

O. Protasenko, A. Ivashura

Simon Kuznets Kharkiv National University of Economics, Ukraine

WORKPLACE ECO-FRIENDLINESS

The problem of assessing the workplace eco-friendliness is considered. Based on existing developments in ecology, labour protection, ergonomics, and life safety, a definition of the concept of workplace eco-friendliness is proposed. A method for assessing workplace eco-friendliness was developed, which is based on an adapted version of the Fine-Kinney method.

Keywords: *eco-friendliness, workplace, safety, employee, Fine-Kinney method.*

Introduction

Over the last few years, the ‘ecological trend’ has rapidly spread in many countries. In light of this, almost everything a person interacts with (such as household appliances, technological processes, and vehicles) must meet ecological requirements. These are to be as safe as possible for humans and the environment, create comfortable living conditions, have the possibility of reuse or safe disposal, etc. Moreover, now the trend of ecologisation covers not only the issue of ensuring a person’s daily life but also significantly affects the enterprise development policy. Nowadays, the production investment attractiveness and the success of market development directly depend on the environmental policy of the enterprise [1–3]. Today, enterprises are actively working on their eco-policy development and implementation. However, the results of their activities differ significantly in effectiveness. Information search showed that the most successful is the eco-policy that has a comprehensive approach; that is, it not only considers the issue of assessing the negative impact of a company’s activities on the environment and finds ways to minimise it but also investigates and improves the eco-safety of employees. That is why studying and solving problems related to ensuring the eco-safety of employees is one of the most essential tasks for enterprises today. Ensuring the eco-friendliness of the employee’s workplace increases the potential and stimulates the enterprise’s development since a person is the main element of any enterprise, and, therefore, the feeling of maximum comfort and safety at the workplace creates the necessary prerequisites for work [4–6]. Consequently, researching and evaluating the workplace eco-friendliness has been gaining relevance.

Literature Review

Definition of the concept of workplace eco-friendliness. Today, there are many interpretations of the concept of ‘eco-friendliness’, for example, ‘eco-

friendliness of a product or service’, ‘eco-friendliness of an enterprise’, ‘eco-friendliness of building materials’, ‘eco-friendliness of furniture’ [7–12]. Such diversity is explained by the need to consider certain features of various spheres of activity to apply this concept to them. However, the information search showed that there is still no definition of the term ‘workplace eco-friendliness’, although there is a need for this since it is essential not only to assess the workplace organisation but also to assess the impact of the workplace on human health (for example, materials from which tables, chairs, devices are made). This point is essential because it often happens that the workplace is designed according to ergonomic requirements; however, workplace materials have toxic, sensitising, carcinogenic, and other types of negative impacts on human health [13–18]. Moreover, the fact that the premise makes the main contribution to the chemical load on humans during the working day is researched and substantiated. Substances that harm human health can be detected in the office premises air. For example, carcinogenic substances such as formaldehyde, asbestos, benzene, cadmium, radon, and others can be present in the air. They are often in the production of building materials and furniture. Almost 25% of indoor air pollutants have allergic properties. Various solvents and organic substances contained in paints, glues, plastics, polymer materials, tobacco smoke, and other substances that harm the organism can also be in the air of office buildings. Sometimes, the concentration of toxins in the air can reach such a level that employees have upper respiratory tract, bronchitis, allergic conditions, and other negative consequences. In addition, conditionally pathogenic bacteria and moulds are often present in the air of the premises. The probability of increasing their number in premises is related to microclimate parameters (air temperature, relative humidity, presence of constantly wet surfaces) and the number of employees. Microorganisms become especially dangerous when they accumulate in inhaled air or when the organism’s protective properties decrease. Thus, the problem of

microbiological contamination is becoming increasingly acute [19, 20]. Therefore, it is essential to define the concept of workplace eco-friendliness, which will be a significant step in increasing employee safety.

Assessment of workplace eco-friendliness. In addition to the problem of defining the concept, there is another one—assessment of workplace eco-friendliness. It is essential because it is necessary to identify problematic points at the workplace to improve employee safety, which determines the existence of a specific assessment system. There are developments [21–23], but they have several significant drawbacks.

First, in most cases, individual components of the workplace are assessed, usually those that, according to researchers' opinion, have a significant impact on human health. For example, they focus on studying microclimate eco-friendliness; that is, they analyse the presence of toxic, carcinogenic, and other substances in the working air. However, they give the other factors general assessments or do not consider them.

Secondly, researchers use complex equipment to assess the workplace. The use of equipment requires special knowledge and, therefore, the invitation of trained specialists. For example, an employee is unlikely to be able to independently investigate the impact of pollutants, various types of electromagnetic radiation, or the toxicity of materials at the workplace, even if they have equipment. Eventually, the assessment of workplace eco-friendliness becomes complex, long (it can take several days or weeks), and expensive (specialists must be paid). Of course, this does not stimulate the desire of the enterprise's management to engage in this.

Aim and Objectives

The aim is to research and evaluate workplace eco-friendliness since it will improve employee safety. It is necessary to solve the following tasks:

- to develop a definition of the concept of workplace eco-friendliness based on existing developments and achievements in the ecology sphere, labour protection, and ergonomics;
- to develop an easy-to-use and informative method for assessing workplace eco-friendliness.

Discussion of Results

Development of the concept of workplace eco-friendliness. So, the first thing to start with is to define the concept of workplace eco-friendliness. Let us consider the current achievements. As mentioned above, there is no clear definition of workplace eco-friendliness. However, some concepts are close in meaning and can be a basis for further work. Among them are eco-friendliness, eco-safety, and ecology of the workplace. Let us consider their content in more detail.

Eco-friendliness is the quality of something

(material, product, or its element) that reflects its ability not to harm the environment. Human is a part of the environment, so the main idea in this definition, which can be used for further work, is this: workplace elements that provide the labour process should not harm the employee.

Eco-safety is a state in which the ecological comfort of life is not violated, the ability to resist threats to life, the health of all living beings, a person, including his well-being, the right to a safe living environment, sources of livelihood, and natural resources. The essential point in this definition, which can be used for further work, is that the influence of workplace elements on the employee should not disturb the ecological comfort of his life.

One more concept is the **ecology of the workplace**. This concept was developed by the specialists of the KNAUF Group company. It should be noted that this is one of the first attempts to pay attention to the issue of employee safety not only from the point of view of labour protection but also from ecology. Therefore, the ecology of the workplace (the KNAUF Group company) is workplace hygiene, including protection from harmful factors of the external and internal environments; equipping with the necessary equipment that meets modern technical and ecological standards, as well as ergonomics and comfort requirements; the favourable psychological climate in the Company's team [24]. The following component is the most important in the definition: equipping the workplace with equipment that meets modern technical and ecological standards.

Based on the above, there is the following definition of **workplace eco-friendliness**: the state of the workplace in which its elements meet modern technical and ecological standards and do not hurt a human and (or) partially disrupt ecological comfort.

It should be noted that the definition is not final and needs further research and improvement since the problem of workplace eco-friendliness is not too deeply researched.

Development of a method for assessing the workplace eco-friendliness. The next stage is the development of a system for workplace eco-friendliness assessment. First, it is necessary to define and systematise the elements that will be assessed. We divided workplace elements into two groups: exterior (enterprise infrastructure, building eco-friendliness, etc.) and interior (materials of workplace elements, life support systems, etc.). In addition, we introduced quantitative characteristics that made it possible to compare the degree of negative impact of certain workplace elements on the employee. To do this, we used the Fine-Kinney method, which is widely used in many countries to assess the influence of a hazard and the consequences for the employee's health or

safety [25]:

$$R = \text{influence} \times \text{probability} \times \text{consequences.} \quad (1)$$

In the Fine-Kinney method, the degree of hazard influence is from 0 (never influence) to 10 (constant influence). The probability of the hazard’s realisation is from 0 (absolutely impossible) to 10 (most likely to happen). Consequences are from 1 (minimal damage) to 100 (catastrophe). Classification of risks by degree of

seriousness: $R = 0 - 20$ (small risk, possibly acceptable), $R \Rightarrow 400$ (very high risk, immediate termination of activity). The Fine-Kinney method classifies occupational risk into five groups: very light, little, average, high, and extremely high [25].

This method required some adaptation to use for assessing the workplace eco-friendliness. The adapted components of the Fine-Kinney method have the following values (Table 1).

Table 1

The value of the components for assessing workplace eco-friendliness (an adapted version of the Fine-Kinney method)

Influence (0 – 10 points)	Manifestation probability (0 – 10 points)	Negative consequence (1 – 40 points)
0 – never or once in a few years	0 – absolutely impossible	1 – minimal, possible discomfort during work
0.5 – very rarely (several times a year)	0.1 – impossible	3 – a feeling of discomfort and reduced work performance
1 – rarely (one time per month)	0.2 – almost impossible	7 – fatigue during work, low performance
2 – sometimes (several times a month)	0.5 – conceivable, but unlikely	15 – poor health, chronic illness
3 – from time to time (every week)	1 – unbelievable	40 – chronic diseases
6 – regularly (almost daily)	3 – unusual, but possible	
10 – constantly	6 – very likely	
	10 – expected	

The Fine-Kinney method includes a classification for the obtained value interpretation and the choice of further measures. Assessment of workplace eco-friendliness also includes the classification (Table 2).

Table 2

Classification of workplace eco-friendliness levels

Assessment of workplace eco-friendliness (points)	Classification of workplace eco-friendliness levels
> 400	extra low level
200 – 400	low level
50 – 200	average
0 – 50	safe level

A simplified example (only a few elements of the workplace from the list) of the assessment of workplace eco-friendliness is in Table 3.

The assessment of workplace eco-friendliness was

tested at the following workplaces:

- accountant (at the enterprise);
- economist (at the enterprise);
- economist (at the bank);
- computer operator (at the enterprise).

These workplaces were chosen because workers perform similar activities: they work with documents and use computers to perform operations. The average statistical sample of testees was 58 people.

The conducted research has yielded the following results:

1. The proposed method of assessment of workplace eco-friendliness is the next step in improving employee safety and creating more comfortable working conditions because it makes it possible to determine the impact of workplace elements on human health. The importance of this step lies in the fact that safety issues are evaluated only from the standpoint of occupational health and ergonomics, forgetting that objects with which employees come into contact may be safe only at first glance but have toxic, carcinogenic, sensitising and other types of impact on health.

Table 3

Assessment of workplace eco-friendliness

General information:		Date: <u>20.10.2022</u>				
Enterprise «Aquamineral+»		Employee: <u>Ryk A.</u>				
Workplace: <u>computer operator</u>		Consultant: <u>Ivanov V.</u>				
No.	Workplace elements	Workplace eco-friendliness (an adapted version of the Fine-Kinney method)				
		Influence	Manifestation probability	Negative consequence	Eco-friendliness	Comments
Exterior						
1	Eco-friendliness of the enterprise's infrastructure:					
	special parking areas	10	3	7	210 – a low level	There are no organised parking areas. Polluted air enters the premises.
	urns and their maintenance	10	0,2	1	2 – a safe level	–
	premises cleanliness	10	0,5	1	5 – a safe level	–
2	Eco-friendliness of building:					
	concrete structure	10	0,5	1	5 – a safe level	–
	brick construction	–	–	–	–	–
	other*	–	–	–	–	–
Interior						
3	The desktop is made of:					
	chipboard, fibreboard	10	1	3	30 – a safe level	–
	MDF	–	–	–	–	–
	wood	–	–	–	–	–
	other*	–	–	–	–	–
4	Computer:					
	a monitor with an electron beam tube	10	6	7	420 – an average level	Outdated models of monitors are used.
	liquid crystal monitor	–	–	–	–	–
	other*	–	–	–	–	–
Possible ways to improve the workplace eco-friendliness:						
1) create special zones for auto parking;						
2) replace outdated models of monitors with more modern ones.						

Note. Other* are other types of materials not included in the list, but the employee could write them down in the table and rate them.

2. An important point was that the employee independently assessed workplace eco-friendliness but with the participation of eco-safety specialists. This fact is important because, unlike external experts, the employee knows his activity and workplace from a practical point of view and not from a theoretical position. As a result, the employee could precisely determine the degree of negative impact of the workplace elements. However, the employee could have had some difficulties in performing the assessment, which could be due to a lack of knowledge or professional experience. For example, the analysis of the workplace eco-friendliness assessment showed that beginner employees (work experience is less than three

years) rated the negative impact of the workplace elements significantly lower than employees with more work experience.

The conclusions are intermediate since work on the approbation of the assessment of workplace eco-friendliness is ongoing.

Conclusions

To sum up, the following conclusions take place:

1. The analysis of existing achievements in ecology, labour protection, ergonomics, and life safety made it possible to pick out basic concepts for further work on the definition of workplace eco-friendliness.

The following basic concepts were chosen: eco-friendliness, eco-safety, and ecology of the workplace. This choice is due to their content most fully reflecting modern trends in the issue of creating eco-safe working conditions for employees.

2. A method of assessment of the workplace eco-friendliness has been developed. The essence of the method is to determine the workplace elements that hurt the employee. An adapted version of the Fine-Kinney method is proposed for the quantitative assessment of workplace eco-friendliness since it is the easiest to use and, at the same time, informative.

3. A step has been taken to simplify and increase the efficiency of assessing the safety of an employee's workplace. The main idea is that the employee would estimate the workplace eco-friendliness independently. The participation of other specialists (such as specialists in labour protection or eco-safety) should be minimal to ensure consultation on individual issues. It allows:

- to increase the effectiveness of assessment work since it can be carried out more often (there is no need to invite specialists, distract the employees from work, wait for their conclusions, etc.). Thus, it is possible to systematically monitor the changes that occur in the workplace and take prompt actions aimed at reducing their negative impact on employees;

- to increase the employee's responsibility for their safety. When people understand that their working conditions directly depend on them, they will figure out safety issues and not shift liability to the employer.

References

1. Protasenko, O. F., & Ivashura, A. A. (2018). The role of ecofriendliness of the environment in creating safe conditions for human activity. *Open Information and Computer Integrated Technologies*, 80, 210–216. Retrieved from <http://nti.khai.edu/ojs/index.php/oikit/article/view/oikit.2018.8.0.23/107> [in Ukrainian]
2. Lin, C.-T., Chang, Y.-H., & Mi, C. (2017). Develop Eco-Friendly Enterprise: Aligning Enablers with Strategy. *Sustainability*, 9(4), 570. DOI: [10.3390/su9040570](https://doi.org/10.3390/su9040570)
3. Krause, J. (2015). The Potential of an Environmentally Friendly Business Strategy – Research from the Czech Republic. *International Journal of Engineering Business Management*, 7, 6. DOI: [10.5772/60064](https://doi.org/10.5772/60064)
4. Liu, B., & Lu, Q. (2020). Creating a Sustainable Workplace Environment: Influence of Workplace Safety Climate on Chinese Healthcare Employees' Presenteeism from the Perspective of Affect and Cognition. *Sustainability*, 12(6), 2414. DOI: [10.3390/su12062414](https://doi.org/10.3390/su12062414)
5. Zu, L. (2013). Green Workplace. In: S. O. Idowu, N. Capaldi, L. Zu, & A. D. Gupta (Eds.), *Encyclopedia of Corporate Social Responsibility* (pp. 1296–1303). Springer Berlin. DOI: [10.1007/978-3-642-28036-8_1](https://doi.org/10.1007/978-3-642-28036-8_1)
6. Protasenko, O. F. (2018). Research and analysis of indicators ecofriendliness of working environment. *Municipal economy of cities*, 7(146), 127–132. DOI: [10.33042/2522-1809-2018-7-146-127-132](https://doi.org/10.33042/2522-1809-2018-7-146-127-132) [in Ukrainian]
7. Alwisy, A., BuHamdan, S., & Gül, M. (2019). Evidence-based ranking of green building design factors according to leading energy modelling tools. *Sustainable Cities and Society*, 47, 101491. DOI: [10.1016/j.scs.2019.101491](https://doi.org/10.1016/j.scs.2019.101491)
8. Balaban, O., & Puppim de Oliveira, J. A. (2017). Sustainable buildings for healthier cities: Assessing the co-benefits of green buildings in Japan. *Journal of Cleaner Production*, 163, 68–78. DOI: [10.1016/j.jclepro.2016.01.086](https://doi.org/10.1016/j.jclepro.2016.01.086)
9. Román Rodríguez, R. S. (2021, August 9). *What is the workplace environment and why is it important? Ifeel – Humanising Growth*. Retrieved from <http://surl.li/lvccw>
10. Franco, M. A. J. Q., Pawar, P., & Wu, X. (2021). Green Building Policies in Cities: A Comparative Assessment and Analysis. *Energy and Buildings*, 231, 110561. DOI: [10.1016/j.enbuild.2020.110561](https://doi.org/10.1016/j.enbuild.2020.110561)
11. Liu, T., Chen, L., Yang, M., Sandanayake, M., Miao, P., Shi, Y., & Yap, P.-S. (2022). Sustainability Considerations of Green Buildings: A Detailed Overview on Current Advancements and Future Considerations. *Sustainability*, 14(21), 14393. DOI: [10.3390/su142114393](https://doi.org/10.3390/su142114393)
12. Protasenko, O. F., & Mygal, G. V. (2020). Ecological-ergonomic designing as a component of green building. *Scientific and practical journal 'Ecological Sciences'*, 1(28), 302–306. DOI: [10.32846/2306-9716/2020.eco.1-28.48](https://doi.org/10.32846/2306-9716/2020.eco.1-28.48) [in Ukrainian]
13. Brocal, F., González, C., Reniers, G., Cozzani, V., & Sebastián, M. A. (2018). Risk Management of Hazardous Materials in Manufacturing Processes: Links and Transitional Spaces between Occupational Accidents and Major Accidents. *Materials*, 11(10), 1915. DOI: [10.3390/ma11101915](https://doi.org/10.3390/ma11101915)
14. Heuchert M. (2021, April 1). *Limiting the Risk of Exposure to Hazardous Materials in the Workplace with the Correct Use of PPE*. Occupational health & safety (OH&S). Retrieved from <http://surl.li/lmpsd>
15. International Labour Organization. (2021). *Exposure to hazardous chemicals at work and resulting health impacts: A global review*. International Labour Office. Retrieved from <http://surl.li/lmrrmu>
16. National Environmental Trainers. (2020, December 9). *Common Hazardous Materials Found on Jobsites*. Retrieved from <http://surl.li/lmrng>
17. Hughes Safety. (2021, August 19). *Common Hazardous Substances and Safety Equipment Requirements*. Health & Safety International. Retrieved from <http://surl.li/lmrqo>
18. Protasenko, O. F., & Ivashura, A. A. (2016). Ecofriendliness of a Workplace and Workspace. *Open Information and Computer Integrated Technologies*, 73, 118–126. Retrieved from [http://repository.hneu.edu.ua/bitstream/123456789/14855/1/П_ротасенко_13_\(ХАІ\)_Стаття.pdf](http://repository.hneu.edu.ua/bitstream/123456789/14855/1/П_ротасенко_13_(ХАІ)_Стаття.pdf) [in Ukrainian]
19. Paillé, P., Amara, N., & Halilem, N. (2018). Greening the workplace through social sustainability among co-workers. *Journal of Business Research*, 89, 305–312. DOI: [10.1016/j.jbusres.2017.12.044](https://doi.org/10.1016/j.jbusres.2017.12.044)
20. Usman, M., Rofcanin, Y., Ali, M., Ogbonnaya, Ch., & Babalola, M. T. (2023). Toward a more sustainable environment: Understanding why and when green training promotes employees' eco-friendly behaviors outside of work. *Human Resource Management*, 62(3), 355–371. DOI: [10.1002/hrm.22148](https://doi.org/10.1002/hrm.22148)
21. Davis, M. C., & Challenger, R. (2013). Environmentally Sustainable Work Behavior. In P. C. Flood, & Y. Freney (Eds.), *Wiley Encyclopedia of Management: Organizational Behavior* (3rd ed., vol. 11, pp. 1–10). Wiley. DOI: [10.1002/9781118785317.weom110022](https://doi.org/10.1002/9781118785317.weom110022)
22. Jahanshahi, A. A., Maghsoudi, T., & Shafiqhi, N. (2021). Employees' environmentally responsible behavior: the critical role of environmental justice perception. *Sustainability: Science, Practice and Policy*, 17(1), 1–14. DOI: [10.1080/15487733.2020.1820701](https://doi.org/10.1080/15487733.2020.1820701)
23. Protasenko, O. F., & Mygal, G. V. (2020). Eco-ergonomic Designing of Working Environment. *Open Information and*

Computer Integrated Technologies, 89, 104–122. DOI: [10.32620/oikit.2020.89.09](https://doi.org/10.32620/oikit.2020.89.09)

24. Knauf Industries. (2023). Workplace environment. Retrieved from <http://surl.li/lpofh>

25. Kinney, G. F., & Wiruth, A. D. (1976). *Practical Risk Analysis for Safety Management* (NWC TP 5865). Naval Weapons Center. Retrieved from <https://apps.dtic.mil/sti/pdfs/ADA027189.pdf>

Література

- Протасенко О. Ф. Роль екологічності середовища у створенні безпечних умов діяльності людини / О. Ф. Протасенко, А. А. Івашира // Відкриті інформаційні та комп'ютерні інтегровані технології. – 2018. – Вип. 80. – С. 210–216. – Режим доступу: <http://nti.khai.edu/ojs/index.php/oikit/article/view/oikit.2018.8.0.23/107>, вільний (дата звернення: 27.09.2023).
- Lin C.-T. Develop Eco-Friendly Enterprise: Aligning Enablers with Strategy / C.-T. Lin, Y.-H. Chang, C. Mi // Sustainability. – 2017. – Vol. 9 (4). – P. 570. – DOI: [10.3390/su9040570](https://doi.org/10.3390/su9040570).
- Krause J. The Potential of an Environmentally Friendly Business Strategy – Research from the Czech Republic / J. Krause // International Journal of Engineering Business Management. – 2015. – № 7. – 6 p. – DOI: [10.5772/60064](https://doi.org/10.5772/60064).
- Liu B. Creating a Sustainable Workplace Environment: Influence of Workplace Safety Climate on Chinese Healthcare Employees' Presenteeism from the Perspective of Affect and Cognition / B. Liu, Q. Lu // Sustainability. – 2020. – Vol. 12 (6). – 17 p. – DOI: [10.3390/su12062414](https://doi.org/10.3390/su12062414).
- Zu L. Green Workplace / L. Zu // Encyclopedia of Corporate Social Responsibility / S. O. Idowu, N. Capaldi, L. Zu, A. D. Gupta. – Heidelberg (Germany) : Springer Berlin, 2013. – P. 1296-1303. – DOI: [10.1007/978-3-642-28036-8_1](https://doi.org/10.1007/978-3-642-28036-8_1).
- Протасенко О. Ф. Дослідження й аналіз показників екологічності робочого середовища / О. Ф. Протасенко // Комунальне господарство міст. – 2018. – № 7 (146). – С. 127–132. – DOI: [10.33042/2522-1809-2018-7-146-127-132](https://doi.org/10.33042/2522-1809-2018-7-146-127-132).
- Alwisy A. Evidence-based ranking of green building design factors according to leading energy modelling tools / A. Alwisy, C. BuHamdan, M. Gül // Sustainable Cities and Society. – 2019. – Vol. 47. – 12 p. – DOI: [10.1016/j.scs.2019.101491](https://doi.org/10.1016/j.scs.2019.101491).
- Balaban O. Sustainable buildings for healthier cities: Assessing the co-benefits of green buildings in Japan / O. Balaban, J. A. Puppim de Oliveira // Journal of Cleaner Production. – 2017. – Vol. 163. – P. 68–78. – DOI: [10.1016/j.jclepro.2016.01.086](https://doi.org/10.1016/j.jclepro.2016.01.086).
- What is the workplace environment and why is it important? [Electronic resource] / Ifeel – Humanising Growth : website. – Madrid (Spain), 2023. – Updated continuously. – Regime of access: <http://surl.li/lvccw>, free (date of the application: 13.08.2023).
- Franco M. A. J. Q. Green building policies in cities: A comparative assessment and analysis / M. A. J. Q. Franco, P. Pawar, X. Wu // Energy and Buildings. – 2021. – Vol. 231. – 45 p. – DOI: [10.1016/j.enbuild.2020.110561](https://doi.org/10.1016/j.enbuild.2020.110561).
- Sustainability Considerations of Green Buildings: A Detailed Overview on Current Advancements and Future Considerations / T. Liu, L. Chen, M. Yang, M. Sandanayake, P. Miao, Y. Shi, P.-S. Yap // Sustainability. – 2022. – Vol. 14 (21). – 23 p. – DOI: [10.3390/su142114393](https://doi.org/10.3390/su142114393).
- Протасенко О. Ф. Еколого-ергономічне проектування як складова зеленого будівництва / О. Ф. Протасенко, Г. В. Мигаль // Екологічні науки : науково-практичний журнал. – 2020. – № 1(28). – С. 302–306. – DOI: [10.32846/2306-9716/2020.eco.1-28.48](https://doi.org/10.32846/2306-9716/2020.eco.1-28.48).
- Risk Management of Hazardous Materials in Manufacturing Processes: Links and Transitional Spaces between Occupational Accidents and Major Accidents / F. Brocal, C. González, G. Reniers, V. Cozzani, M. A. Sebastián // Materials. – 2018. – Vol. 11 (10). – 23 p. – DOI: [10.3390/ma11101915](https://doi.org/10.3390/ma11101915).
- Limiting the Risk of Exposure to Hazardous Materials in the Workplace with the Correct Use of PPE [Electronic resource] / Occupational health & safety (OH&S) : website. – Dallas, TX (USA), 2023. – Updated continuously. – Regime of access: <http://surl.li/lmpsd>, free (date of the application: 20.08.2023).
- Exposure to hazardous chemicals at work and resulting health impacts: A global review / International Labour Organization. – Geneva (Switzerland) : International Labour Office, 2021. – 95 p. – Regime of access: <http://surl.li/lmrmu>, free (date of the application: 19.09.2023).
- Common Hazardous Materials Found on Jobsites [Electronic resource] / National Environmental Trainers : website. – Wake Forest, NC (USA), 1996–2023. – Updated continuously. – Regime of access: <http://surl.li/lmrng>, free (date of the application: 17.09.2023).
- Common Hazardous Substances and Safety Equipment Requirements [Electronic resource] / Health & Safety International : website. – Weymouth, Dorset (England), 2023. – Updated continuously. – Regime of access: <http://surl.li/lmrqo>, free (date of the application: 17.09.2023).
- Протасенко О. Ф. Екологічність робочого місця і простору / О. Ф. Протасенко, А. А. Івашира // Відкриті інформаційні та комп'ютерні інтегровані технології. – 2016. – Вип. 73. – С. 118–126. – Режим доступу: [http://repository.hneu.edu.ua/bitstream/123456789/14855/1/II_protasenko_13_\(XAI\)_Статья.pdf](http://repository.hneu.edu.ua/bitstream/123456789/14855/1/II_protasenko_13_(XAI)_Статья.pdf), вільний (дата звернення: 27.09.2023).
- Paillé P. Greening the workplace through social sustainability among co-workers / P. Paillé, N. Amara, N. Halilem // Journal of Business Research. – 2018. – Vol. 89. – P. 305–312. – DOI: [10.1016/j.jbusres.2017.12.044](https://doi.org/10.1016/j.jbusres.2017.12.044).
- Toward a more sustainable environment: Understanding why and when green training promotes employees' eco-friendly behaviors outside of work / M. Usman, Y. Rofcanin, M. Ali, Ch. Ogbonnaya, M. T. Babalola // Human Resource Management. – 2023. – Vol. 62, Is. 3. – P. 355–371. – DOI: [10.1002/hrm.22148](https://doi.org/10.1002/hrm.22148).
- Davis M. C. Environmentally Sustainable Work Behavior / M. C. Davis, R. Challenger // Wiley Encyclopedia of Management: Organizational Behavior / P. C. Flood, Y. Freaney. – 3th ed. – Chichester, West Sussex (England) : Wiley, 2013. – Vol. 11. – P. 1–10. – DOI: [10.1002/9781118785317.weom110022](https://doi.org/10.1002/9781118785317.weom110022).
- Jahanshahi A. A. Employees' environmentally responsible behavior: the critical role of environmental justice perception / A. A. Jahanshahi, T. Maghsoudi, N. Shafiqhi // Sustainability: Science, Practice and Policy. – 2021. – Vol. 17 (1). – P. 1–14. – DOI: [10.1080/15487733.2020.1820701](https://doi.org/10.1080/15487733.2020.1820701).
- Protasenko O. F. Eco-ergonomic Designing of Working Environment / O. F. Protasenko, G. V. Mygal // Відкриті інформаційні і комп'ютерні інтегровані технології. – 2020. – Вип. 89. – С. 104–122. – DOI: [10.32620/oikit.2020.89.09](https://doi.org/10.32620/oikit.2020.89.09).
- Workplace environment [Electronic resource] / Knauf Industries : website. – Wolfgantzen (France), 2023. – Updated continuously. – Regime of access: <http://surl.li/lpofh>, free (date of the application: 27.09.2023).
- Kinney G. F. Practical Risk Analysis for Safety Management (NWC TP 5865) / G. F. Kinney, A. D. Wiruth. – China Lake, CA (USA) : Naval Weapons Center, 1976. – 25 p. – Regime of access: <https://apps.dtic.mil/sti/pdfs/ADA027189.pdf>, free (date of the application: 27.09.2023).

Reviewer: Doctor of Engineering Sciences, Professor Oksana Borysenko, National Technical University “Kharkiv Polytechnic Institute”, Ukraine.

Author: PROTASENKO Olga
Candidate of Engineering Sciences, Assistant Professor,
Department of Hotel and Restaurant Business
Simon Kuznets Kharkiv National University of Economics
E-mail – olha.protasenko@hneu.net
ID ORCID: <https://orcid.org/0000-0002-8203-5703>

Author: IVASHURA Andrii
Candidate of Agricultural Sciences, Assistant Professor,
Department of Healthy Lifestyle, Technologies and Life
Safety
Simon Kuznets Kharkiv National University of Economics
E-mail – ivashura.a@ukr.net
ORCID ID: <https://orcid.org/0000-0002-0022-7489>

ЕКОЛОГІЧНІСТЬ РОБОЧОГО МІСЦЯ

О.Ф. Протасенко, А.А. Івашура

Харківський національний економічний університет імені Семена Кузнеця, Україна

Сьогодні у світі все більше набуває популярності “екологічна тенденція”. У світлі цього об’єкти, процеси та технології, які людина використовує, повинні відповідати екологічним вимогам. Більше того, наразі екологічний тренд охопив не лише питання повсякденної життєдіяльності людини, а й розвитку підприємств. За фактом інвестиційна привабливість сучасного виробництва залежить від його екологічної політики. Відповідно до цього, підприємства розробляють власні екологічні політики. І, як показує досвід, найбільш успішною є екологічна політика, яка враховує не лише вплив діяльності підприємства на навколишнє середовище, а й екологічну безпеку працівників на робочих місцях. Саме тому розгляд проблем, пов’язаних із забезпеченням екологічної безпеки працівника, – на сьогодні одне з найбільш важливих завдань для підприємств. Забезпечення екологічності робочого місця обумовлює відчуття максимального комфорту і безпеки на робочому місці для працівника. Як наслідок, формуються необхідні передумови для підвищення ефективності діяльності працівника. Таким чином, на сьогодні актуальним є дослідження й оцінювання екологічності робочого місця працівника.

Інформаційний пошук дозволив виділити базові поняття для розроблення визначення терміну “екологічність робочого місця”. Серед таких понять екологічність, екологічна безпека та екологія робочого простору, зміст яких відображає ключові моменти, необхідні для створення екологічно безпечних умов праці. На основі зазначених понять запропоновано визначення терміну “екологічність робочого місця”. Крім того, у статті представлений метод оцінювання екологічності робочого місця, суть якого полягає у кількісному оцінювання екологічності робочого місця на базі адаптованого варіанту методу Файн-Кінні. Експериментальне випробовування запропонованого методу дозволило не тільки оцінити екологічність робочого місця, а й спростити процедуру дослідження. Досягти цього стало можливо завдяки тому, що оцінювання проводили не фахівці з питань охорони праці, екологічної безпеки та ін., а працівники. У свою чергу, це дозволило одержати такі результати:

– збільшити ефективність робіт з оцінювання, оскільки їх можна проводити частіше (немає потреби запрошувати фахівців, відволікати працівника від роботи, чекати висновків та ін.). Таким чином, можна систематично відслідковувати зміни на робочому місці та своєчасно застосовувати дії, спрямовані на зменшення їхнього негативного впливу;

– підвищити відповідальність працівника за власну безпеку, бо коли людина розуміє, що від неї залежить, якими будуть умови її праці, вона буде зацікавлена у тому, щоб розумітися на питаннях безпеки, а не перекладати відповідальність на роботодавця.

Ключові слова: екологічність, робоче місце, безпека, працівник, метод Файн-Кінні.