

A Debate on Main Aspects of Safety Management and Ergonomics in Georgia

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Abstract – Safety management and ergonomic working conditions are two of the decisive factors in the organizational health of employees. In recent decades, industrialized countries have experienced significant changes in the functioning of labor markets and safety management systems. Increased commodity market competition, highly turbulent aggregate demand, and rapid technological advances have contributed to increased pressure on labor efficiency. Safety management and ergonomic measures are considered as one of the main important aspects of organizational behavior, which is important to regulate both at a governmental and organizational level. It is necessary to mention that ergonomics considers the physical strength and size of people. It reduces the strain on the workplace and thereby improves a person's ability to work better. Georgia is one of the Post-Soviet Union countries, located in the middle of Europe and Asia, in the South Caucasus region, where capitalism and the market economy were implemented during the last two decades. The main aspects of safety management and ergonomics are interesting in the country, which are proved by laws and accepted by national governmental agencies. Each organizational unit must consider these aspects in order to improve and establish better conditions for the working process.

Keywords *Safety Management, ergonomics, modern technologies, safety awareness.*

an element of business, as it happens in the whole civilized world. However, technical measures to guarantee safety management in Georgia are not accompanied by a proper combination with the managerial component.

The supervisory structures (or rather the officials who control them, major governmental agencies) have chosen a special way of development here too, which is built on a system of fines, which does not really motivate enterprises to create and even more so to certify safety management systems for activities. In post-Soviet society, there was and still is, moreover, a huge number of far-fetched criteria, which absolutely do not reflect the actual reality, but serve only to please certain groups of people who achieve success by manipulating mysterious figures and misleading the whole sector. To get away from this leading nowhere situation, let us consider the real impact of safety management systems in Georgia and the impact of these systems on the innovative development of production [1].

The analysis of modern safety management systems, by which the management built unified world rules, allows us to conclude that the local systems need to be developed.

I. INTRODUCTION

Safety management is a state of labor conditions that excludes the impact on workers of dangerous and harmful factors in production systems.

Safety management has always been one of the most important indicators of the development of society. It is becoming a difficult task to evaluate the system of safety management of enterprise, its invariance from external events. Considering that for 75 years Georgia has been living according to the laws, which poorly correlated with the laws of the world society, it is very difficult to establish a legitimate safety assessment system. The quality management systems are quite actively implemented in Georgia as

II. LITERATURE REVIEW

Safety management and ergonomic studies have been studied for as long as humanity has existed. Ergonomics and safety management is a discipline that comprehensively studies a person or a group of people in the specific conditions of modern production. The emergence of ergonomics is related to the enormous technical progress that we have observed in the last century. The first studies in this field can be traced back to the twentieth century. At that time, in the USA, Japan, and many other countries, scientists of various disciplines studied the process of labor activity for the maximum use of human resources [2].

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Technical progress has led to the mechanization and automation of the production process. This triggered the need to develop a new discipline in ergonomics and safety management.

The term "ergonomics" itself was suggested in 1857 by the Polish scholar, Wojciech Jastrzębowski. However, it did not become widespread until the fifties, when they organized the Ergonomic Research Society, with which we can associate the formation of ergonomics as an independent science [3].

Jaana Sepp and Karin Reihold (representing the Tallinn University of Technology) have published *Human Factors and Ergonomics in Safety Management in Healthcare: Building New Relationships* (2018) and defined the comprehensive understanding of classical and modern theories of ergonomics and safety management systems. Their practical implications allow us to understand the role of ergonomics in a holistic context, to cover the whole system of employers and employees, internally to obtain the maximum benefit in a strategic management that matches the corporate opportunities with environmental requirements and allows them to obtain most effectively the desired [4].

Considering the specificity of ergonomic and safety management, it is important to study man-machine-working environment systems. The development of production based on increased efficiency and quality is the main way to achieve the fundamental, long-term goals of our society's economy. High production efficiency is an extremely multifaceted problem. Human capabilities are expanding due to the development of tools, but the tools often turn out to be so complex or irrationally designed that it becomes difficult to use them. Analysis of the efficiency of automated control systems shows that operator error is often the cause of system failure [5].

One of the important studies of the ergonomic and safety management systems of Georgian scientific basis was published by Tbilisi State University in the Faculty of Economics and Business. It analyzes the influence of ergonomic and safety management of external and internal circumstances and environmental conditions on the sample of Georgian organizations [6].

III. RESEARCH METHODOLOGY

To study and analyze safety management and ergonomic aspects in Georgia, we used mixed research methods such as qualitative and statistical. The qualitative approach of research is the main way of studying facts about our topic, which describes the main aspects within their natural settings [7]. The statistical method of research is the collection, analysis, and presentation of the proper amount of data to make some frames according to the research topic.[8].

A combination of these methods provides the opportunity to study and research topics deeply and

intensively. The paper used a case study of one of the organizations functioning in Georgia.

IV. CASE STUDIES AND DEBATE ON PRACTICAL SAFETY MANAGEMENT AND ERGONOMICS

A. *An inventory of consulting companies and services providers*

There are governing mechanisms in ergonomics and safe working conditions management in Georgia, regulated via the national legal framework, state policy context, the Organic Law of Georgia on Occupational Safety, and the International Labor Organization approaches to improving working conditions. Health and safety practices vary from each country to country with different approaches to laws, and in Georgia, organizations could improve the safe management and ergonomics conditions of their organization based on before mention legislation framework.

In 2019, Georgian state agencies reinstated the main act of Safety Workplace and Management. The major purpose of the mentioned act is to define the basic requirements and general principles of preventive measures related to occupational safety, existing and expected hazards, prevention of accidents and occupational diseases, training of workers, providing information and advice, security and health, and equal participation of workers in protection issues. This law regulates the rights, duties, and responsibilities of public authorities, employers, employees, employee representatives, and other persons in the workplace related to the creation of safe management and healthy working conditions [9].

Important attention has been given to "Safety and Health Management Certificate". For example, there are consulting companies providing practical training in demand by different industrial companies or economic areas/fields. They offer training programs which are designed to develop skills and competences leading to subject matter expertise that they can apply and transfer quickly in their workplace getting improvements in work safety and ergonomics.

The companies advise and supports different learners to reduce and prevent accidents at work by going beyond regulatory compliance and building an effective safety and health management system based on achieving the Safety and Health Management Certificate. The consulting process focuses on training and development of trainees' accident investigation skills, too. Examples of such companies are (some of them do not have web pages?!):

- HSE Consulting;
- Gergili HSE, <https://gergili.ge/shromis-usaprtxoeba/>;
- Safety Products;
- OSHA Georgia, <https://hsegeorgia.ge/>;
- MBG Safety, <https://safety.mb.ge/>;
- SMG Group, <https://smgroup.ge/> etc.

An important aspect of the certification development skills and competences are based on the advanced safety management course and the related knowledge acquisition process. The consultants recognized the following: “developing an intentional safety culture requires much more than programs and regulatory compliance”; during the course, trainees will achieve knowledge of “understanding human performance principles, brain centered hazards, safety leadership traits, and how to truly measure the effectiveness of your safety management system”. Thus, the graduates of this course will prepare to be safety managers in different companies.

A lot of specialized companies provide personal protective equipment (PPE) for different industries and economic fields (e.g., General Supply Georgia, <https://www.facebook.com/GeneralSupplyGeorgia>)

B. Assessment of using level of safety management and ergonomics in Georgia, organization Crystal Ltd

To understand the main aspects of safety management systems in Georgia, this paper includes results of research in one organization, carried out by Tbilisi State University in the Faculty of Economics and Business. The paper provides an overview and analysis of workplace improvement measures, strategies in the organization, safety, and the key ergonomics issues related to organizational success.

LTD. MCO Crystal is a dynamically developing local microfinance organization, which contributes to the development of the micro and small business sector in Georgia.

Currently, "Crystal" has 1200 employees. The organization is represented in the market by 56 branches and 12 service centers [10].

The organization provides improved working conditions for employees, which is reflected in the following: Since 2018, there has been regular training to improve working conditions. The training usually discusses issues such as: the rules of sitting, avoiding ill health, sitting properly, and computer keyboard and monitor placement correctly on the table. The organization also provides a temperature with a ventilation system. The evacuation plan for unforeseen events such as fire, earthquake, etc., is placed on the wall. All employees have been trained in how to use fire extinguishers. Recommendations on how to act in case of unforeseen events such as robbery are discussed. Training is conducted in stages for both branches and head office staff.

The situations of employees of middle and managerial level employed in LTD "MSO" Crystal have been researched by survey method to analyze them according to safety management and ergonomics. Collected information and data were processed and analyzed in qualitative and quantitative ways.

Of the 80 respondents surveyed, there were 24 employees aged 18–25, 34 aged 25–30, 18 aged 30–40, and 4 above 40. The main part of the research includes

questions about the satisfaction of employers, their preference to desire, and the working environment. Most employers (75%) are satisfied with working conditions and management structures in their organization. 20% of employers are neutral about the situation in their organization, and the last 5% are unsatisfied with working conditions. The question to which characteristics of ergonomic working conditions they preferred, we received answers – 44% improving personal space in organizations, 29% improvement in communication, and 27% improvement in lighting systems.

The second important question is regarding training and studying processes in ergonomics. What is the frequency of conducted training? The answer of 51% of surveyors is once a year, 28% of answers is once every two years and 11% of answers is once every six months. As we checked in the organization, they usually conduct training about ergonomics and safety management on average once a year, which includes activities for 4-5 hours. In terms of working conditions improving, most employers mentioned that open communication and trust are two important things for dealing with ergonomic and managerial aspects. The essential point, which we identified during analyses of research studies, is that 85% of them are satisfied with working conditions and environmental ergonomic issues in their organization.

The formation and development of the main managerial and ergonomic systems in an organization is essential. The introduction of the results of ergonomic research into practice has a significant socio-economic effect.

CONCLUSION

Safety management and ergonomics are considered as one of the main aspects of the establishment of a healthy working environment.

The point of the review of the Georgian literature presented in this article reveals a paucity of research supporting the relationship between ergonomics and safety, appropriate skill development, and company performance.

Nevertheless, research shows some correlation between increased demand and skills in the main aspects of ergonomic management and safety management in organizations, which is in direct association with employers' level of satisfaction.

Moreover, the paper identifies the importance of self-efficacy in relation to performance enhancement issues. There has been very little research on these issues in Georgia, and an empirical study of the main areas mentioned in the paper will help to identify areas for improving organizational conditions and success in the future.

As the paper shows, strategies and tactics for improving working conditions may vary from organization to organization, but they have several common components that involve management taking

all possible measures in each environment to improve working conditions and employee productivity.

The assessment of safety management and ergonomics in Georgia is on average level, dependent on low integration of modern technologies in different segments of production, but the support of the government side and accepted regulations regarding this topic play a tremendous role in development strategies.

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