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Why Unsafety has a Negative Relationship with Economic Effectiveness in the World?

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Аннотация. Қурилиш саноатида инсонлар соғлиғи ва хавфсизлигини таъминлашда ижтимоий самарадорликни ошириш унинг иқтисодий тараққий этиши билан узвий боғлиқ. Ушбу тадқиқот ишида хавfli ишлаш мухитининг иқтисодий самарадорликка тескари боғлиқлик ҳосил қилгани, уни ижобий ҳал этишда халқаро амалиётнинг аҳамияти ўрганилган.

Калит сўзлар. Қурилиш саноати, интеграция, иқтисодий самарадорлик, бахтсиз ҳодисаларнинг олдини олиш.

Аннотация. Повышение социальной эффективности в обеспечении здоровья и безопасности людей в строительной отрасли неразрывно связано с ее экономическим развитием. В этом исследовании изучается негативное влияние опасных производственных условий на экономическую эффективность и важность международной практики для его положительного решения.

Ключевые слова. Строительная промышленность, интеграция, экономическая эффективность, предотвращение несчастных случаев.

Abstract. Due to regularly registered diseases and major accidents of workers in the construction industry can be explained expandable building projects and state programs for supporting population. The main purpose of the current paperwork is to explain wining unsafety at workplaces both theoretical and practical points of view generated with economic and social levels.

Keywords. Construction, integration, economic effectiveness, accident prevention, cost reduction

Introduction

An effective organizing management system and development of occupational health and safety measures is based on a number of criteria. - to record the consequences of unforeseen risks in the production and construction of buildings; assessment of adverse impacts on the person, environment, enterprise and society in general; We will study the global community on a number of approaches to the improvement of our national security rankings and indexes, as well as the calculation of various costs and costs that can affect labor productivity.

The basis of this is the social efficiency factor in the construction industry, given the social capital and relationship.

Literature review

In this concern we assumed the main cause of all accidents on site related with term of unsafety which generalized in various definitions as follows:

Unsafety is a lack of safety [1]. Other source defines that unsafe state or condition; exposure to danger or risk; insecurity [2]. Webster dictionary explains that want of safety: insecurity [3]. One more source examines unsafety like the state of being unsafe; exposure to danger; insecurity; risk [4]. The quality or state of being in peril; absence of safety; insecurity [5]. Another online dictionary defines that lack of safety; insecurity [6]. Word reference defines unsafety like exposure to danger or risk; insecurity and hazard [7]. As for the Cambridge unsafety is not safe performance [8]. The next online source explains that a lack of safety [9].

Actually, there's no commonly agreed upon definition of "safety" nor of its opposite "unsafety". Today, safety is mostly defined by an absence of accidents, but how does one measure the absence of something? This lack of common ground also leads to different standards with which one tries to measure the safety conditions in organizations, without the possibility to benchmark and compare results between sectors and industries [10].

The connection between risk and safety can therefore be seen as follows: risk is an uncertain effect on objectives, while the actual performance is the result of that uncertain effect [12].

Methods and materials

We designed a new technique for integration of three main sectors like education, business, and science & technology in the field of health and safety in construction in the light of modern global cooperation framework. In this research, we used qualitative methods for an effective way of describing conceptual approaches and fundamental generalization in all three main areas of the global construction industry.

Purpose

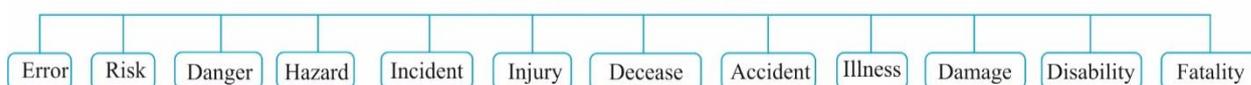
The main aim of this investigation is to assess the doses and risks associated with workers, employers, firms, companies, government, society, property, and the total global economy in the cause of disease, accidents, and total losses in terms of lack of health and safety regulation and management system. This research examines the emerging role of measuring unsafety in the context of improving safety indexes and indicators for the attractiveness of global visibility and reputation in construction. This paper has argued that systematically review the

paradigm of human capital as the main generator of the world economy, not just worker or site personal. This study set out to determine with the global coalition partnership program on reducing accident levels and diseases with historically developed conventions, recommendations, standards, regulation, enforcement, and controlling system of the total construction process.

Results

As we mentioned earlier above initial results can be classified for measuring unsafety as followings. According to the figure 1 we can discuss main causes of occurring accidents for recording unsafety level and scope.

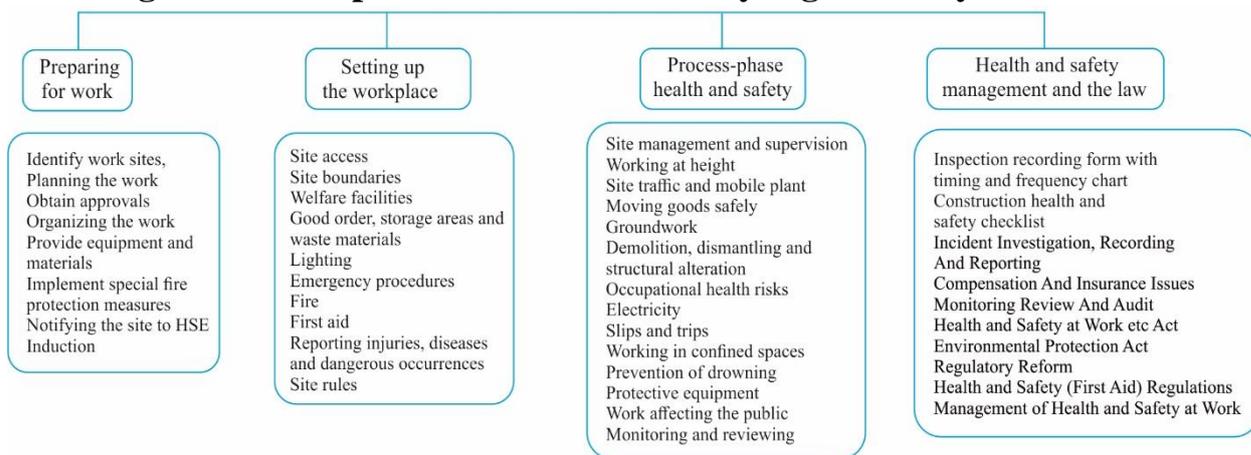
Figure 1. Phenomena of Health and Safety.



Source: Aziz Z, 2019

The next results thus obtained are compatible with the organizational structure of workplaces, construction sites, and plants that manufacture building materials. The first step can be reached as active contact with unsafety is the beginning of the construction work process. Setting up the working area is the next target of unsafety involvement of accidents. The building process is the most dangerous touchpoint of unsafety while almost 75% of accidents take to happen. Legislation and management system provide a fully effective work process and zero rate accident level at highly implemented safety standards and conventions of certain international organizations (fig.2).

Figure 2. Workplace of health and safety regulation system

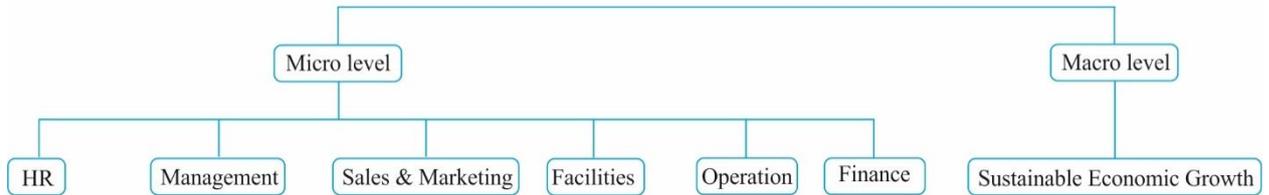


Source: Aziz Z, 2019

If we compare the current policy with the local organizational structure of legislation it is totally different from each other. Due to international practice already had been tested more than 60 countries human capital and dignity are most

under control at workplaces. Therefore, each construction site organizational staff must be taking into account all four stages as mandatory for safety prevention and accident for social and economic efficiency. In another word, we can examine that advantage for full implementation or conversion current policy by simply adaptation for saving human lives.

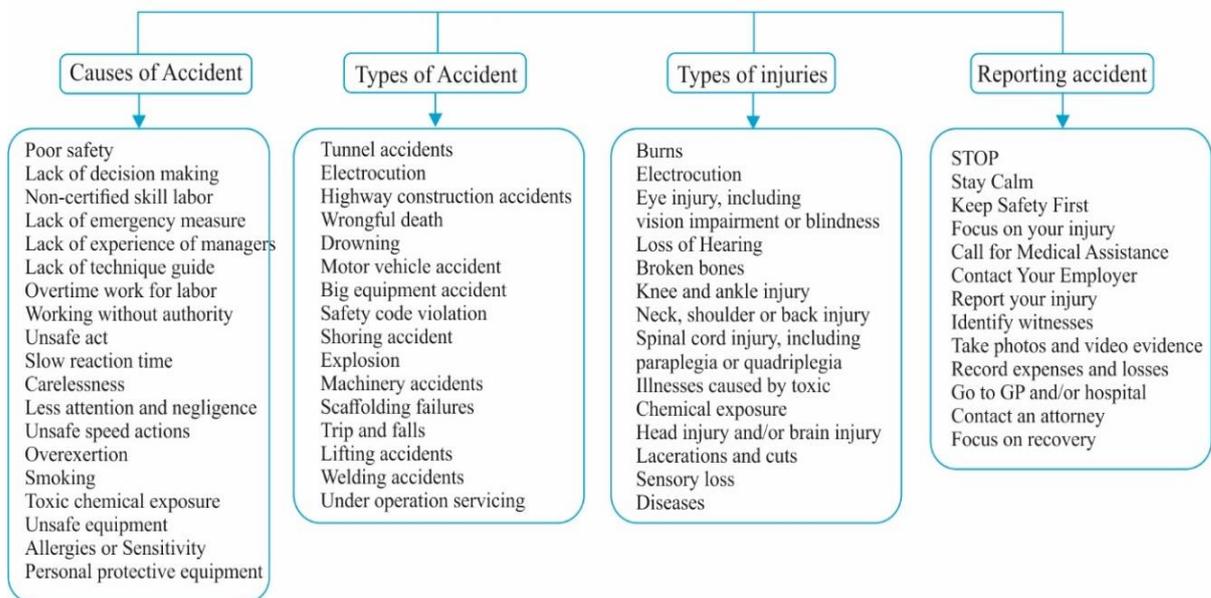
Figure 3. Economic benefits of workplace safety in construction



Source: Aziz Z, 2019

As we assume cost benefits of effective health and safety regulation covers workers, firms, companies working conditions and culture as a micro level investment and unexpected expenses. And, damage for environment, natural resources, total population, and countries budget affects as a negative balance at GDP are macro level influence of the poor regulation and control (fig.3).

Figure 4. Cause and effect of workplace accident in construction

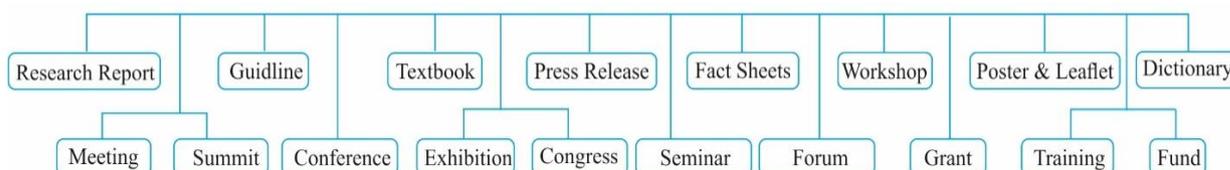


Source: Aziz Z, 2019

There are many and numerous causes of accidents on the site, which is the responsibility of the construction site and project managers. A manager or supervisor to identify these causes and solutions. inadequate equipment and a lack of knowledge and training on appropriate equipment. The 4 main consequences of accident-related effects may occur conflicts with employees, loss of project effectiveness, and delays in execution. This research will help project participants

and administrators to explore and understand the links and characteristics between the causes and consequences of construction accidents to improve the safety management system in all sectors of the construction industry under the Global Safety Coalition collaborations in low-income transition economies like Uzbekistan too (fig.4).

Figure 5. International networking and its well-organized events and reforms



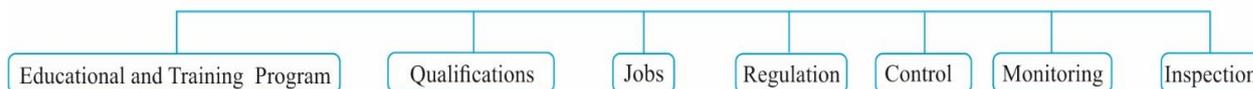
Source: Aziz Z, 2019

As for providing international networking on sustainable development of the world construction industry global coalition organize various scientific and practical events for analyzing current developing results of countries in the field of construction. Due to our research targets only health and safety efficiency for saving the life of workers, and escape from unsafety working conditions for contributing positive indicators of the countries by preventing accidents:

- The sixth International Construction Safety and Health Conference and Exhibition with as theme “Vision Zero: Invest in Prevention, Plan ahead” on 10 and 11 May 2019 in Nicosia, Cyprus;
- Health and Safety in Construction Conference on 23 Apr 2020, Manchester, UK. World Congress on Safety and Health, October 2020;
- International Conference and Expo on Occupational Health & Safety which will be held from 11 - 12 of June 2020 in Kuala Lumpur, Malaysia. The theme of the conference is “Increasing Productivity and Improving Eco-Friendly Occupational Health and Safety”.

Figure 6. Global coalition reforms on development human capital and safety climate in the light of academic improvement

It helps for search and discover new fields, qualifications, jobs and projects,



Source: Aziz Z, 2019

World construction unity provides lots of new methods and innovation on how this sector is reliable and how the building process is required accuracy and skilled personal. Institutions with construction, building, and architecture programs must teach and provide world-class practice curriculum and syllabi at all areas of construction safety performance. Degree or qualifications should be highly qualified like HSE, OSHA, or standards. If we analyze occupations related to

health and safety it can reach more than 10 positions in the construction itself. About qualification scope can be determined by all branches and sectors of building process like carpenter, bricklayer, the electrician has its general and minimum standards.

Discussion

For clear discussion we assume that main reasons and effects of accident on site and out of the site can be drawn as a systematically presented. It is familiar that main reasons of occurrence of construction accident are:

1. Falls (Scaffolding and ladder) -37%
2. Lack of protection for workers in trenches- 18%
3. Heavy machinery-10%
4. Electrocution (Power tool and machinery accidents)-9%
5. Falling objects -8%
6. Being caught between objects-6%
7. Traffic accidents (Vehicle Accidents)-6%
8. Musculoskeletal disorders-4%
9. Professional disease-2% [12,13,14]

In this paper we propose some relevant categories which later explained as specific measurements of indicators and indexes. For calculation economic efficiency of the safety regulation following variables strongly recommended.

Table 1. Related measurable indicators on health and safety in construction industry

N_o	Variable	N_o	Variable	N_o	Variable
1	Incident	15	Existence of risk	30	Initial lossees from risk
2	Hazard	16	Near miss	31	Transfer of Risk
3	Errors	17	Risk taker	32	Recording of the Risk
4	Damage	18	Source of risk	33	Influence of Risk
5	Lost	19	Area of occurring risk	34	Risk Assessment
6	Poor knowledge	21	Cause of Risk	35	Risk Management
7	Neglect	22	Effect of Risk	36	Reduction of Risk
8	Carelessness	23	Risk description	37	Risk Control
9	Failure	24	Scope of Risk	38	Risk Analysis
10	Low Risk Assessment	25	Indicators of Risk	39	Reporting the Risk
11	Over Confidence	26	Searching the Risk	40	Retaking the Risk
12	Abstraction	27	Insurance of Risk	41	Risk evaluation
13	Uncertainty	28	Prevention of Risk	42	Risk value effect
14	Accident	29	Finding the Risk	43	Risk demonstration

Source: Aziz Z, 2019

This paper is a modest contribution to the ongoing discussions about unsafety for calculating various indicators with global prospective views. We realized clarification about fundamental concepts of two main indicators as following global ranking indexes and indicators:

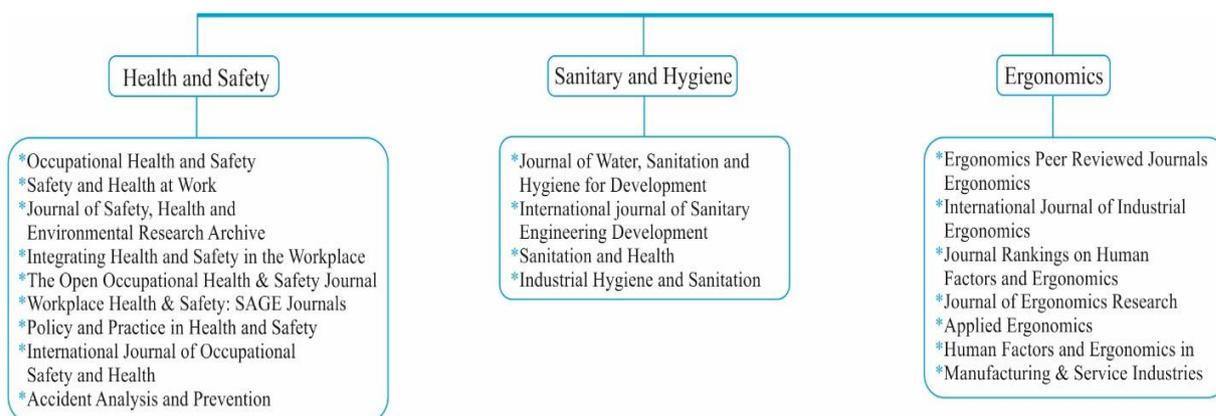
One more advantage of Global Safety Coalition intentions is represented at following. According to the given structure relevant degree, courses, diplomas,

occupations and qualifications, certificates which recognized internationally by Coalition at the moment.

It has easily come to final outcomes that it is still promoting health and safety control or monitoring at workplaces is a single occupation with more than 10 directions which you could not find easily in international terminology by ILO and other scientific platforms I Uzbekistan. It is a basically unique position like Technical Safety (Технический безопасность -ТБ) versus the above figure. It is not comparable advantages at each individual direction weather in education, science, and business integration as well.

In accordance with the historical reform and collaboration with World Bank, Uzbekistan side, and Elsevier, Netherlands signed a memorandum “Science 2020”. Current action opens a new era in Uzbek science and technology for integration of higher education into the global format. Obtained results and analyses are easily publishing at world-class journals and platforms like Form 2019, Web of Conference and Form 2020, IOP - Institute of Physics internationally in open access (fig 9).

Figure 7. Some scientific journals at Health and Safety field

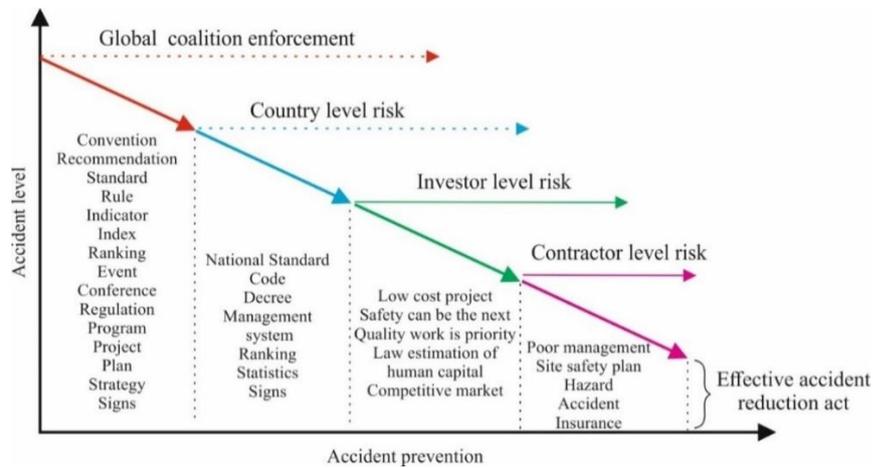


Source: Aziz Z, 2019

Findings

Main findings can be drawn as a figure format as mentioned previously of our research above. Integration with Global Safety Collation will provide clear work place with hazard free and accident free safety culture and environment.

Figure 8. Negative relationship unsafety with economic effectiveness in world construction industry



Source: Aziz Z, 2019

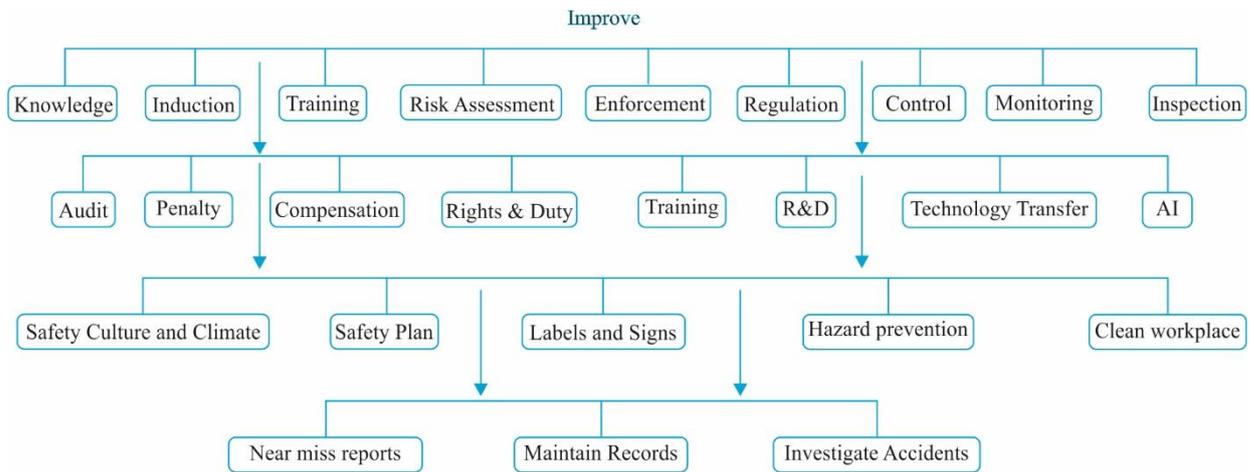
This research was concerned with safety regulation for rising human capital dignity and value at the workplace especially in the construction industry. Because as we assumed, in the beginning, each four-level of regulation and organizational bodies must take full responsibility for saving lives of employers, time, and cost of the companies, in macro-level country's international profile, reputation, and investment attractiveness. This figure clear defines the duties and responsibilities of the sectors by integration and collaboration.

However, the results should be applicable also to higher education as an innovative research program. The findings suggest that this approach could also be useful for each worker at the construction site and building materials manufacturing plants and firms in all regions of Uzbekistan. The findings are of direct practical relevance for the developing local legislation policy from its scientific novelty and relevance at the current pandemic period.

Recommendation

As for the suggestion we assume following figure, which demonstrated systematically relationship with almost all variables or indicators for improving working conditions and safety culture at workplaces. For reducing unsafety level and changing for advanced organizational direction safety policy will provide social and economic benefits to human, companies and country.

Figure 9. Integrity of total reforms for improving Health and Safety indexes and indicators in construction industry.



Source: Aziz Z, 2019

Conclusion

The findings of our research are quite convincing, and thus the following conclusions can be drawn.

1. Health and safety concept is not a new phenomenon;
2. Implantation of Health and Safety policy must take into consideration as mandatory by the government.
3. Benefits are not only saving resources but mainly human force should stand in priority level
4. Cause of accident are near-miss, negligence, apathy and insufficient knowledge and practice
5. Integration with Global Safety Collation accelerates for wining unsafety
6. Global indexes and indicators still inactive for measuring both safety and unsafety

Summing up the results, it can be concluded that four-level integrity collaboration will provide update advanced forms in Health and Safety. This study has shown some leak side of Uzbek science and practice in this field.

This paper has clearly shown that the best ways for demonstrating hazard prevention at workplaces. The existence of (these effects) implies further development of the working conditions at the construction industry workforces' clean hazard free area.

References

- [1] <https://www.collinsdictionary.com/dictionary/english/unsafety>
- [2] <https://www.dictionary.com/browse/unsafety>
- [3] <https://www.merriam-webster.com/dictionary/unsafety>
- [4] <https://www.wordnik.com/words/unsafety>
- [5] <https://www.definitions.net/definition/unsafety>
- [6] <https://www.yourdictionary.com/unsafety>
- [7] <https://www.wordreference.com/definition/unsafety>
- [8] <https://dictionary.cambridge.org/dictionary/english/unsafe>
- [9] <https://www.thefreedictionary.com/unsafety>

- [10] Measuring (un)safety. A broad understanding and definition of safety, allowing for instant measuring of unsafety.
https://www.researchgate.net/publication/334481418_Measuring_unsafety_A_broad_understanding_and_definition_of_safety_allowing_for_instant_measuring_of_unsafety [accessed Mar 19 2020].
- [11] Blokland, P., & Reniers, G. (2018). An ontological and semantic foundation for safety science. In *Safety and reliability: safe societies in a changing world: proceedings of ESREL 2018, June 17-21, 2018, Trondheim, Norway/Haugen, Stein* [edit.] (pp. 3157-3164).
- [12] <https://www.perecman.com/blog/2014/april/what-are-the-causes-of-accident-on-construction/>
- [13] <https://www.erlegal.com/can-cause-construction-accident/>
- [14] <https://www.odblaw.com/blog/article/causes-of-construction-accidents/>
- [15] 1 <https://globalsafetyindex.com/>
- [16] <https://www.iwh.on.ca/newsletters/at-work/85/eight-safety-leading-indicators-for-construction-worksite>
- [17] <https://www.iwh.on.ca/newsletters/at-work/85/eight-safety-leading-indicators-for-construction-worksite>
- [18] <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/04/global-construction-survey-2019.pdf>
- [19] <https://safetyrisk.net/positive-performance-indicators/>
- [20] <https://www.doingbusiness.org/en/reports/case-studies/2015/dwcp>
- [21] <https://business.libertymutualgroup.com/business-insurance/Documents/Services/RC2029.pdf>
- [22] <https://www.wscn.nt.ca/return-work/rtw-workers>
- [23] <https://www.nlr.org/capabilities/safety-performance-indicators/>
- [24] http://www.construction-innovation.info/images/pdfs/Presentations/Safety_effectiveness_indicators.
- [25] <https://www.standard.com/eforms/20503.pdf>
- [26] <https://www.mdcalc.com/injury-severity-score-iss>
- [27] https://www.aci.health.nsw.gov.au/get-involved/institute-of-trauma-and-injury-management/Data/injury-scoring/abbreviated_injury_scale
- [28] <https://www.library.auckland.ac.nz/external/finalproceeding/Files/Papers/46530final00039.pdf>
- [29] <https://www.executestategy.net/blog/kpis-health-and-safety>
- [30] <https://www.wsib.ca/en/health-and-safety-index>
- [31] https://www.ohsrep.org.au/measure_health_and_safety_performance
- [32] <https://www.ehsinsight.com/blog/are-you-tracking-these-construction-safety-metrics>
- [33] <https://nlp.stanford.edu/IR-book/html/htmledition/index-construction-1.html>
- [34] <http://ulsafetyindex.org/app/#view/score>

[35] <http://www.oecdbetterlifeindex.org/>