giving clear strategy and action suggestions for organizations, this framework can be deployed to shape sustainable decision-making and strategic planning.
- The framework does not include recommendations on metrics to track the performance of environment and sustainability programs.

Corporate Knights Sustainability Rankings and Just Capital: Benchmark performance

- Both frameworks incorporate several environment and sustainability KPIs into their corporate social responsibility rankings. The criteria provided in these rankings can help identify relevant safety metrics to track and support external benchmarking across GHG emissions, water and waste management.
- These frameworks do not incorporate any implementation recommendations. Limited transparency was provided on the scoring methodology and criticism over ratings that are focused on the quantity of data instead of the quality of disclosures.

UN SDGs: Guide sustainability strategy coverage

- Environment and sustainability themes are incorporated across the UN SDGs, but they are crucial to the following: ensure access to affordable, reliable, sustainable and modern energy for all (seven), promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (eight), build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (nine), ensure sustainable consumption and production patterns (12), take urgent action to combat climate change and its impacts (13), conserve and sustainably use the oceans, seas and marine resources for sustainable development (14) and protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (15).
- The UN SDGs provide guidance on global goals which can be used to guide sustainability strategies, but they do not provide recommendations relating to implementation or actions to achieve targets.

SASB: Industry-specific and ESG aligned reporting

- Although sustainability reporting is at the core of the SASB standards, the extent to which environment and sustainability metrics are included varies across industries, with GHG emissions management, water, waste and energy management addressed to differing levels of detail. For example, energy-intensive or heavily polluting industries including manufacturing, construction and transport, must report direct scope one emissions. The SASB standards are being built upon and replaced by the ISSB standards in 2023 to create a building block approach for ESG reporting. These standards will allow national and regional jurisdictions to build upon global baselines and set additional standards serving their jurisdictional needs. The ISSB will incorporate climate-related disclosures from the TCFD recommendations.
- This framework does not provide broader guidance on corporate sustainability topics or suggested action points.

Recommended Initiatives and Programs:

Concrete actions to enhance natural spaces, reduce pollution and mitigate negative environmental impacts must be connected with cultural change and ambition from executive leaders to drive safety and sustainability success.

"Boots on the ground environmental remediation is important for corporations and action starts with cultural change, including allocating safety champions." *– Technical Director, Consulting Firm*

Businesses should leverage materiality and risk assessments to understand their corporate impact and identify priority initiatives. ISO 26000 provides an extensive list of approaches and strategies that organizations should assess and employ as part of their environmental management activities. Recommendations include general approaches as well as specific action points for pollution prevention, sustainable resource use, climate change mitigation and adaption, biodiversity and natural habitat restoration. Hence, corporate executives should drive boots-on-the-ground environment and sustainability action with the practical, specific guidance provided in ISO 26000 while ensuring this is backed up by cultural change and ambition from executive leaders.

Metrics and Key Performance Indicators:

As environment and sustainability is a broad topic, there are a range of metrics available that businesses can leverage to start evaluating, measuring and reporting on performance across their material issues.

Air Pollution

- NOx productivity
- NOx emissions
- Sox productivity
- Sox emissions
- Air pollution (pollution reduction portion)
- Particulate matter productivity
- Particulate matter emissions
- Mercury emissions
- Lead emissions to the air

Water and Waste

- Water productivity
- Total water withdrawn
- Total volume of water withdrawn from groundwater
- Total volume of water withdrawn from surface water
- Water consumption
- Percentage of total water withdrawn in regions with high or extremely high baseline water stress
- Waste productivity
- VOC productivity
- Resource use (resource efficiency portion)

Energy and Emissions

- Renewable energy percentage
- Energy productivity
- GHG productivity
- Scope one and two greenhouse gas emissions

Sustainability Policies

- Clean revenue
- Clean investment
- Climate commitments (climate change portion)
- Sustainability pay link
- Supplier sustainability score
- Sustainable products and services (sustainable products portion)

Ethics and Governance

Definition and Description

Ethics is a guiding principle that implies moral conduct and honorable behavior, showing consideration to the rights and interests of others (Verma, S. and Prakash U.M., 2011). Business ethics attempts to apply moral norms and values to business procedures and institutions (Tayşir and Pazarcık, 2013). Governance refers to all processes of governing, the institutions, processes and practices through which issues of common concern are decided upon and regulated. Good governance adds a normative or evaluative attribute to the process of governing (United Nations Human Rights Office). In a well-functioning business, the ethics of an organization are cemented and protected through its governance structure.

"Since the pandemic, it is more important than ever to think holistically about business performance. As a result, ESG and EHS should be ready to face the difficulties of creating ethical and sustainable businesses by enhancing health and safety." *– ESG and Sustainability Senior Consultant, Financial Services Firm*

Ethics and governance are elements increasingly featured in safety programs. Social (which can be considered a close proxy for ethics) and governance initiatives are already fully embedded into safety programs among 40% of the respondents we spoke with in this study (see Figure 21).

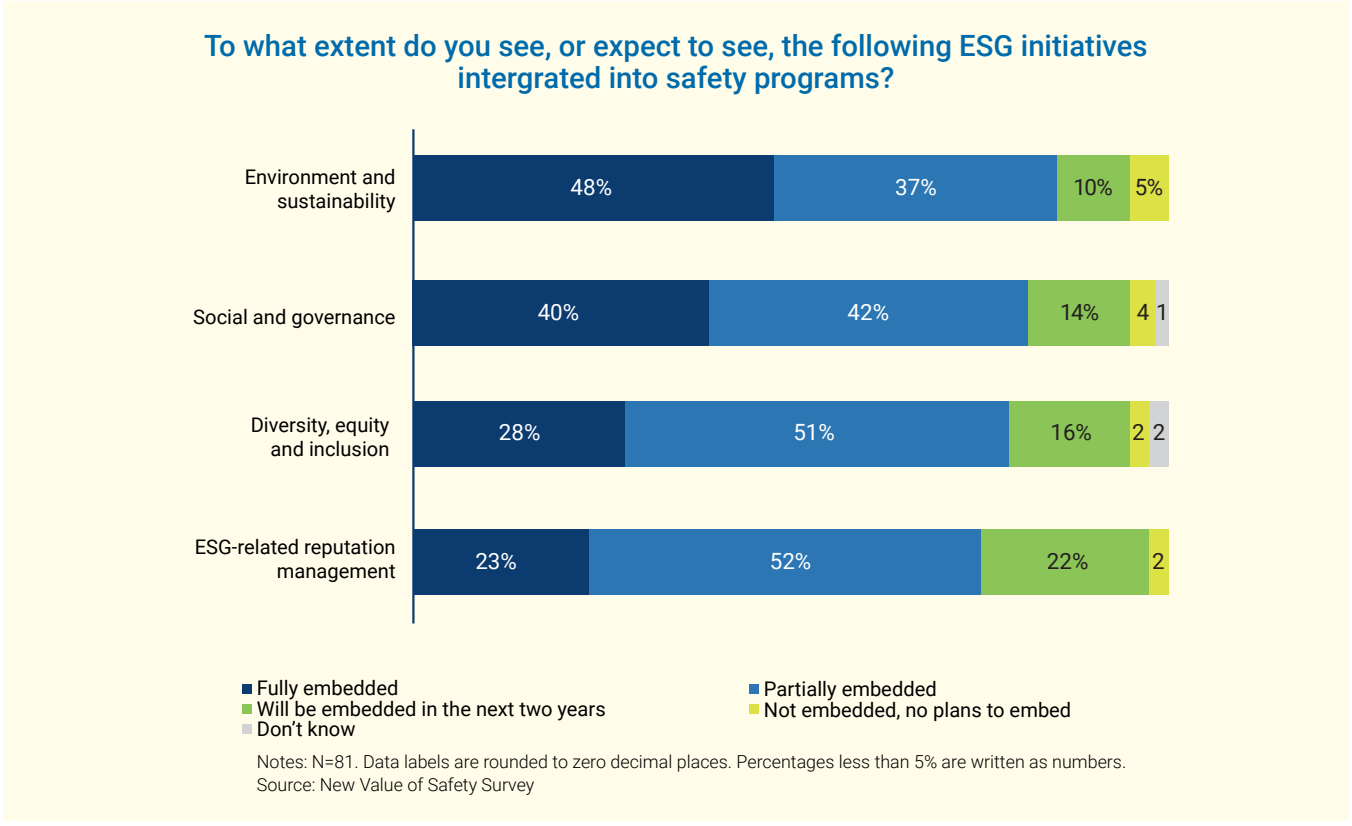


Figure 21. Integration of ESG Initiatives into Safety Programs

Ethics and Governance EHS Value Creation

Value Creation Level	Value of Safety	Rationale
Primary Value Creation	Ethics	Having a considered set of ethics that drives and influences the governance structure of an organization will promote increased trust among employees and other stakeholders.
Secondary Value Creation	Health	An ethical and well-governed company does not cut corners for short-term gains and thus reduces the risk of injuries, fatalities or poor health for workers, customers and the community.
	Economic	Organizations with strong ethics and governance structures are increasingly attractive to investors who view poor performance in these areas as an enterprise risk. A robust ethics and governance regime also drives best practices by employees and other stakeholders, reducing the risk of non-compliance fines or operational shutdowns.
	Environmental	From decisions around product design to the approach to managing environmental risks, well-considered ethics and governance structures reduce the risk of environmental harm and can promote environmental benefits.
Tertiary	Sustainability	An organization with ethical principles will typically recognize the value of sustainability and through a strong governance structure, will truly commit to the sustainability goals of the organization.
	Resilience	Strong ethics and governance promote decision-making for the long-term success of the organization.
	Society	An organization with strong ethics and governance will better avoid society-harming practices, such as fraud, corruption or exploitation.
	Reputation	Organizations with strong ethics and governance will be better able to build trust with the community, investors, insurers and customers.

Figure 22. EHS Value Generated Through Ethics and Governance

Framework Coverage

Adopting appropriate ethical standards and particularly adopting a robust governance approach is already controlled by legislation in many jurisdictions across the world. Guidance on ethics and governance is also provided in three of the ten frameworks assessed as part of this study:

INSHPO: Establishing an ethical safety culture

- Covers 69 competencies related to occupational health and safety, including guidance for setting corporate direction for occupational health and safety by applying high-level strategic skills, and bringing in leaders who influence and mentor internal and external stakeholders. This is to develop an emphasis on critical risk identification and management and ethics and governance through encouraging the promotion and management of safety culture and sustainability.

- Implementation is resource-intensive, focused primarily on EHS professionals and legally-required safety-related activities, and it offers little guidance on proactive ethical and governance measures.

ISO 26000:2010: Improving external perceptions of ethics and governance

- Provides guidance on creating and managing a sustainable, socially and environmentally-responsible organization, including worker safety, human development and social dialogue. It examines the fundamental impact of ethics and governance in an organization establishing and sustaining legitimate and productive relationships between workers, communities, customers, investors and regulators.

- This framework can be seen more to improve the external – ethical and governance – perception of organizations rather than driving internal change to support the new value of safety.

ISO 45001:2018: Creating robust and ethical EHS programs

- Provides guidance for workplace health and safety, offering detailed guidance on creating and managing effective EHS programs, reducing workplace incidents, absenteeism, reducing insurance costs, health and safety culture and morale. Standardized implementation and metrics provide external viewers the ability to benchmark against peers and assess ethics and governance, find gaps in safety programs and promote communication across an organization.

- This framework is voluntary, and its complexity and resource intensity mean some organizations may not be able to implement it.

Initiatives and Implementation Programs

While leadership buy-in is a critical first step, there are additional implementation programs available to organizations to encourage ethical practices and to establish good governance of operations:

- Encourage a company culture with freedom to express concerns and raise questions, to ensure issues are reported, and where there is trust and transparency across all stakeholders
- Develop a sense of ownership at every level of the enterprise, such that the ethical impact and benefits from good governance of the organization are shared by workers, managers and executives
- Establish a documented risk mitigation process, including hazard identification, hazard elimination, assessments of risk levels for the hazards, preventive and protective measures and risk controls
- Unify executive business functions such that safety-related ethical, governance and other safety activities are harmonized

Metrics and Key Performance Indicators

Measuring ethical and governance safety-related performance is similarly difficult to measuring ESG and sustainability performance. However, some established techniques to gauge sentiment and report on such performance are as follows:

Ethics metrics:

- Community discussion groups
- Paid sick leave
- Fines paid
- Sanctions deductions

Governance metrics:

- Employee satisfaction surveys
- CEO-average employee pay
- Tax paid
- Employee turnover
- Pension fund quality

Recommendations and Conclusion

- Assess the extent to which your strategy, policies and procedures address the full scope of modern EHS beyond physical safety and short-term environmental impacts*
- Review your activities against key safety frameworks to align and identify the coverage gaps with respect to legacy and emerging EHS themes
- Perform a holistic assessment, including materiality and risk analyses, to identify how these themes impact workers in your organization and the value they can generate to support initiative prioritization*
- Engage relevant functions to update the overarching safety and sustainability strategy, align with key frameworks and assign KPIs to track performance
- Develop programs (such as TWH or the pillars of ESG) to establish a hierarchy of accountability and organize workstreams (such as mental health or DEI initiatives)
- Create cross-functional committees to eradicate siloes between safety, ESG and HR, and designate Safety Champions to drive ownership of and engagement with the safety strategy
- Develop a transformation and investment plan focused on value creation to gain leadership buy-in and support and encourage a leader-engaged safety culture
- Create an implementation plan and delegate ownership of specific activities at the functional and individual levels that will close the targeted gaps in your safety program*
- Develop a communication program to roll out the New Value of Safety program and the benefits this will drive, leveraging training and engagement tools to drive adoption
- Establish mechanisms enabling learning and feedback loops that drive continuous improvement and increase the agility and impact of safety programs*

Recommendations that include an asterisk are suggested for those just beginning their journey.

In addition, this research has been leveraged to develop a targeted Activation Guide for stakeholders to support continuous improvement and help organizations evolve with the changing landscape of EHS available on the NSC website. This guide enables businesses to address safety holistically and mitigate risks from multiple directions. Regardless of current maturity level, there is an opportunity to benefit from this approach. This Activation Guide serves to drive action on several fronts, as shown in Figure 23 below:

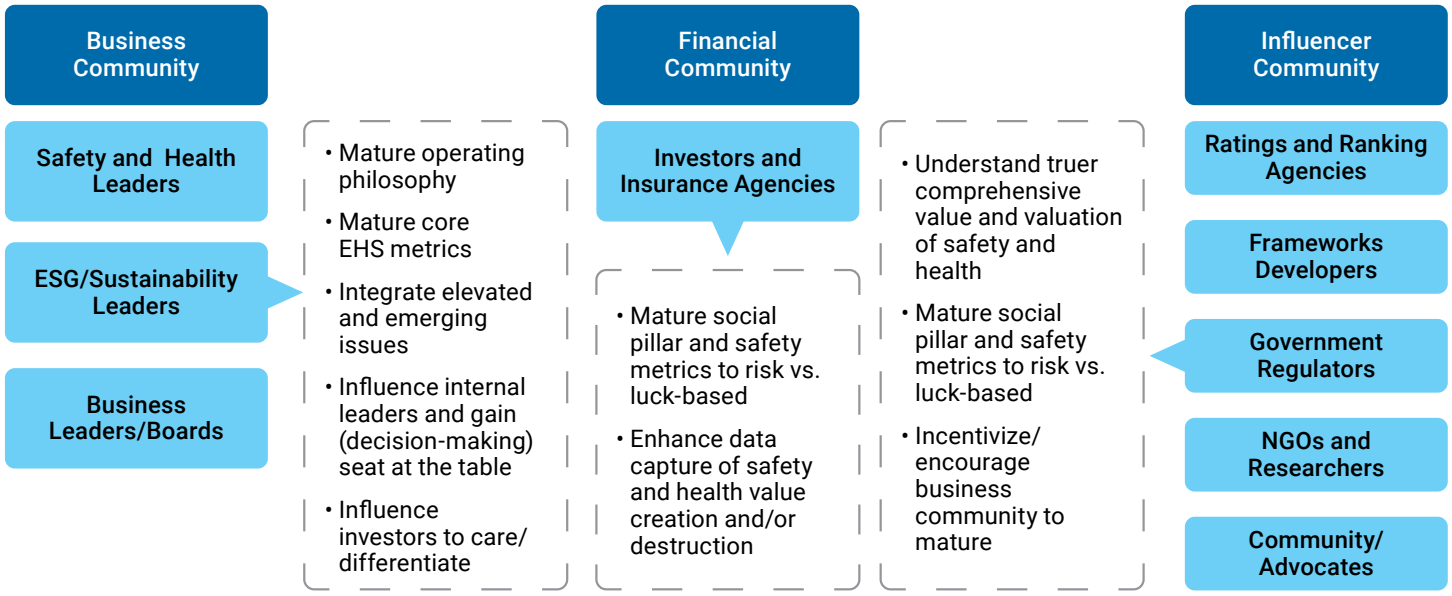


Figure 23: New Value of Safety Stakeholder Actions

Future Direction

The New Value of Safety Report represents a first step toward a more comprehensive understanding of the state of safety in the present day, as well as a more nuanced and impactful conversation with respect to its positioning within emerging topics, such as ESG and DEI. However, numerous gaps have been identified throughout the research and analysis contributing to this work. NSC and Lloyd's Register Foundation will continue to conduct research, convene stakeholders and educate leaders on these critical topics – and we encourage other researchers, business leaders, investors, insurers, NGO and government leaders, and subject matter experts to do the same.

Some of the activities NSC is considering for the future include:

- Continued research and analysis on the landscape of ESG and other critical topics, including the publication of an annual "Forecast" report on the state of EHS and the Future of Work
- A suite of impact mapping and valuation guides for a wide array of EHS programs and initiatives, assisting organizations in expressing the true value of their EHS activities in the context of ESG and beyond
- A guided, interactive "journey assessment" to understand your organization's current footing and recommended future actions
- A series of deep and engaging workshops aimed at arming EHS and ESG practitioners with the knowledge and tools they need to move the needle on these issues in their organizations
- Ongoing engagement with a growing group of EHS and ESG experts, with opportunities to get directly involved, benchmark with peers and learn about new approaches in real time

We encourage all interested parties to reach out to us by contacting **feedback@nsc.org** for more information.

Appendix 1: Methodology

Framework Assessment

Verdantix aims to use a methodical and consistent approach to determine the suitability of candidate Value of Safety frameworks – where a framework is a structure underlying a system or concept, or a guide for implementing or measuring a particular program.

This framework review seeks to answer the following questions:

- How is safety defined, measured and valued across existing frameworks and how does that differ from the meaning of safety today?
- How can such safety frameworks be practically integrated into everyday decision-making?
- How has ESG impacted the value and valuation of qualifying safety frameworks?

Verdantix used a seven-step framework assessment methodology (see Figure 24), which is as follows:

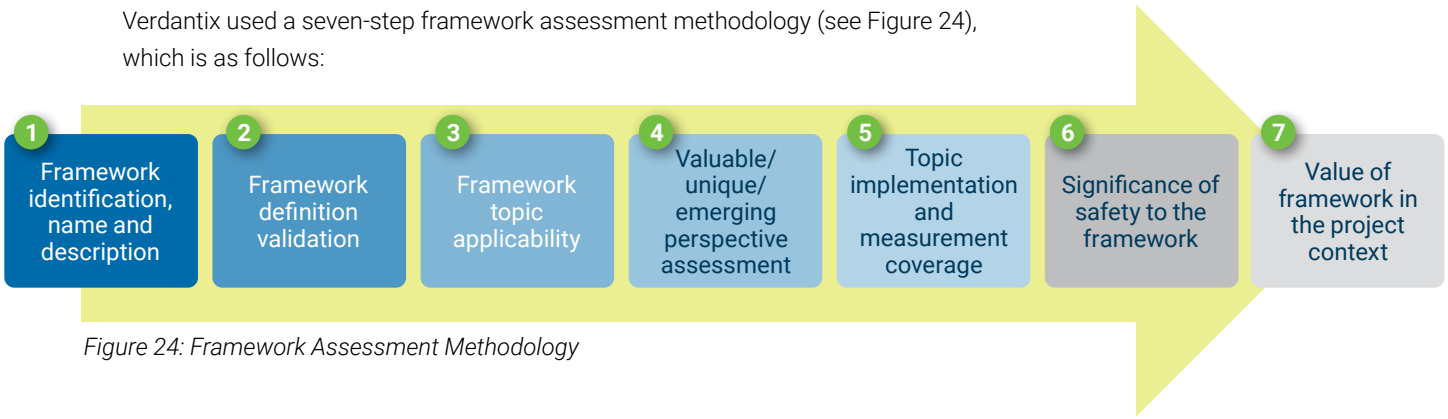


Figure 24: Framework Assessment Methodology

STEP 1 – Framework name and description [Text]

- Organization/framework developer name
- Direct link to framework documentation
- Details on whether the framework is focused on ESG or EHS or both
- Whether mandatory/voluntary and industry specificity (high/medium/low-risk)
- Geographies where the framework is targeted

STEP 2 – Is it a framework (a structure underlying a system or concept, or a guide for implementing or measuring a particular program)? [Yes/No]

- Needs to be a specific framework, not simply be a regulatory body or multi-purpose organization
- If no, exclude

STEP 3 – Does the framework mention any of the topics within the scope of the Value of Safety project? [Yes No, list of coverage]

- Needs to be a framework related to or including at least one of the following:
  - Reducing serious injuries, illnesses and fatalities; mental health; total worker health; psychological safety; human and organizational performance; diversity, equity and inclusion; environmental protections and sustainability; and social, ethical, political and reputational issues
- If the framework does not cover any of the above, exclude

STEP 4 – Extent to which the framework provides a valuable and/or unique perspective with a plurality of metrics or novel metrics on one or more of the above topics [High/Medium/Low, with text justification]

- Provides a measure of framework quality concerning the topics within the scope of the Value of Safety project

STEP 5 – Does the framework cover the above topic(s) in one or more of the following contexts?

- Implementation (how to deploy in a real-world workplace)
- Measurement (how to determine prevalence or success)

STEP 6 – How significantly is safety considered in this framework? [Majority of focus/One of key features/ Peripheral to focus/Not considered]

- This step considers the relevance of the framework to the objectives of the project – recognizing a new value of safety
- Where the definition of safety could be – a "condition or judgment of acceptable control over negative consequences caused either deliberately or by accident" or a "physical state with relative freedom from hazards, injuries or loss of personnel and property"

STEP 7 – Value of framework in providing guidance on New Value of Safety [High/Medium/Low]

- Determines whether the framework is included in the shortlist of 8-10 used for deeper exploration in the NSC project

Using this methodology, Verdantix identified over 80 frameworks for initial review, 29 of these frameworks met the long list criteria and 10 were selected for the shortlist as they met the more stringent criteria (see Figure 25).

Framework name	Description	Shortlist Rationale
CAN/ CSA-Z1003-13	Provides information on psychological health and safety in the workplace as well as prevention, promotion and guidance to stage implementation.	Detailed framework on stakeholders, implementation, resources, infrastructure, event management and training.
Corporate Knights Sustainability Rankings	Scoring methodology providing quantifiable metrics for publicly-listed firms with revenue greater than $1bn to assess their sustainability. Covers business metrics alongside social, employee, wellbeing and DEI.	Covers variety of detailed metrics for social issues, equality, diversity, injuries, fatalities and turnover. Scheme interacts with over 7,000 public companies with over $1bn revenue, including well-known firms Siemens, Schneider, HP and Cisco.
GRI	Global Reporting Initiative 403: Occupational Health and Safety. Provides detailed framework for identifying mental and physical health issues in organizations.	Detailed framework for identifying and reporting health and safety issues as well as mental health in workplaces.
INSHPO	International Network of Safety & Health Professional Organisation focuses on the EHS profession. INSHPO provides an international forum for engagement on EHS-related matters, advancing the EHS profession through the exchange of evidence-based practices and the development of a harmonized framework.	International forum of EHS professionals provides a strong framework based on capability rather than competency in applying a model code of conduct, certifications and education of workforce on EHS.
ISO 26001	ISO 26000:2010, Guidance on social responsibility. Guidance document constitutes a stepping stone for organizations in both the public and private sectors who want to implement ISO 26000 as a means of achieving the benefits of operating in a socially responsible manner.	Detailed guidance framework on creating and managing a sustainable, socially and environmentally responsible business including worker safety, development and social dialogue.
ISO 45001: 2018	Provides EHS guidance on implementing an EHS management system, managing risks, etc.	Detailed guidance framework on creating and managing effective EHS, reducing workplace incidents, absenteeism, reducing insurance cost, health and safety culture, reputation staff and morale.
ISO 45003: 2021	Provides information on EHS management, psychological health and safety at work as well as guidelines for managing psychosocial risks.	Detailed description of psychological safety, definitions, organizational responsibilities and implementation guidelines with examples.
Just Capital	JUST Capital search advisory council captures the American public's views and measures corporate behavior on issues most important to the American public with defined methods. Most important issues according to stakeholders in 2022 were: Workers (39%), Communities (20%), Shareholders and Governance (19%), Customers (11%) and Environment (10%).	Covers contemporary corporate ESG and EHS issues as perceived by U.S. public and provides detailed measurements methodology.
SASB O&G Exploration and Production	Sustainability Accounting Standards Board industry-specfic standards identify the subset of sustainability issues most relevant to financial reporting. Developed based on feedback from companies, investors and market participants.	Highly credible standards body that has developed its industry-specific standards through a well-considered consultation program. The Oil & Gas standard has been selected due to its significant safety focus.
UN Sustainable and Production Goals	17 Sustainable Development Goals (SDGs) for countries worldwide, developed and developing to end poverty and use strategies to improve health and education, reduce inequality and spur economic growth - all while tackling climate change and working to preserve oceans and forests.	Wide-ranging goals covering social, environmental, infrastructure, equality, worker and community health with detailed implementation frameworks and success stories.

Figure 25: Framework Assessment Shortlist Rationale

Quantitative Survey

Verdantix executed a quantitative survey to gain insight into how safety is being reinterpreted and expanded as a result of emerging trends.

The focus of the survey aligned with the key research questions for the New Value of Safety project:

- What is understood by the meaning of safety today?
- Why is safety important and valuable to stakeholders across industries and geographies?
- How can current values around safety be practically integrated into everyday decision-making?
- How do existing safety measurement frameworks differ from the meaning of safety today?

The key emerging trends covered in the survey include:

- ESG and sustainability
- Mental health and wellbeing
- Psychological safety
- Human and organizational performance
- Environment, sustainability and climate-related safety
- Diversity, equity and inclusion
- Ethics, politics and reputation

The 81 survey respondents represented a range of stakeholder groups and geographies (see Figure 26 and Figure 27).

Notes: N=81.

Figure 26: Interview Participants by Stakeholder Group

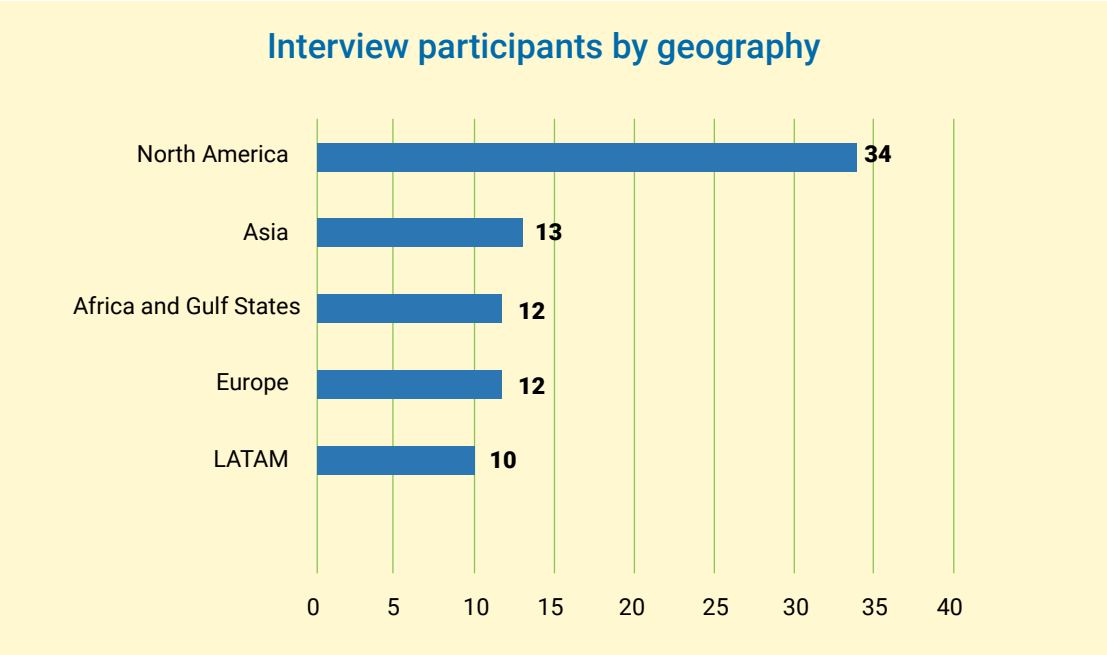


Figure 27: Interview Participants by Geography

Qualitative Survey

Verdantix executed a range of qualitative interviews to gain detailed insights into how safety is being reinterpreted and expanded as a result of emerging trends. A total of 10 qualitative interviews were conducted across stakeholder groups with representatives (see Figure 28). We surveyed contacts from North America and the United Kingdom leveraging the Verdantix research network and the NSC EHS/ESG expert working group. The qualitative survey was focused on the same emerging trends and research questions as the quantitative survey to better facilitate analysis.

Stakeholder Group	Number of Participants
ESG and Sustainability Professionals	3
Business Executives	2
Insurance and Investment Professionals	3
Government Administrators	1
Health and Safety Technology and Service Professionals	1

Figure 28: Qualitative Interview Participants by Stakeholder Group

Appendix 2: Glossary

Business ethics – a form of applied ethics that attempts to apply moral norms and values to business procedures and institutions. [Reference: Tayşir and Pazarcık]

Connected safety solutions – a collection of IoT devices that both provide safety alerts in the field and relay information to a software application in real-time. [Reference: Verdantix]

Climate change adaptation – adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli and their effects. It refers to changes in processes, practices and structures to moderate potential damages or to benefit from opportunities associated with climate change. [Reference: the UN]

Climate change mitigation – efforts to reduce or prevent the emission of greenhouse gases. [Reference: the UN]

Corporate social responsibility – a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. [Reference: the UN Industrial Development Organization]

Diversity – the characteristics of differences and similarities between people. [ISO, 2021]

Employee — an individual who is in an employment relationship with an organization, according to national law or its application. [Reference: GRI 403]

Employee engagement — the degree to which employees invest their cognitive, emotional and behavioral energies toward positive organizational outcomes.

Environment — natural surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, people, outer space and their interrelationships. [Reference: ISO 26000]

Equity – the principle that people should be subject to policies, processes and practices that are fair, as far as possible, and free from bias. [Reference: ISO, 2021]

Environmental, social and governance – issues that are identified or assessed in responsible investment processes. Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems. Social factors are issues relating to the rights, wellbeing and interests of people and communities. Governance factors are issues relating to the governance of companies and other investee entities. [Reference: UN Principles for Responsible Investment]

Ethics – a guiding principle which implies moral conduct and honorable behavior, showing consideration to the rights and interests of others. [Reference: Verma, S. and Prakash U.M]

Fatigue — the feelings of tiredness, reduced energy and increased effort needed to perform tasks. [Reference: NSC]

Gender equality — equitable treatment for women and men. [Reference: ISO 26000]

Governance – all processes of governing, the institutions, processes and practices through which issues of common concern are decided upon and regulated. Good governance adds a normative or evaluative attribute to the process of governing. [Reference: United Nations Human Rights Office]

Health — a state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity. [Reference: World Health Organization]

Hazard risk assessment – the process of evaluating the uncertainty and likelihood of a process or event negatively affecting a worker's wellbeing. [Reference: ISO 45001]

Human and organizational performance – an operating philosophy that recognizes error as part of the human condition and an organization's processes and systems greatly influence employees' decisions, choices and actions, and consequently, their likelihood of successful work performance. [Reference: NSC]

Impact — the effect an organization has on the economy, the environment and/or society, which in turn can indicate its contribution (positive or negative) to sustainable development. [Reference: GRI 403]

Inclusion – the process of including all stakeholders in organizational contexts. [ISO, 2021]

Materiality – the principle that corporate leaders utilize to understand which environment, social and governance (ESG) issues to prioritize in their organization. The definition of what is material can include various risk factors, opportunities, dependencies and/or issues that have the potential to affect the cash flow and financial value creation of a company. [References: US Securities & Exchange Commission, International Sustainable Standards Board, Datamaran]

Mental health — a state of mental wellbeing that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. [Reference: World Health Organization]

Natural capital –the stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people. [Reference: Capitals Coalition]

Near miss – incidents that could have resulted in injury or property damage, even though they did not. [Reference: NSC]

Occupational health and safety management system — set of interrelated or interacting elements to establish an occupational health and safety policy and objectives, and to achieve those objectives. [Reference: GRI 403]

Occupational health and safety risk — a combination of the likelihood of occurrence of a work-related hazardous situation or exposure, and the severity of injury or ill health that can be caused by the situation or exposure. [Reference: GRI 403]

Organization — a company, employer, operation, undertaking, establishment, enterprise, institution or association, or a part or combination thereof, that has its own management. [Reference: CAN/CSA-Z1000]

Organizational culture — a pattern of basic assumptions invented, discovered or developed by a given group that are a mix of values, beliefs, meanings and expectations that group members hold in common and use as behavioral and problem-solving cues. [Reference: CAN/CSA-Z1000]

Organizational resilience — the ability of an organization to anticipate, prepare for, respond to and adapt to incremental change and sudden disruptions in order to survive and prosper. [Reference: British Standards Institution]

Personal protective equipment — equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. [Reference: OSHA]

Pollution prevention – any practice that reduces, eliminates or prevents pollution at its source before it is created. [Reference: U.S. Environmental Protection Agency]

Psychological safety — the absence of harm and/or threat of harm to mental wellbeing that a worker might experience. [Reference: CAN/CSA-Z1000]

Psychologically healthy and safe workplace — a workplace that promotes workers' psychological wellbeing and actively works to prevent harm to workers' psychological health including in negligent, reckless or intentional ways. [Reference: CAN/CSA-Z1000]

Psychosocial risk factor — hazards including elements of the work environment, management practices and/or organizational dimensions that increase the risk to health. [Reference: CAN/CSA-Z1000]

Risk — an estimate of the probability of a hazard-related incident or exposure occurring and the severity of harm or damage that can result. [Reference: NSC]

Risk mitigation — avoiding, eliminating or reducing the probability of a hazard-related incident or exposure from occurring. The minimization of the severity of harm or damage, if an incident or exposure occurs. [Reference: NSC]

Safety — state for which risks are judged to be acceptable. [Reference: NSC]

Safety champion – organizational leaders who demonstrate a personal commitment to worker safety health, both on and off the job. [Reference: NSC]

Stress — the adverse reaction people have to excessive pressures or other types of demands placed on them. [Reference: HSE]

Social license – the perceptions of local stakeholders that an organization operating in a given area or region is socially acceptable or legitimate. [Reference: Springer]

Sustainability – the ability for a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium and long term. Sustainability is a condition for a company to access over time the resources and relationships needed (such as financial, human and natural), ensuring their proper preservation, development and regeneration, to achieve its goals. [Reference: IFRS]

Transparency – openness about decisions and activities that affect society, the economy and the environment, and a willingness to communicate these in a clear, accurate, timely, honest and complete manner. [Reference: ISO 26000]

Total worker health — policies, programs and practices that integrate protection from work-related safety and health hazards with the promotion of injury and illness prevention efforts to advance worker wellbeing. [Reference: NIOSH]

Wellbeing at work — fulfillment of the physical, mental, social and cognitive needs and expectations of a worker related to their work. [Reference: ISO 45003]

Workers' compensation – insurance providing partial medical care and income protection to employees who are injured or become ill from their job. [Reference: CDC/NIOSH]

Work-related hazard — source or situation with the potential to cause injury or ill health. [Reference: GRI 403]

Work-related incident — occurrence arising out of or in the course of work that could or does result in injury or ill health. [Reference: GRI 403]

Work-related injury or ill health — negative impacts on health arising from exposure to hazards at work. [Reference: GRI 403]

Workplace — an area or location where a worker works for an organization or is required or permitted to be present while engaging in service (including social events) on behalf of an organization. [Reference: CAN/CSA-Z1000]

Appendix 3: References

American Industrial Hygiene Association (AIHA). (2022). AIHA Total Exposure Health aspects of Total Worker Health: Advancing Worker Wellbeing. Available at: https://aiha-assets.sfo2.digitaloceanspaces.com/AIHA/resources/Guidance-Documents/AIHA-Total-Exposure-Health-aspects-of-Total-Worker-Health-Advancing-Worker-Well-Being-Guidance-Document.pdf (Accessed 26th May 2023).

American Industrial Hygiene Association (AIHA). (2023). Human Capital and Environmental, Social and Governance (ESG). Pre-release copy, availability forthcoming on AIHA website. (Accessed 26th May 2023).

Avetta and the National Safety Council (NSC). (2022) Benchmarking Organizational Commitment to ESG. Available at: https://www.avetta.com/en-gb/node/7466 ([Accessed 12th September 2022).]

CAN/CSA-Z1003-13/BNQ 9700-803/2013 - Psychological health and safety in the workplace (2013) BCFED Health & Safety Centre. Available at: https://www.healthandsafetybc.ca/wp-content/uploads/2016/04/CAN_CSA-Z1003-13_BNQ_9700-803_2013_EN.pdf (Accessed: April 3, 2023).

Capitals Coalition (2023). Available at: https://capitalscoalition.org/ (Accessed: April 4, 2023).

Conceptual framework (2022) SASB. Available at: https://www.sasb.org/standards/conceptual-framework/ (Accessed: April 3, 2023).

Corporate Knights Sustainability Rankings (2021) Corporate Knights. Available at: https://www.corporateknights.com/resources/ (Accessed: April 3, 2023).

Equality act 2010: Guidance (2010) GOV.UK. Available at: https://www.gov.uk/guidance/equality-act-2010-guidance#:~:text=The%20Equality%20Act%202010%20legally,strengthening%20protection%20in%20some%20situations. (Accessed: April 3, 2023).

EU Finalizes ESG Reporting Rules with International Impacts (2023). Meynier, et. al. Available at: https://corpgov.law.harvard.edu/2023/01/30/eu-finalizes-esg-reporting-rules-with-international-impacts/ (Accessed: July 26, 2023).

GRI 403: OCCUPATIONAL HEALTH AND SAFETY 2018 (2018) Gri - topic standard for Occupational Health and Safety. Available at: https://www.globalreporting.org/standards/standards-development/topic-standard-for-occupational-health-and-safety/ (Accessed: April 3, 2023).

International Network of Safety & Health Professional Organisations (2017) inshpo. Available at: https://www.inshpo.org/work (Accessed: April 3, 2023).

ISO 26000:2010 (2021) ISO. Available at: https://iso26000.info/wp-content/uploads/2017/06/ISO-26000_2010_E_OBPpages.pdf (Accessed: April 3, 2023).

ISO 45003:2021 (2021) ISO. Available at: https://www.iso.org/obp/ui/#iso:std:iso:45003:ed-1:v1:en (Accessed: April 3, 2023).

Just Capital Full ranking methodology (2022) JUST Capital. Available at: https://justcapital.com/full-ranking-methodology/ (Accessed: April 3, 2023).

National Institute for Occupational Safety and Health (2016). Fundamentals of total worker health approaches: essential elements for advancing worker safety, health, and well-being. Publication No. 2017-112.

National Safety Council (2021) Human & Organizational Performance – A path to improvement for all organizations. Available at: https://www.nsc.org/getmedia/6dc7b76d-09a2-4ad5-9be2-0b0365c34b46/nsm-wk4-mi (Accessed: 31 March 2023)

SDG indicators (2022) United Nations. United Nations. Available at: https://unstats.un.org/sdgs/report/2022/ (Accessed: April 3, 2023).

Tayşir, E. A. and Pazarcık, Y (2013). 'Business Ethics, Social Responsibility and Corporate Governance: Does the Strategic Management Field Really Care about these Concepts?', Procedia - Social and Behavioral Sciences, 99, pp.294-303.The International Financial Reporting Standards (2022) ISSB describes the concept of sustainability and its articulation with financial value creation, and announces plans to advance work on natural ecosystems and just transition. Available at: https://www.ifrs.org/news-and-events/news/2022/12/issb-describes-the-concept-of-sustainability/ (Accessed: 31 March 2023)

The International Organization for Standardization (2010) ISO 26000:2010 Guidance on social responsibility. Available at: https://www.iso.org/standard/42546.html (Accessed: 31 March 2023)

The International Organization for Standardization (2021) ISO 30415:2021 Human resource management – Diversity and inclusion. Available at https://www.iso.org/standard/71164.html (Accessed: 31 March 2023).

United Nations Principles for Responsible Investment. (2023) Reporting Framework glossary. Available at: https://www.unpri.org/reporting-and-assessment/reporting-framework-glossary/6937.article (Accessed: 3 April 2023).

United Nations Human Rights Office. About good governance. Available at: https://www.ohchr.org/en/good-governance/about-good-governance (Accessed: 3 April 2023).

Verma, S. and Prakash, U. M. (2011) Corporate Governance: Business Ethics and Social Responsibility. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1802333 (Accessed: 3 April 2023).

World Health Organization (2022) Mental health. Available at https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response (Accessed: 31 March 2023)

Yang, M. et al. (2022) Value of Safety. Available at: https://repository.tudelft.nl/islandora/object/uuid:cd62c5ed-719a-466a-97d1-56476b121ef9?collection=research [Accessed 8th September 2022]

Your guide to implementing ISO 45001 (2018) NQA. Available at: https://www.nqa.com/en-gb/certification/standards/iso-45001/implementation (Accessed: April 3, 2023).

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