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CASE STUDY

Ecological intelligence and youth value orientations towards innovation in achieving sustainable development goals

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ABSTRACT

BACKGROUND AND OBJECTIVES: To date, much of the research has addressed the question of how sustainability can be achieved through innovative environmental projects proposed by concepts and theories in the field of sustainable development. This case study reflects the new formation of ecologically valid guidelines. Ecological intelligence caused by the impact of the environmental changes and the related risks. Modern developments and implementation of innovations support the achievement of the sustainable development goals. The purpose of this study is to examine the role of youth value orientation and ecological intelligence towards innovations in the realization of the sustainable development goals, development, and implementation of innovations depending on the differentiations of priorities of these goals.

METHODS: The methodology of this study presents the thematic overviews on the subject, related to the study conducted, statistics data and the qualitative research on the online questionnaire designed to collect data. The respondents' answers showed awareness of the problems facing the inhabitants of planet Earth today, and the importance of introducing innovations to achieve the 17 Sustainable Development Goals.

FINDINGS: The information obtained in the survey on the differentiation according to the priority of the SDGs for the development and implementation of innovations showed that solutions to the problems of environmental sustainability are considered a priority by one in four of the respondents participating in the survey (82.9%). At the same time, in the implementation of the SDGs that focus on achieving environmental sustainability, the fight against change is considered more important. The fact that none of the 17 Sustainable Development Goals has a priority score of 0 indicates that innovation and implementation are needed to achieve each goal.

CONCLUSION: Without ecological intelligence and value orientations on the importance of innovative developments, it is impossible to understand the consequences of human impact on the environment and the importance of developing and implementing innovations for the continuation of life on planet Earth. That's the point why over one-third of respondents consider additional environmental knowledge to be significant, regardless of future profession. The study may interest philosophers, sociologists, psychologists and anyone concerned with the stability of planet Earth.

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INTRODUCTION

Today's changing world dictates the topic of general interest – environmental concerns which demonstrate the need for the development of Ecological Intelligence (EI) and Value Orientations (VOs). Satisfying the need for innovation has become one of the major problems of our time. In this article, it is hypothesized EI and VOs demonstrate the ability to differentiate priorities of Sustainable Development Goals (SDGs) for the development and implementation of innovations aimed for preventing an anthropological catastrophe. Current reality demonstrates that fulfilling life depends on achieving environmental, economic and social sustainability, which is linked to EI and VOs of a personality. The research concentrates on young people because the definition of a member of a group involves a longer life on the planet. Due to the fact that the definition and nuances of the term vary from country to country, depending on social, economic, political, institutional, cultural, and other factors. The research is based on the definition provided by United Nations (UN) during preparations for the 1985 International Year of Youth, A/36/215 (TCG4/12, 2018) endorsed by the General Assembly in its resolution 36/28 from 1981 (Angel, 2015) of young people aged from 15 to 24 years - 15.3 % of the total population of the planet Earth (for 2022 - 7.953.952.576 people) (Population Pyramids, 2022). As representatives of this group, the paper focuses on young students and their ability to differentiate the priority of the 17 SDGs for the introduction and development of innovations, EI, and VOs, for environmental, social, and economic sustainability are examined in the article. EI is the ability to comprehend the vital links between people and nature, the awareness of the importance of minimizing human impact on the environment, and innovations to achieve sustainable development (SD) and harmonious relationships between people and nature. Ecological or naturalistic intelligence – one of the last additions to H. Gardner's theory, is characterized, among others, by the consciousness of minor changes in the environment (Sadiku and Musa, 2021), the ability to comprehend the relationship between man and nature (Vreja and Balan, 2018). None of the SDGs can look forward to further development if their values are not realized properly for improving life on the planet, which explains the formation of youth sustainable values. As a central concept in the investigation of human behavior in the context of nature conservation, understanding environmental values shows the effectiveness of environmental policy. VOs is considered as one of the universal concepts in the system of philosophical and humanitarian discourse, reflects the orientations that determine the relation, the behavior and the actual actions (Njoku, 2007; Tabat, 2020). The article examines 17 SDGs and young people's views on the need development and implementation of innovations, by choosing top five goals which reflect EI and VOs of youth, and demonstrate the capacity to differentiate the priority of the SDGs. Awareness of modern youth of the ecological problem, gives an opportunity to avoid the danger of anthropological catastrophe – the destruction of humankind. With the deterioration of the ecological situation, humanity has begun to think more and more about its environmental security (De Grenade *et al.,* 2016). This term includes everything that concerns the sphere of human interaction with nature - the preservation of natural landscapes (SDG 15), conservation of biodiversity, flora and fauna (SDG 14, 15) (Krause and Tilker, 2022), sustainable urban environments (SDG 11) (Baffoe *et al.,* 2021). All of this encourages the promotion of environmental initiatives at all levels (Uddin *et. al.,* 2021). The natural world around us: water and air, and all the natural resources necessary for civilization and its functioning (SDG 6), which at present all three vital elements under ecological risk (Ekere *et al.*, 2020; Mohebbi *et. al.,* 2022), which, according to the research, can be reduced through the implementation of a broader vision of innovation within the context of environmental safety. Values, beliefs, and situational components of environmental awareness show that VO has both direct and indirect effects on forming a range of knowledge about the environment (Candrianto *et al*., 2022). One of the top five goals selected by the students was SDG 12, where the implementation of innovations, modern technologies, and corporate pro-environmental behavior defined by IE and VOs of its employees for ensuring sustainable consumption and production patterns (SDG 12). Given the significant increase of interest in innovation in the corporate environment, as evidenced by the Boston Consulting Group's (2021) annual ranking of the top 10 eco-innovative companies: 1. Apple; 2. Alphabet; 3. Amazon; 4. Microsoft; 5. Tesla Transport

& Energy; 6. Samsung; 7. IBM Technology; 8. Huawei; 9. Sony; 10. Pfizer. Innovations, their development, and implementation are important for the prevention and liquidation of the disasters. EI and VOs of youth as future employees of organizations are a driving force for lasting change through innovative processes, which are required in the modern world. Intellectual habits help to increase the activity and effectiveness of people (Tajpour *et al*., 2018), and EI could change modern youth VOs and behavior towards the realization of SDGs. The lack of investment in the workforce leads to a low level and organization, and the country as a whole (Pourehtesham, 2022). Youth education has great potential and can be transformed both in training professionals in basic and applied sciences and in research activities, where the importance of innovation progress for the progress of humanity is determined by its focus on understanding the complexity of nature and finding solutions to unsolved problems. The study of the behavioral side explains the concept of EI by itself. The ability of young people to understand the impact of their actions on the environment, on the need to think more carefully about the consequences of their actions, which is not limited to buying organic products (Stefanovic, 2022), using energy-saving light bulbs, unplugging electrical appliances, etc. (Udalov *et al*., 2017) The real action to develop EI is to "change the way of thinking...." (Goleman, 2009). The popularity and relevance of the concept of innovation ecosystem (SDG 15) in recent decades explains the interest of the global academic community in this problem. Implementation of innovations is the way to change, redesign, build products, and processes in the ways that reduce: environmental impacts, effects of production, CO2 emissions (Ji *et al.,* 2021; Hajikhani and Suominen, 2022). Socioeconomic factors of a particular country and region determine the VOs based on trust and shared values creation that meet agreed-upon quality standards (Porter and Hawkins, 2019; Oliveira-Duarte *et al.,* 2021). Innovative environmental projects, work of the scientists from private companies, research institutes, and universities that function as educational, scientific, and practical complexes where research practice is an integral part of educational programs (Nesmeyanov and Petrova, 2019). Innovation takes the form of new products and processes that minimize natural resources and produce minimal emissions of pollutants. Young students studying in universities, which are generally located in large cities, face every day urbanization and demographic change. Urban sprawl is considered a particular form of urban development that has environmental and social impacts (Jahanbani and Lashkari, 2022). "Rapid and unplanned urbanization is leading to urban sprawl". One of the unpleasant byproduct of urban life is household waste. The SDGs are interconnected, such as SDG 11 "Sustainable Cities and Communities" addresses all objectives, and many of solutions for sustainable cities are on the cutting edge of finding sustainable solutions. (Petrova *et al.,* 2021). The use of plastic, especially in big cities is one of the most serious environmental problems on Earth that requires immediate and decisive action. Using the United States as an example, at the end of the 20th century, plastics accounted for 9.3% of the 200 million tons of municipal solid waste (Borchardt, 2000), while at the beginning of the 21st century, plastics accounted for 11.3% or 26.7 million tons (53.3 billion lb. (24.63 kg.)) of the > 236 million tons of municipal solid waste (Borchardt, 2006). In 2015, only 9% of plastic waste was successfully recycled (Thiounn and Smith, 2020). But now the seemingly impossible is becoming possible, thanks to the Biomolecular Science Enzyme Innovation Center, which has developed a super enzyme that can increase sixfold the degradation of plastic. The scientists have combined two enzymes occurring naturally in beetles living in the landfills in Japan (Knott *et al.,* 2020), this innovation took four years before it was presented to public research society. As it is known, not only the scientific but also the social dimension of innovation is increasing due to the unprecedented challenges facing humanity in the 21st century. This dynamic complexity requires new cross-scale, interdisciplinary, and action-oriented approaches to research. Forms of innovation offer the creation of effective collaborative structures, concrete actions that address local, regional, and global problems, and the productivity of new forms of research (Anadon *et al.,* 2016). Innovation has a direct impact on pollution prevention, resource conservation, and recycling (Yurdakul and Kazan, 2020). Ecologically modified sequences require major and fundamental technological innovations, rather than slow, gradual changes (Jarić *et al.,* 2020). Studies investigating the influence of various 'green' human resource practices

on environmental behavior consider the problem as directly related to pro-environmental behavior (Jehan *et al*., 2020). The environmental behavior is based on the personal control, the thought, and EI of youth, promoting innovation. This article addresses a problem related to SD policy and SD science in general, namely, how young people understand a sustainable present for themselves and for future generations, at least by becoming aware of global changes on the planet today and, to the maximum extent possible, and implementing eco-innovative solutions in the lives of tomorrow. The purpose of this study is to examine EI and youth VOs on the development and implementation of innovations based on the differentiations of SDGs. The place of the study is Higher Education Institutions where the survey of the young people among students was conducted in 2022 in two universities Don State Technical University and Rostov State University of Economics, Rostov-on-Don, Russia. The results of the research survey show a new frame of reference of youth. In the article IE and VOs of modern youth are discussed on the differentiation of priority sustainable development objectives for the development and introduction of innovations by young people.

MATERIALS AND METHODS

The introduction provides a thematic overview on the subject and related topics. Qualitative research results were obtained according to the data from the on-line questionnaire. The inclusion criteria for case studies in the introduction were research topics and abstracts. 69 articles were originally selected. After limiting mainly by date of publication and avoiding duplication, the number of articles was reduced to 52, which were fully read and included in the final bibliography. The qualitative part of the study is based on a methodology for gathering data. The focus is on the opinions and viewpoints of respondents and not on the amount of data. Obviously, respondents are not the only representatives of today's young people. The survey was conducted in this group because young modern students are more likely to become politicians, public servants, corporate leaders, business people and, of course, scientists. Those whose decisions within the next few decades will largely determine the quality and continuity of life on the planet. Students were given two questions in the survey. In the questionnaire, students were asked two questions. The first was intended to determine the respondents' opinion on the need to obtain more information on environmental issues and developments in the field of innovation, which shows the initiative to develop their personality and involves direct participation in theoretical, practical and investment work to implement the SDGs. The second 5-choice question was formulated to find out how respondents could differentiate the SDGs in terms of the importance of innovation design for implementation. In answering this question, it is assumed that respondents are aware of both the SDGs and the consequences of an innovative decision to achieve the goals. The online survey method is selected according to criteria such as accessibility, cost-effectiveness and simplicity. The program survio.com was used to calculate response rates as well as analyze trends. In terms of conditional probability of the percentage of the participants, the following proportion was suggested: Ω (N1) = {all the survey participants = 239}, Ω (N2) = {the overall number of students, who took the questionnaire = 242}. To find the proportion, count up the number of students who took part in the survey (N1), and divide by total number of participants (N2) – N1 / N2 = 1,01, which means that almost 100 % of students took part in the survey, which provides a high result of the questionnaire response and gives a good overview of the research tasks. The data from the social survey were collected at two universities in the city of Rostov-on-Don, the largest city in southwest Russia, the administrative center of the southern federal district and the Rostov region. The Data processing for this part of the study was also facilitated by digital technologies, in particular the website site – survio.com. Respondents ranged in age between 19 and 22 years. Students were informed that their participation was voluntary and confidential and that they had the right not to participate in the survey. Number of respondents who participated in the survey- 242 students, 3 questionnaires were not completed. It is a good indicator of student activity, and enough questionnaires to work with the hypothesis put forth in the study. The qualitative results were collected using a data collection methodology that was done through a link to an electronic social survey and sent to bachelor students via messengers in October 2022. Students who accepted to participate in the survey completed online questionnaires. There was no time

limit on the completion of the survey. The storage of the completed questionnaires was limited to five days.

RESULTS AND DISCUSSION

The problems that the whole humanity are facing today has become a basic requirement for the process of formation of EI and VOs of modern youth, as the conditions for achieving the SD. Considering the main goal of the study of EI and modern youth VOs towards innovation to achieve sustainable development goals and the research hypothesis that EI and VOs of youth demonstrate the capacity to differentiate the priority of the SDGs for the development and implementation of innovations aimed for preventing an anthropological catastrophe. The conceptual model in Fig. 1 illustrates the importance of EI and VOs towards development and implementation of innovations in achieving SD.

The results of the survey show that understanding of life-long education and training is an integral part of the modern person, which get environmental information and advice based on youth competency values. Finding information about the environment, achieving global sustainability, depends on every individual. Awareness of the need for the development of EI and VOs is reflected in the responses to the first question of the questionnaire. The first question focused on understanding the importance of respondents' knowledge of the environment in achieving sustainability (regardless of the qualification of the degree) in Fig. 2.

The findings demonstrate the need to reinforce ideological environmental work to protect the environment. Responses to the first question on the questionnaire indicate a willingness to develop EI and VOs. Values to acquire or not to acquire additional environmental knowledge related to changes in the environment, helping to understand the relationship between man and nature. The second question was

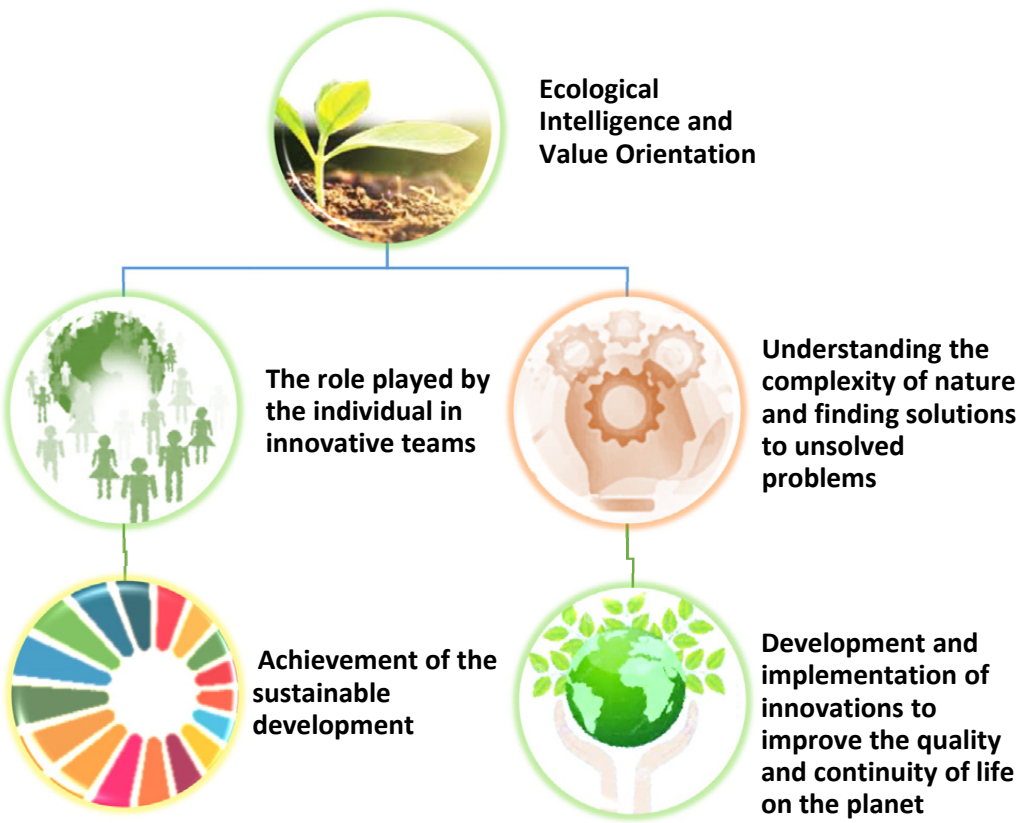

Fig. 1: The concept model illustrates the importance of EI and VO towards development and implementation of innovations in the achievement of SD

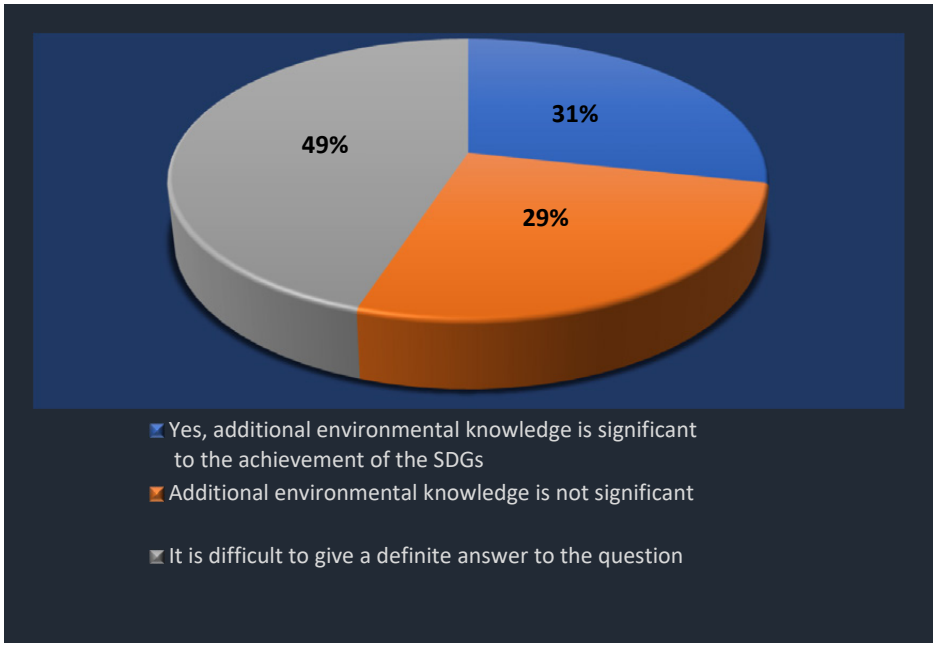

Fig. 2: Do you think that knowing each person's environment is important to achieving sustainability (regardless of the qualification of the degree)?

formulated to evaluate students' awareness in the field of SDGs and the importance of the development and implementation of innovations for each SDGs. The multiple-choice question (no more than 5 out of 17 SDGs) is the following: Which SDGs should be at the top in development, dissemination and implementation of innovations? From the whole number of respondents - 242, the number of questionnaires with five SDGs selected - 101, with four SDGs selected - 80, with three SDGs selected - 51, with two SDGs selected - 6, with one option - 4, three questionnaires were not hidden, that presented in Table 1.

This is not just dry data for the qualitative analysis of SDGs and innovation. The results of the survey gave a sense of the attitude of student youth representatives in the choice of SDGs for the implementation of innovative solutions, has contributed to the understanding that EI and VOs of today's youth, by emphasizing innovation, contribute to achieving the SDGs. 31 % of respondents consider additional environmental knowledge to be significant, regardless of future professions. Nevertheless, the fight against climate change (SDG 13) is the most difficult task that respondents believe we must all face together here and now. The fact that this issue, which according to the survey should prioritize the introduction of innovations, does not compete with other SDGs means that it is considered a priority. The next step in the development of EI, after the formation of eco-habits of each member of society, is the alignment of actions with these habits, which requires a complete change of lifestyle. However, the results are incomparable – it is the creation of young people for their parents, themselves and even more for future generations. Innovation, according to respondents, can be of great benefit in achieving goals such as in Fig. 3.

Each of the SDGs at the bottom of the ranking is important to respondents. Regarding the fifth place in the list of SDGs that is a matter of priority in innovative development, there are almost two goals: the creation, protection and restoration of water resources (Goal 14) and the Earth conservation and sustainable use of biodiversity (Goal 15), have roughly the same value for results on differentiating priorities in the development and implementation of innovations foe achieving SDGs. The list of 17 SDGs is an urgent call for economic, environmental, and social domains. With 100% of the five variants selected,

Table 1: Multiple-choice question of the respondents (no more than 5 of 17 SDGs)

№ SDGs	Description of the SDGs	Number of choices by respondents	Percentage of the total number of choices
13	Take urgent action to combat climate change and its impacts	239	24.19
6	Impact Clean water and sanitation for all	145	14,68
11	Make cities and human settlements inclusive, safe, resilient and sustainable	142	14,37
12	Ensure sustainable consumption and production patterns	139	14,07
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	74	7,5
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss	72	7,28
other SDGs		177	17,91
total		988	100

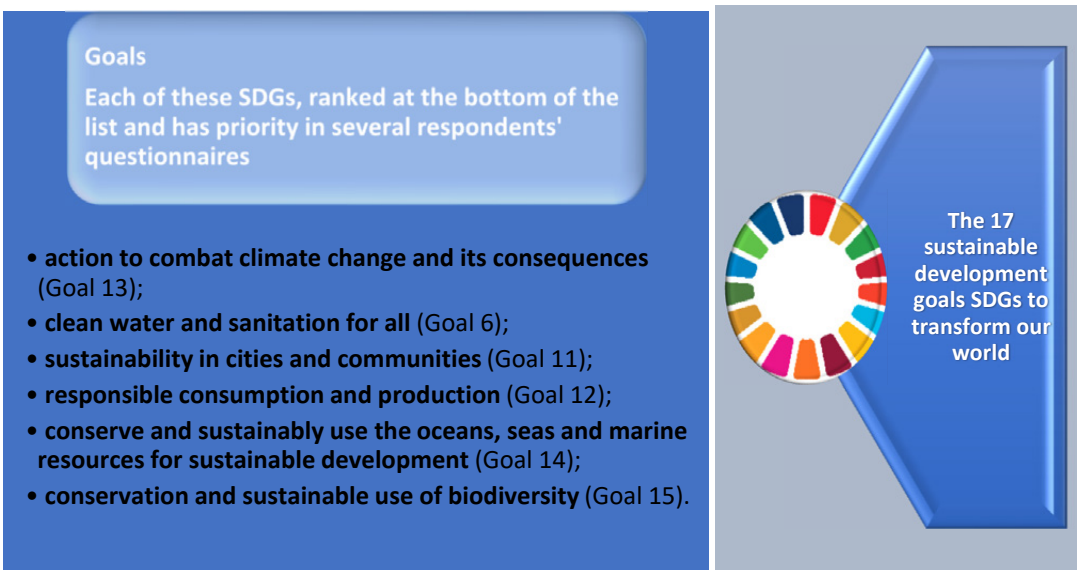

Fig. 3: The respondents' questionnaire results

the quantity was 1210 (x), with 994 responses (y), absolute error 222 (n = x - y). Relative error 0, 22 (p = n / y). As the survey shows, the primary direction in the value importance of innovations in achieving the SDGs is determined also with regard to the relative error of the field of the environment.

The author is aware that the characteristics of such a survey do not reflect all the information, but the survey was conducted to determine youth opinions about the meaning of innovations to achieve

the SDGs, EI and VOs of youth demonstrate the capacity to differentiate the priority of the SDGs for the development and implementation of innovations aimed for preventing an anthropological catastrophe. Today, it is time to embrace a broader vision of innovation in achieving environmental sustainability. The EI of modern youth means adopting a completely different way of thinking, opening minds, and being willing to change how water and land resources are used, how and from what is built, what and how is produced and consumed. The results of the survey show that understanding of education and training throughout life is an integral part of the modern personality. The willingness to develop ecological intelligence and value orientation is everyone's choice. Finding environmental information, achieving global sustainability depends on every individual. Researchers around the world are working to find better ways to solve complex environmental problems are focused on the European countries (Ostraszewska and Tylec, 2019). To protect the environment and human health, national governments are establishing special organizations to develop environmental strategies and promote environmental leadership, provided a voice and active role for youth at the 15th Conference of the Parties to the Convention on Biological Diversity (MAB Youth, 2019) and UNESCO's Man and the Biosphere (MAB) (Thormann and Arth, 2022). No less significant accomplishment of research is the knowledge about the effects of climate change on human health and the environment (SDG 13). Scientific information and research tools can be used by communities to address the climate crisis effectively, equitably, and sustainably, under debate at the UN Youth Summit on Climate Change (Thew *et. al*., 2021). When considering actions to promote innovation at the global level, one cannot help but mention the work of one of the many networks UN working to accelerate the search for solutions to achieve the SDGs – SDSN Youth (Youth Initiative), which since 2018 has annually launched competitions for young people (up to 35 years old) with innovative solutions or ideas aimed at achieving one or two SDGs, and 2022 was no exception (Global SDG Indicators Data Platform, 2022). In academic circles, environmental issues and concerns were, at an early stage of the debate, mainly considered from an ecological point of view, from the point of view of harmfulness to the biosphere and the ecosystem (Hernández-Blanco *et al.,* 2022), but the biospheric approach with reference to ecological objects (land, subsoil, soil, groundwater etc.) has not remained the mainstream. Understanding the impacts of climate change and global warming is of immediate importance for innovative thinking. Nowadays, every season brings changes in weather, people feel climate change and atmospheric warming, and they become less and less predictable, both in terms of the nature of the phenomenon itself and the extent of the threat to human life. For example, the news about the powerful typhoon "Nanmadol" that hit the southwestern part of the Japanese island of Kyushu on September 18, 2022, moving northeast toward the city of Fukuoka at a speed of 180 km per hour (The Japan Times, 2022), fatalities in Florida, North Carolina, and Cuba after the Hurricane "Ian" on October 02, 2022 (Santana and Kinnard, 2022). This shows that weak infrastructure and lack of preparedness are the causes of natural disasters (Abdel Hamid *et al.,* 2020). The relevance of the study of the modern youth EI and VOs demonstrate the ability to differentiate priorities of sustainable development goals (SDGs) for the development and implementation of innovations aimed for preventing such kind of anthropological catastrophe. With the appropriate tools and information, young people are already playing an important role in implementing and monitoring the SDGs and driving action locally and globally. It seems that innovation and environmental issues are opposing and unrelated fields. However, as the study shows, it makes no sense to pit them against each other, because they are interrelated. Their tandem is confirmed by the achievements of the SDGs, which in itself is important in finding solutions to environmental, economic, and social problems. Today, it is time to adopt a broader view of innovation to achieve environmental security. Innovation means adopting a completely different mindset that, among other things, opens the mind and willingness to change the way we use water and land resources, how and from what we build, produce, and what we consume. In considering the results presented in this section, it is clear that the role of innovation in achieving the SDGs for youth is very important. Innovation contributes to the 17 SDGs as a whole, although the importance of the implementation of innovation in SDGs 6, 11, 12, 13, 14 and 15 is seen as very useful. Each SDG's content

may account for this uneven allocation of priorities. Different approaches can be used to analyze the SDGs, but the study examines the views of today's youth representatives on the focus of the SDGs on the development and implementation of innovations. This choice cannot be made without information on the problems we face today. The commitment of the SDGs through the individual selection of students contributes to the transformation in the field of modern innovation with a focus on the participation of innovative environmental projects, the work of scientists, private businesses, and corporations after receiving a university degree. The study shows that EI improves the standard of living with a focus on SD and should be integrated with other variables in a broader strategy. Further research is required to explain the impact of the environment on contemporary youth values in order to improve the quality of life. This first generation, fully formed in the 21st century, is already a part of the labor force and makes up a significant part of the global labor force. They are open-minded, digital-born, creative, competitive, independent, technologically confident and financially secure. These characteristics have become the basis of the choice of the study of the orientations of VOs and the environmental intelligence of the youth. How the world will look like 10 or 20 years from now, the way environmental technologies will be developed and implemented depends on youth VOs, what they believe in, strive to achieve and do. The study has a subdivision into EI and VOs of young people. These practices have different definitions and aspects of development. However, both show the prospect of avoiding the anthropological catastrophe with the destruction of humanity. When selecting articles on or related to the research topic, it can be seen that the extensive research and research methods that have been published in this area have different approaches. The most scientific research is of a cross-cutting nature with particular emphasis on: (1) the widespread introduction of innovation within the context of the environmental security of the socioeconomic sector (Kusumastuti *et al.* 2022); (2) innovative environmental projects, programs, etc. to enhance life sustainably (Gitelman *et al.*, 2016; Delucchi *et al*., 2022); (3) environmental intelligence of youth (Cynk, 2017); (4) urbanization change is essential to SDGs linked to the social and economic development of the region, the city and the nation (Ramirez-Rubio *et al*., 2019; Samari *et al*., 2021) etc. Related studies were also examined in the introduction, but by other researchers which were included in the reference list. It is safe to say that in the literature which have been reviewed on environmental issues, there is no clear reference to the youth VOs towards innovation in the achievement of the SDGs. More research should be done to ensure that today's global environmental issues are a process that changes VOs of youth that, in the future, will make the innovation process more probable, guaranteeing efficient solutions to problems in the SDGs achievement. The innovation process was correlated to 6 SDSs marked by students and reflected through the prism of EI and VOs of youth, considered as the major, while "other goals" have been noted in Table 1 but have not been studied thoroughly from the point of view of the research subject, for this reason it can also be continued in further research literature.

Use a simple system of differentiating priorities to reach 17 SDGs for economic, environmental and social sustainability, the study showed in the first part of the rating on the elaboration and implementation of 6 SDGs related to the sustainability of the environment (82.09%). In this list of SDGs, climate action is considered the most important issue. The remaining 17.91 % went towards economic and social sustainability. Almost one-third of respondents consider additional environmental knowledge to be significant, regardless of profession. The SDG2030 addresses economic, environmental and social issues. As the study shows, these three aspects are considered representatives of the students who participated in the survey, with a certain mark. However, of the 17 SDGs which address environmental issues, 6 were identified by respondents as the first to develop and implement innovations, which provides the perspective as youth participation in the development of innovations in the short term, as to innovate in every field of their activities. Youth will continue to have as before the opportunity to engage in the technological aspect of innovation and its implementation after receiving a university degree. Effective measures to achieve the SDGs, which everyone agrees on, are already under way in the new structure. In the case of multiple authorship, the study can be complemented by the results obtained in the context of other age and other

categories (race, sex, profession, etc.). The probability of continuing the study of EI and VOs of modern youth is determined by two factors: – changes on youth categories (new generations grow up and the transition of all youth representatives to the category over 25 years old); – changing VOs to develop and implement EI.

CONCLUSION

Understanding that economic, environmental and social sustainability is a global millennium goal demonstrates the research. Technological change is the follow-up to innovation in value systems. As EI and contemporary youth VOs in a sustainable way at the global level continue to emerge and are integrated into an entirely new structure, which, in terms of cognitive contact with reality provides an opportunity to get information on today's actual environmental situation, on condition that EI and young VOs towards innovation in the achievement of the SDGs. Nowadays, the relationship between innovation and SD is first and foremost an innovation of EI and VOs. Thinking "out of the box", – is one way we can innovate. The young generation of today, which, like previous generations at times, sometimes is in the spotlight. The way young people process, categorize and understand different types of information about the problem and the possibility of achieving sustainable development is an important part of the "innovation equation", the solution of which shows that today's youth differentiate the priority of the SDGs for the development and implementation of innovations for achieving global sustainability grounded in values and environmental intelligence, to implement the sustainable development goals. Based on changes in the environment, the relationship between man and nature, awareness of the importance of minimizing human impact on the environment, which shows EI and youth VOs towards innovation in achieving SDGs. The literature provides a thematic overview on the subject and related topics, 52 articles from international studies are presented, while conclusions are drawn from the results of a survey of university students, although from different disciplines (economic, engineering, linguistic), but still from one country and one author. This study contributes to raising awareness of the field of EI development and implementation to achieve the SDGs, VOs of youth in the 21st century, which contributes to the motivation to further advance knowledge on this topic. The study may be of interest to the academic community (philosophers, sociologists, psychologists) and to citizens who have no direct interest in science, but also for those who want to get a sense of the environmental issues and how they can be addressed here and now for themselves and future generations, anyone who cares about the stability of planet Earth.

AUTHOR CONTRIBUTIONS

Y.A. Petrova, performed the literature review, analyzed and interpreted the data, prepared the manuscript text, and manuscript edition.

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CONFLICT OF INTEREST

The author declares no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the author.

PUBLISHER'S NOTE

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ABBREVIATIONS

CO 2	Carbon Dioxide
EI	Eco-intelligence
IBM	International Business Machines
kg	Kilogram
lb	Pound
MAB	Man, and the Biosphere
SD	Sustainable Development
SDGs	Sustainable Development Goals
SDSN	Sustainable Development Solutions Network
UN	United Nations
VO	Value Orientations

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