

## SHAPING SUSTAINABLE DEVELOPMENT COMPETENCIES THROUGH STUDENT INTERNSHIPS

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**Purpose:** One of the most important challenges of civilization in the contemporary world is obtaining the goals of sustainable development. This challenge is addressed to present and future generations who have to possess or acquire various sustainable development competencies. Shaping them is particularly essential in the case of generation Z, thus it should take place both in the process of academic education, as well as in cooperation with university stakeholders. The aim of the paper is to answer the question of whether the implementation of students' internships enables shaping sustainable development competencies.

**Design/methodology/approach:** The survey was conducted in Poland in 2022 among 367 full-time students in the management field of study. The CAWI method was used. The paper presents a quantitative analysis of the obtained data. In the theoretical part of the article, the author explained the essence and goals of sustainable development, described sustainable development competencies, and the role of higher education and stakeholders in shaping the SD competencies of Generation Z.

**Findings:** Generation Z has a positive attitude towards the implementation of the concept of sustainable development and almost all of the studied sustainable development goals are of great importance to the respondents. The obtained results confirmed that the implementation of internships in a real work environment affects the shape of many SD competencies of students. The greatest opportunities for the development of SD competencies were provided to interns by business organisations and administration, while less importance was assigned to such stakeholders as NGOs. Students expect the cooperation of the university and its stakeholders in shaping their SD competencies.

**Research limitations/implications:** The size of the surveyed group does not allow for the formulation of general conclusions. However, the obtained results may be the basis for further in-depth studies on the problem. Similar research could be conducted to establish the opinion of employers and university representatives with a broader consideration of other variables.

**Practical implications:** The conclusions of the study will provide universities and various stakeholders with valuable information on the possibility of using student internships to develop SD competencies of representatives of Generation Z.

**Originality/value:** The obtained results allow one to fill the research gap concerning the assessment of whether the realization of student internships in a real work environment enables shaping students' competencies in the field of sustainable development.

**Keywords:** sustainable development, sustainable competencies, green competencies, education for sustainable development, internships, stakeholders, business students, Generation Z.

**Category of the paper:** Research paper.

## Introduction

In 2015, in New York, the leaders of UN member countries signed the document called “Transforming Our World: the 2030 Agenda for Sustainable Development”. In this way, they made an ambitious commitment to initiate to take steps to reduce poverty in all its forms, ensure access to education, food and clean water, take action for equal opportunities, promote human rights, peace and stability in the world, protect the environment, mitigate climate change, provide access to sustainable energy sources (UNa).

The 2030 Agenda defines 17 sustainable development goals (SDGs) and 169 actions related to them, which have to be achieved by governments, international organisations, non-governmental organisations, the science and business sector, as well as by citizens (UNc). They focus on 5 areas: people, planet, prosperity, peace, and partnership. They indicate what actions should be taken and what their results should be. A graphical presentation of the 17 SDGs is shown in Figure 1.



**Figure 1.** The Sustainable Development Goals (SDGs).

Source: (UNb).

The UN's 17 Sustainable Development Goals aim to guide countries towards a sustainable future and a more peaceful and inclusive society (Gupta, Vegelin, 2016; Lim et al., 2018). Achieving these goals is possible by including sustainable development (SD) in education at all levels, in particular training teachers and trainers in sustainability issues, and how to integrate them into their daily practice, ensuring that updated and new curricula take economic, social, and environmental dimensions of sustainable development, and making education for SD an integral part of the training of leaders in business, industry, trade union, non-profit and voluntary organisations, and the public service (UNESCO, 2013).

Representatives of Generation Z will play a key role in achieving SD goals. In the literature, it is assumed that Generation Z is the cohort group born after 1995 (Lut, 2020). Generation Z is currently at the stage of completing education as students and beginning professional careers becoming of interest to the employment market (Goh, Lee, 2018).

The academic education of this generation is currently often based on curricula including the subject of sustainable development, but the implementation of these programs is mainly theoretical. It is important to look for opportunities to develop SD competencies not only in the formal education system but also in a practical way, as real-world learning (Brundiars et al., 2010), for example through students' participation in internships organized by universities (Rios et al., 2018; Lopes et al., 2019). Undertaking cooperation between various stakeholders (UN, 2020; Cavicchi, 2021), including especially collaboration between universities and employers, can significantly support the development of a range of SD competencies of generation Z representatives (Oonk et al., 2022).

On the basis of the review of the literature on the subject, it can be stated that numerous studies are being conducted concerning education in the field of sustainable development. Many authors focus on education programs (Trencher et al., 2018; Obrecht et al., 2022; Pubule et al., 2019; Wiek et al., 2016) or the necessity to adapt them to the requirements published in various official documents, e.g. UNESCO, UN, Agenda 2030, etc. (Leal et al., 2019; Owens, 2017; Annan-Diab, Molinari, 2017).

Other studies refer to the analysis of competencies acquired during the formal education process in educational institutions (Scharenberg et al., 2021), in particular in higher education institutions (Remington-Doucette, Musgrove, 2015; Hay, Eagle, 2020; Alm et al., 2022), and also concern learning methods (Figueiro et al. 2022) and assessment of the effects of education concerning sustainability competencies (Cebrián et al., 2019; Sandri et al., 2018). The results of research discussing SD competencies are also interesting from the teachers' point of view (Cebrián, Junyent, 2015; Rieckmann, Barth, 2022; Scherak, Rieckmann, 2020; Corres et al., 2020; Poza-Vilches et al., 2019).

Some authors present research results that take into account the characteristics of respondents, such as age (Remington-Doucette, Musgrove, 2015; Orobia et al., 2020), gender (Remington-Doucette, Musgrove, 2015; Finnveden et al., 2019), job position (Cavicchi, 2021), field of study (Remington-Doucette, Musgrove, 2015; Hay, Eagle, 2020). However,

the literature on shaping sustainable competencies within the field of management and business education is not very extensive. Interesting results were obtained by Ziegler and Porto-de-Oliveira (2022), who described a backcasting approach to education for sustainable development in management based on group-based, service-learning. A bibliometric review of current trends and research needs in the area of educating business students about sustainability was developed by Cullen (2017). Research concerning the education of students in SD in the field of management was also conducted by Corazza et al. (2022), and Figueiro et al. (2022). However, this research was more concerned with the education of students in a formalized way within academic education. On the other hand, the issue of developing students' competencies in the field of SD in a real work environment is relatively rarely analysed (Brundiens et al., 2010), in cooperation with various stakeholders (Cavicchi, 2021).

A research gap has been identified in this area, indicating the lack of sufficient research on the opinions of management students on the development of their SD competencies in a real work environment, as a result of the involvement of employers as stakeholders of higher education institutions who enable students to carry out their internships.

The aim of the article is to assess the possibility of using student internships to shape students' competencies in the field of sustainable development. Bridging the identified research gap made it possible to formulate the following research question: does the implementation of student internships in a real work environment enable shaping of students' competencies in the field of sustainable development?

In this article, the author first concentrates on the literature review concerning three main areas: the essence and goals of sustainable development, sustainable development competencies, and the role of higher education and stakeholders in shaping the SD competencies of Generation Z. Then, the description of the methodology, and the description of the research sample are given. Afterwards, the data are analysed, and the results are discussed. Finally, the conclusions and limitations of this study are provided.

## **The essence and goals of sustainable development**

Technological, structural, and demographic changes in an increasingly interconnected world mean that the nature of work is also changing. In accordance with the EU model of social well-being, no person or place should be left behind in the transition to a sustainable economy. Social investment must remain an overriding priority, including in such areas as education, training, lifelong learning, and working conditions. These are the key factors enabling changes towards a sustainable Europe by 2030 (European Commission).

One of the first and most frequently quoted definitions of sustainable development was published in 1987 by the Brundtland Commission in the report called *Our Common Future*, in which sustainable development means “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987, p. 43). Over the years, this definition is still used (UNb), although various authors include additional aspects in it. For example, Aleixo et al. (2018) define sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs, through transdisciplinary practices and the development of key competencies in education promoted by new ICTs to create collaborative business models".

SD has become the overriding priority of all strategic activities for many countries. Incorporating this concept into the mission and vision has been recognized as a key issue for economic development. Currently, sustainable development is perceived as making efforts to balance the environment, social and economic system based on the assumption that organisations exist in an ecosystem, not in isolation (Orobia et al., 2020). In 2015, these three areas became the foundation for the UN 2030 Agenda for Sustainable Development strategy to achieve the Sustainable Development Goals.

As mentioned, the 2030 Agenda contains 17 SDGs which form the basis of all SDG – related activities and research, and their full wording makes it possible to clarify their meaning and significance (UNd).

Goal 1. End poverty in all its forms everywhere.

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

Goal 3. Ensure healthy lives and promote well-being for all at all ages.

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Goal 5. Achieve gender equality and empower all women and girls.

Goal 6. Ensure availability and sustainable management of water and sanitation for all.

Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all.

Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

Goal 10. Reduce inequality within and among countries.

Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable.

Goal 12. Ensure sustainable consumption and production patterns.

Goal 13. Take urgent action to combat climate change and its impacts;

Goal 14. Conserve and sustainably use the oceans, sea, and marine resources for sustainable development.

Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Achieving these goals is only possible by reducing poverty, hunger, the gender gap, and inequalities and increasing the sustainable management of resources and awareness about climate change (Reckien et al., 2017).

The Agenda 2030 is addressed not only to governments and parliaments, international institutions, local authorities, and residents but also to businesses and the private sector (Stiglitz, 2019). The provisions of the Agenda refer directly to businesses: “We acknowledge the role of the diverse private sector, ranging from micro- enterprises to cooperatives to multinationals. We call upon all businesses to apply their creativity and innovation to solving sustainable development challenges” (point 67 of the Agenda) (Pizzi et al., 2020).

Sustainable development goals are therefore becoming important in the activities of modern enterprises. As a result, they incorporate universal values and principles relating to human rights, labour, the environment, and anti-corruption into their strategies and activities. Business is a force that can do good in social life. Advocating sustainable development, businesses in the era of Industry 4.0 can and should take responsibility for their actions and their impact on the environment and society, and also contribute to building a better world (Imran et al., 2019).

In order to ensure the sustainable development of enterprises, managers must be aware of the potential consequences of their decisions to use their resources and make wise choices in implementing business strategies and activities that help the organisation achieve better results (Karkouljian et al., 2016). What is more, sustainable development must include the ability of the company to stay in business for a long time while achieving excellent financial performance and administrative systems that increase employee productivity and company profits (Orobia et al., 2020). However, the sustainable development of a company is not possible without the development of SD competencies of employees.

## **Sustainable development competencies**

Wiek et al. define sustainability competencies as “a functionally linked complex of knowledge, skills, and attitudes that enable successful task performance and problem-solving with respect to real-world sustainability problems, challenges, and opportunities” (Wiek et al., 2011, p. 204). According to Cebrián and Junyent (2015), the term sustainability competencies

is the combination of cognitive skills, practical abilities, and ethical values and attitudes mobilised in a real situation or context related to sustainability.

Reviewing the literature on the subject shows that there are many definitions and classifications of competencies related to sustainable development. Over the last few years, there has been a rapid increase in the number of publications regarding the assessment of sustainability competencies (Cebrián et al., 2019). An extensive analysis of the types of competencies and their classification was made by Corres et al. (2020). One of the most often discussed classifications was presented in a document developed by UNESCO (2017) and contains the following 8 key competencies: systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, integrated problem-solving competency (UNESCO 2017). A detailed description of their meaning is presented in Table 1.

**Table 1.**  
*Sustainability competencies*

Competencies	Description
Systems thinking competency	The abilities to recognize and understand relationships; to analyse complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty.
Anticipatory competency	The abilities to understand and evaluate multiple futures – possible, probable, and desirable; to create one's own visions for the future; to apply the precautionary principle; to assess the consequences of actions; and to deal with risks and changes.
Normative competency	The abilities to understand and reflect on the norms and values that underlie one's actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions.
Strategic competency	The ability to collectively develop and implement innovative actions that further sustainability at the local level and further afield.
Collaboration competency	The abilities to learn from others; to understand and respect the needs, perspectives, and actions of others (empathy); to understand, relate to and be sensitive to others (empathic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem-solving.
Critical thinking competency	The abilities to question norms, practices, and opinions; to reflect on one's own values, perceptions, and actions; and to take a position in the sustainability discourse.
Self-awareness competency	The abilities to reflect on one's own role in the local community and (global) society; to continually evaluate and further motivate one's actions; and to deal with one's feelings and desires.
Integrated problem-solving competency	The overarching abilities to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive, and equitable solution options that promote sustainable development, integrating the abovementioned competencies.

Source: (UNESCO, 2017, p. 10).

This classification became the starting point for many authors dealing with the subject of SD competencies. For example, Rios et al. (2018) adapted these competencies for practical application at the University of Calgary. The authors studied such competencies as anticipatory thinking and long-term foresightedness; empathy and understanding of different worldviews and relationships; capacities for stakeholder engagement and group collaboration; action-oriented leadership skills and change agency skills; critical thinking and decision-making capacity within complexity; and systems thinking and an understanding of connectedness.

Based on their extensive literature survey and analysis of competencies, Lozano et al. (2017) identified the following set of 12 SD competencies: system thinking, interdisciplinary work, anticipatory thinking, justice, responsibility and ethics, critical thinking and analysis, interpersonal relations and collaboration, empathy and a change of perspective, communication and use of media, strategic action, personal involvement, assessment and evaluation, and tolerance of ambiguity and uncertainty.

One of the oldest classifications of competencies in the range of SD, which is very often described in the scientific literature and used in empirical research, was developed by de Haan (2010). The author distinguishes 12 competencies which have been divided into 3 groups:

1. Interactive use of media and methods:
  - Competence to take on new perspectives: the ability to build up knowledge with an open mind and new attitudes.
  - Competence in anticipation: the ability to analyse and assess developments with foresight.
  - Competence in interdisciplinary knowledge acquisition: gaining knowledge and being able to act at an interdisciplinary level.
  - Competence in dealing with incomplete and overly complex information: recognising and weighing up risks, dangers, and uncertainties.
2. Interaction in heterogeneous groups:
  - Competence in cooperation: the ability to plan and work together with others.
  - Competence to cope with difficult individual decisions: the ability to consider conflicting goals when reflecting on strategies for action.
  - Competence in participation: the ability to participate in collective decision-making and development processes.
  - Competence in motivation: the ability to motivate oneself and others to become active.
3. Acting autonomously:
  - Competence to reflect on models: the ability to reflect on one's own models and those of others.
  - Competence in moral action: the ability to use ideas of justice as a basis for decision-making and action.
  - Competence to act independently: the ability to plan and act independently.
  - Competence to support others: the ability to show empathy for others.

Cebrián and Junyent (2015) developed a theoretical framework of the professional SD competencies and elaborated 8 key components:

- Future/alternative scenarios visioning: understanding the different scenarios, possible futures, promoting work with different visions and scenarios for alternative and future changes.



- Contextualizing: taking into account the different dimensions of a problem or action, the spatial dimension (local-global) and the temporal dimension (past, present, and future).
- Work and live with complexity: the ability to identify and connect the ecological, economic, and social dimensions of problems. Generate the conditions for systems thinking in the school environment.
- Think critically: creating the conditions for critical thinking to question assumptions and to recognize and respect different trends and views in different situations.
- Decision-making, participation and acting for change: moving from awareness to action; sharing responsibilities and engaging in joint action.
- Clarify values: values clarification and strengthening behaviour towards sustainability thinking, mutual respect, and understanding of other values.
- Establish a dialogue between disciplines: developing teaching and learning approaches based on innovation and interdisciplinarity.
- Manage emotions and concerns: promoting reflection on one's own emotions and as a means to reach a deeper understanding of problems and situations.

The above examples present general classifications of SD competencies, while other divisions, specific to particular situations, can also be found in the literature. For example, Cavicchi (2021), based on the literature (Salgado et al., 2018), formulated six work experiences to assess the development of SD competencies during student internships:

- part in interdisciplinary projects requiring the integration of different approaches derived from the natural and social sciences,
- develop an awareness of the different perspectives of the stakeholders involved in SD projects,
- identify problems related to the management of SD issues,
- propose solutions to SD problems, owing to their development of networking abilities with institutional and entrepreneurial organisations,
- improve their understanding of SD policies promoted at the institutional level, as well as of the possible impact of these policies and the scenarios they generate in the local context,
- combine their personal and professional development with active citizenship favoring SD.

When discussing the subject of SD competencies, the issue of green competencies cannot be omitted (Bianchi et al., 2022). In recent years, there was considerable interest in green competencies, as reflected in the surge of articles published in this field. According to Cabral and Dhar (2021), green competencies are a multidimensional construct comprised of green knowledge, green skills, green abilities, green attitudes, green behaviours, and green awareness.

According to Zhao et al. (2014), environmental knowledge, attitudes and values of individuals are major factors that influence shaping green competencies. Green competencies are the green knowledge and skills that an individual has accumulated through previous experiences on environmental issues that lead to an individual's strong conviction and feeling towards acting in an environmentally friendly manner (Subramanian et al., 2015).

Green competencies are a set of sustainability competencies to feed into education programmes to help learners develop knowledge, skills, and attitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and public health. Green competencies comprises four interrelated competence areas: embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures, and acting for sustainability. Each area comprises three competencies that are interlinked and equally important (Bianchi et al., 2022).

A slightly different approach to SD competencies was presented by Akkerman and Bakker (2011). According to the authors, one of the important principles of taking action in the context of sustainable development is developing competencies in the field of crossing borders. This means the necessity of having the ability to seek, recognize, appreciate, and use different boundaries to learn, co-create and introduce innovations together through practices. The first learning mechanism, i.e. identification, involves questioning one's own and others' core identities and exploring the mutual complementarity of different practices. Identification leads to insights into what the diverse practices concern but does not necessarily lead to actual collaboration. The second learning mechanism, i.e. coordination, expresses what people can learn from seeking communicative connections between diverse practices or perspectives, for example, by contacting each other to exchange relevant information or by using languages from different practices. The third mechanism, i.e. reflection, includes making and taking perspectives. People come "to realize and explicate differences between practices and thus to learn something new about their own and others' practices. The fourth learning mechanism, i.e. transformation, involves joint work at the boundaries between practices, combining ingredients from different practices into a new (i.e. hybrid) practice. According to Akkerman and Bakker (2011), boundary crossing learning is supposed to develop when these four learning mechanisms are adopted while learning across practices.

Summarizing the above considerations, it should be emphasized that there are many different classifications of SD competencies. However, a more important issue is how these competencies will be developed by current and future employees, in what circumstances they will be acquired and shaped, and who will be responsible for this process. A major role in the transition to a sustainable knowledge society should play higher education institutions (HEIs) (O'Riordan et al., 2020).

## **The role of higher education in shaping the SD competencies of generation Z**

With the release of the 17 Sustainable Development Goals (SDGs, Resolution 2015), the role of education has been strengthened. SDG number 4 is about education, and its target 4.7 is designed explicitly to promote education for sustainable development.

After the establishment of the 17 SDGs, the UN launched a special appeal to higher education institutions to actively promote the SDGs in education and research (Annan-Diab, Molinari, 2017; Utama et al., 2018). Higher education institutions hold key responsibility for education including sustainable development (Mora et al., 2020). They should take a leadership role in implementing this transformation, preparing students to play an active role to support the transition process towards a sustainable society (Lambrechts, Hindson, 2016). Education for sustainable development is an integral part of quality education, where all educational institutions, and in non-formal and informal education, can and should foster the development of sustainability competencies (Cebrián et al., 2021).

Education can catalyze and/or accelerate social changes towards sustainable development. Educational institutions should offer curricula that support sustainable development attainments in knowledge, skills and attitudes, and ensure partnerships with stakeholders in business and community (UNESCO, 2014). Academic curricula should enable the development of key competencies in the field of sustainable development, including problem-solving skills and effective cooperation with experts and stakeholders (Brundiars et al., 2010).

A holistic vision of sustainable development establishes links between students, higher education institutions, and society (Aleixo et al., 2018). Universities are expected to act as “agents of change” (Korfgen et al., 2018), promoting the ideals of the SDGs through problem-oriented research and coherent educational programs. Universities must support a change in behaviour related to SD goals among students, scientists, researchers, and external stakeholders by undertaking various activities (Caeiro et al., 2020; Findler et al., 2019; Finnveden et al., 2019; Leal et al., 2019).

In recent years, SDGs have impacted HEIs’ traditional curricula (Sanchez-Carracedo et al., 2021). According to the contents of the UNESCO report from 2014, changing the curricula requires the cooperation of various groups and institutions (UNESCO, 2014). The following actions are therefore necessary:

- taking collaboration across government, business communities, and educational institutions to identify the required skills and competencies,
- building stronger linkages between business and education systems, and the identification opportunities for apprenticeships and internships,
- collaboration across government and industry to work together on new standards and to work with education institutions to determine the skills needed to meet those standards,
- collaboration across the industry with institutions and learners in applied projects, internships, and other means for skills transfer and development.

Sustainable development requires a paradigm shift in education, which should be characterized by interactive learning in participatory environments (Holgaard et al., 2016). The competency development of SD should be conducted in such a way as to provide students with a learning environment from many different stakeholders (Oonk et al., 2022). This is especially important in the case of higher education because graduates will be working with many stakeholders in the future during their work on complex challenges within sustainable development (Schopp et al., 2020).

It should be noted that stakeholders' collaboration with universities in the field of education rarely regards activities in the real work environment. Most often it is only an exchange of information, e.g. consulting study programs or organizing seminars for students and teachers in the field of SD (Sisto et al., 2020). Academic education should bridge the gaps between theory and practice, thereby promoting more practical activities and projects in the sustainability curricula through greater dialogue with stakeholders. The possibility to involve different stakeholders can be an occasion to see what they really do in practice and show their experiences in terms of sustainability (Cavicchi, 2021). The activities of various stakeholders may influence the growth of SD competencies of representatives of generation Z. This is particularly important because representatives of this generation are currently students and will soon take up professional activity (Yamane, Kaneko, 2021).

Orobia et al. (2020) conducted research on engagement in sustainable development among youth, analysing the following aspects: economic (strategy, finance, marketing, and innovation), social (people and skills, social responsibility and stakeholders), and environmental (ecosystem, production and resource management). The authors identified a gap existing in the education system, pointing to the need for more practical education in the field of sustainable development. Also, students think it is necessary to learn by doing as a way of approaching sustainability in practical terms (Dziubaniuk, Nyholm, 2020).

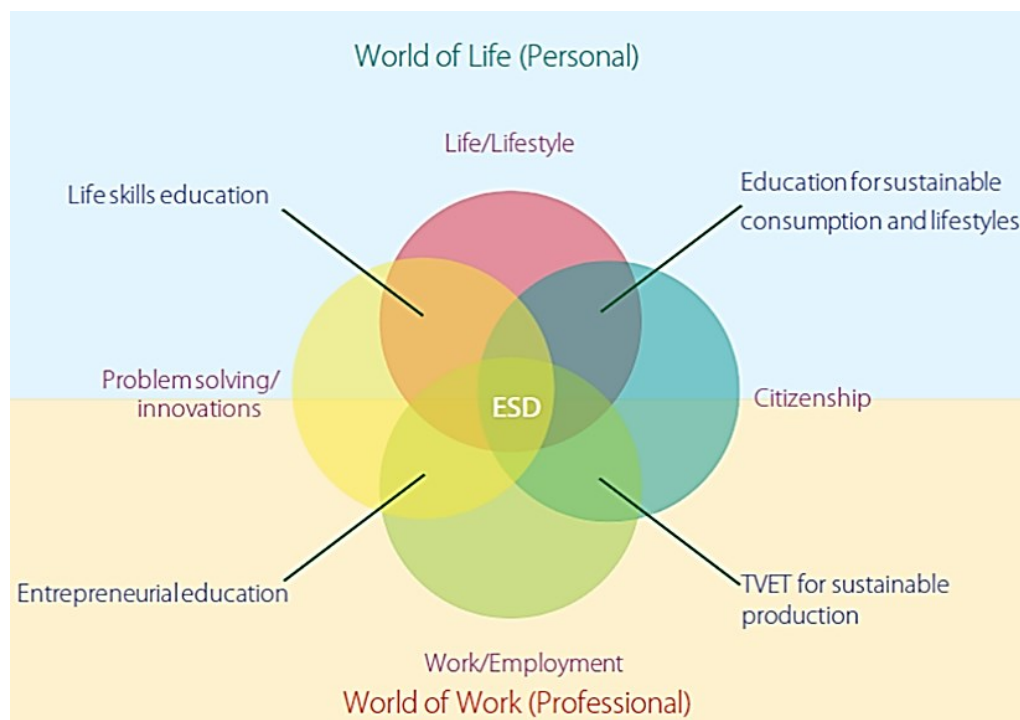
Generation Z members are aware of various environmental, social, and economic challenges emerging in the modern world and feel co-responsible for solving them (Turner, 2015). Generation Z is sometimes referred to as the "green generation" because they have a high environmental awareness and try to consider the good of the environment in their consumption (Wawer et al., 2022). The most important environmental issues for them concern climate change (global warming), renewable energy (reducing oil dependency), stopping pollution (reducing emissions, eliminating pesticides), recycling and reducing waste, protecting wildlife, and optimising the use of resources (Wang et al., 2022). They are also ready to take part in the responsibility for the planet's condition themselves because they believe in intergenerational justice. They want to provide future generations with the earth in a state at least no worse than it is now (Oliveira, 2018). Developing an environmentally friendly approach in society is one of the main goals of sustainable development-oriented education (Tariq, 2020).

## The role of stakeholders in the shaping of SD competencies through student internships

According to Freeman, the stakeholder means “any group or individual who can affect or is affected by the achievement of the organisation’s objectives” (Freeman, 1984, p. 46). The main stakeholders include non-governmental organisations, local authorities, workers and trade unions, businesses and industry, the scientific and technological community, and farmers. Other relevant stakeholders are also invited to participate in UN processes related to sustainable development. These are for example local communities, educational and academic entities, foundations, and private philanthropic organisations (UN, 2020).

The stakeholders may be sustainability professionals from different organisations with different areas of expertise. They may also be professionals from different sectors, politicians in national or local government, activists, and users of environmental services as businesses or members of the public (Salgado et al. 2018).

First of all, higher education institutions are involved in the education of students, however, shaping attitudes and behaviours in the field of SD should take place not only in the formal education system, but also in the informal one, i.e. in everyday activities such as work, home, and leisure; and various types of training (UNESCO, 2014). Succeeding in education for SD means therefore the need to take into account two key areas, i.e. the world of life (Personal) and the world of work (Professional) (UNESCO, 2013). The key aspects of the links between these two areas are presented in Figure 2.



**Figure 2.** Key aspect of successful education for sustainable development.

Source: (UNESCO, 2013).

In SD education in the world of work, it is important to enable students to acquire skills appropriate to work for a desired employer or demonstrate entrepreneurial competence to start and run their own company in accordance with SD principles (Hermann, Bossle, 2020). It is these competencies that have a positive and significant impact on the owners and managers undertaking innovative activities in the field of sustainable development of small and medium enterprises (Denac et al., 2018; Ismail, 2022). This is possible, among others, thanks to real-world learning, which allows one to gain practical experience in combining knowledge with activities for sustainable development (Pretorius et al., 2021). Real-world learning opportunities allow students to recognize and engage in different forms of collaboration at different degrees of intensity. Linking knowledge to action requires students and their collaborating partners to ask critical questions – what works, what does not, why, and give constructive feedback – how could it work and why (Brundiens et al., 2010).

Being part of a stakeholder professional environment allows students to become familiar with different values and processes of reasoning and decision-making. Students begin to understand various institutional contexts within which a sustainability problem exists and how far this context influences which solution strategies are proposed and pursued by experts or stakeholders. According to Brundiens et al., (2010) dominant real-world learning models are project- and problem-based learning, service learning, and internships in communities, businesses, and governments. An overview of key differences between project-based learning, service learning, and internship has been presented in Table 2.

**Table 2.**

*Overview of key differences among three dominant models of real-world learning formats*

Area of comparison	Project-based learning	Service learning	Internship
Outcomes: what students learn/benefit	Collaborative problem-solving capacity	Education and teaching capacity	Professional working experience; career development
Practices: what students do	Collaborating with partners to develop a solution approach	Educating people	Assisting or working on a professional project
Interaction with stakeholder	Two-way knowledge generation (co-production)	One-way knowledge transfer (students to community)	One-way knowledge transfer (employer to student and student to employer)
Integration of theory and practice	Explicit, supervised by faculty and stakeholder	Implicit, not supervised by faculty	Implicit, not supervised by faculty
Impacts on world	Systemic innovation	Support of social innovation and change	Modular innovation

Source: (Brundiens et al., 2010).

One of the valuable forms of practical learning is a student internship. Three basic benefits resulting from using internships in the process of educating students are as follows (Lopes et al., 2019):

- internships allow students to apply the theoretical knowledge they explored during classes in real working contexts,
- internships allow students to develop a range of personal, performative and organisational skills that go beyond the more traditional academic, theoretical knowledge and skills,
- internship experiences may reduce the emotional shock reported by many students when facing the job market for the first time since they have the opportunity to establish early contact with employers and co-workers.

The places where internships are carried out are various organisations - both business and non-profit ones. It is real-world learning implemented through internships in a real work environment, e.g. in enterprises, government, non-governmental organisations (NGOs), and research institutions, that can contribute to the greatest extent to the development of students' competencies in the field of SD (López López et al., 2019). Small- and medium-sized enterprises and non-profit organisations play a special role in the development of these competencies through internships (Rios et al., 2018). Thanks to internships, students are better prepared for professional activity (Gault et al., 2010), and their chances of finding employment faster increase (Clemente et al., 2020).

Research carried out by Oonk et al. (2019) indicates, however, that students during internships do not engage in sufficient cooperation with stakeholders and are not particularly willing to build relationships with them. Moreover, the students did neither show more competencies development as a result of working in this real and multi-stakeholder environment. Conducting considerations regarding the development of competencies in the field of SD is especially important in the case of representatives of the Z generation, who will soon take up professional activity and will decide on the implementation of SD goals in enterprises.

Concluding the above theoretical considerations, it should be emphasized that shaping competencies in the field of SD through practical education in the form of an internship is particularly important for students studying business courses – future managers, leaders, and business owners. It is them who will manage companies and human teams in the future and should do it in a sustainable and socially responsible manner (Cullen, 2017; Hay, Eagle, 2020). The future of the next generations may depend on their approach to the implementation of the SD goals set out in the 2030 Agenda.

## Methodology

The aim of the conducted empirical research was to assess the use of student internships as a form of practical education of generation Z to shape competencies in the field of sustainable development. The main research question is as follows: does the implementation of the internship in a real work environment enable shaping students' competencies in the field of sustainable development?

Two detailed research questions have been formulated in the study:

Q1. What knowledge in the field of sustainable development do management students have and how important are the SD goals listed in Agenda 2030 according to them?

Q2. Does the implementation of internships in a real work environment enable shaping students' competencies in the area of sustainable development?

To achieve the research goal, the author developed a questionnaire consisting of 7 closed-ended questions. Three of them concerned question Q1, next four ones – question Q2. The author designed the questionnaire based on the literature analysis mentioned above, in particular UN d; UNESCO, 2017; Oliveira, 2018; Wiek et al., 2011; Cavicchi, 2021; Salgado et al., 2018.

The 5-point Likert scale has been applied to the questionnaire. Answers have been given on the scale: definitely yes, somewhat yes, neither yes nor no, somewhat no, definitely no, and also: very good, good, average, low, none (or: very important, important, moderately important, not important, not at all important), and also: very often, often, sometimes, rarely, never. The section with detailed information about respondents contained questions about the level of study, gender, and type of organisation, in which the internship was carried out.

From October to November 2022, emails with a link to the online questionnaire were sent to students of universities located in Poland. The data were collected using Computer-Assisted Web Interviewing (CAWI). For analysis, 367 questionnaires have been accepted. The survey was conducted among students of bachelor's (63%) and master's studies (27%), only in one field of study, i.e. management (100%). 62% of them were women and 38% were men. Respondents completed internships in the private sector (business) (59%), public administrations (23%), and non-governmental organisations (18%).

## Results

The purpose of the first question of the questionnaire was to obtain information if they had gained knowledge about SD during university studies. *Definitely yes* answered 57% of people, *rather yes* 27%, and the rest of the respondents had no opinion. This result indicates that the



vast majority of management students acquired knowledge about SD during formal academic education. Such a result allows one to state not only that universities implement educational goals in the area of SD well in this group of students, but also that students possess SD knowledge and can competently answer the next questions included in the questionnaire.

The second question concerned the scope of the level of knowledge held by respondents in five areas related to SD, i.e. 17 SD Goals, Agenda 2030, carbon footprint, circular economy, and green competencies. The results are presented in Table 3.

**Table 3.**

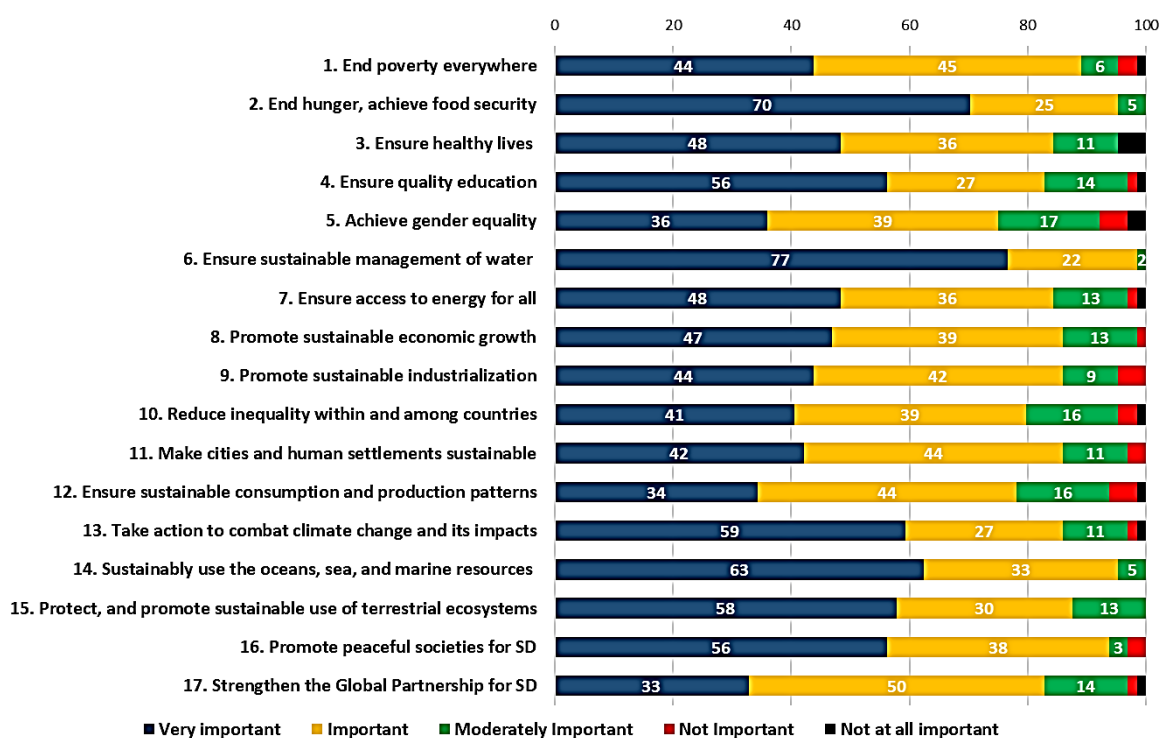
*The level of knowledge concerning SD (%)*

Issue	Very good	Good	Average	Low	None
17 SD Goals	7	32	42	14	5
Agenda 2030	8	11	46	26	9
Carbon footprint	6	39	33	16	6
Circular economy	12	19	44	16	9
Green competencies	10	42	31	13	4

Source: Own elaboration.

The obtained results indicate that the largest number of students have a *very good* and *good* level of knowledge of green competencies (52%), carbon footprint (45%) and 17 SDGs (39%), while the smallest group of people (19%) knows the 2030 Agenda.

The third question in this block of the questionnaire was crucial for obtaining an answer to the first research question and concerned the assessment of the importance of 17 SDGs for the respondents. The detailed distribution of responses is presented in Figure 3.



**Figure 3.** The assessment of the importance of 17 SDGs in the respondents' opinion (%).

Source: Own elaboration.

The analysis of the obtained results shows that the most important SD goals, according to the largest group of respondents, are: sustainable management of water (77%), ending hunger, achieving food security (70%), sustainably using the oceans, sea, and marine resources (63%), take action to combat climate change and its impacts (59%), protect, and promote sustainable use of terrestrial ecosystems (58%), promote peaceful societies for SD (56%), and ensure quality education (56%). It is worth noting that most of these goals concern environmental protection, which may indicate that Generation Z is aware of environmental threats in the world and is rightly referred to as the "green generation". Among the goals which, in the respondents' opinion, are not so important were: achieving gender equality (36%), ensuring sustainable consumption and production patterns (34%), and strengthening the global partnership for SD (33%).

It should be emphasized that almost all of the mentioned SDGs are of great importance to the respondents (when analysing both *very important* and *important* answers). This fact confirms their positive attitude towards the implementation of the concept of sustainable development.

The preparation of second part of the questionnaire was aimed at finding an answer to the question of whether the implementation of internships in a real work environment enables shaping students' competencies in the area of sustainable development, and if so, to what extent.

The first question in this block concerned the assessment of the approach of people representing the organisation (superiors, mentors, employees) to the development of SD competencies of interns. The analysis of their involvement in this area regarded the frequency of conversations with interns about the essence and goals of SD. The distribution of the responses received is presented in Table 4.

**Table 4.**

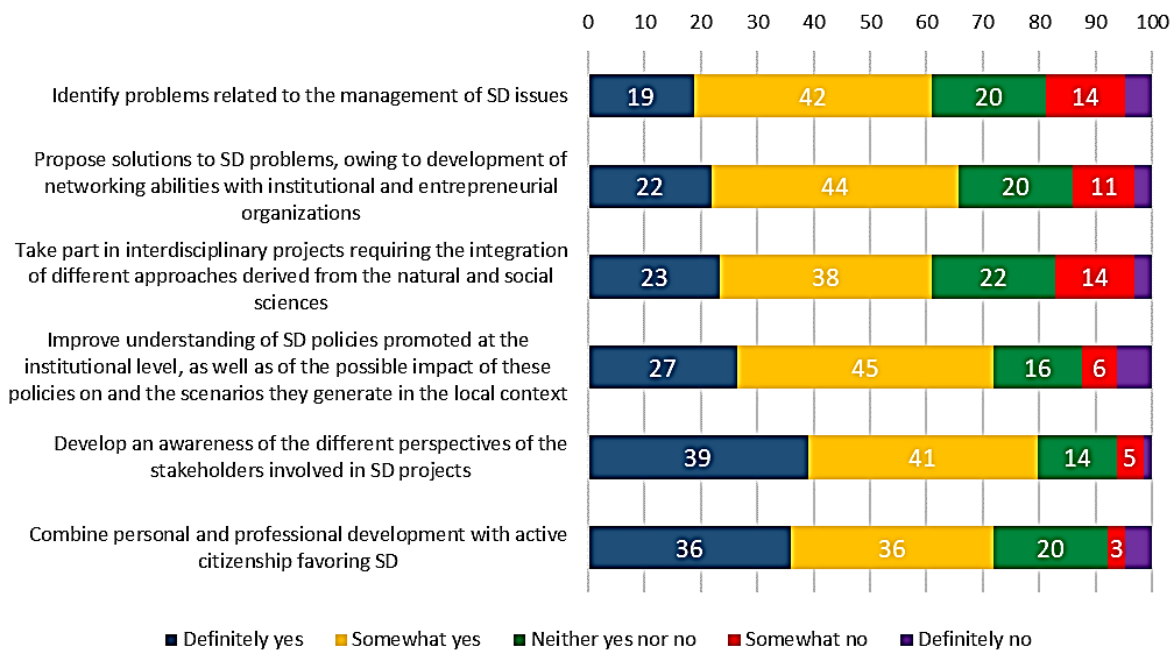
*Conducting conversations about SD by persons representing the organisation (%)*

	<b>Very often</b>	<b>Often</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>
Conversations between a superior or mentor with the interns	3	33	39	13	12
Conversations between employees and the interns	5	34	40	11	9

Source: Own elaboration.

The above results indicate that 36% of respondents confirm that they talked about the subject of SD *very often* or *often* with their supervisor or mentor, as well as with other employees (39%). However, in both cases, more than 60% of people in total marked the answers as *sometimes*, *rarely*, and *never*. This is a very unsatisfactory result and is an important area requiring the introduction of changes in the implementation of internships in organisations in the future.

Another important question in the questionnaire concerned the assessment of whether significant activities related to SD were carried out by students during the internship in the organisation. The distribution of answers is presented in Figure 4.

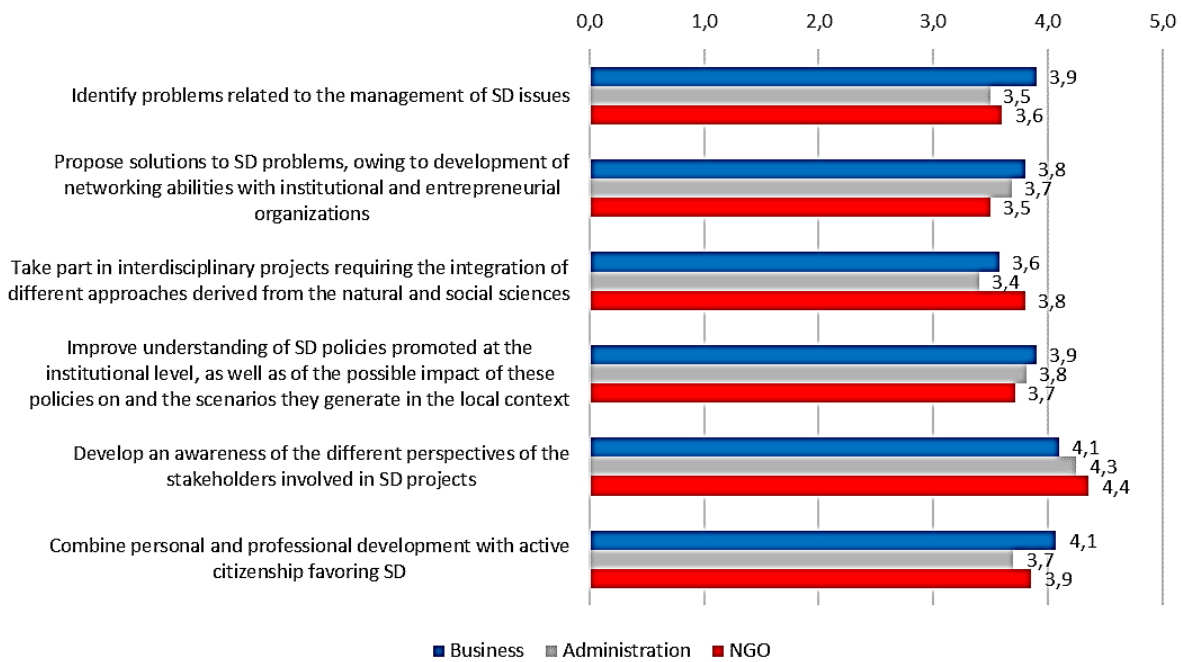


**Figure 4.** Activities related to SD undertaken by respondents during their internship (%).

Source: Own elaboration.

The analysis of the distribution of answers allows us to state that during the internship the respondents had the greatest opportunity to develop an awareness of the different perspectives of the stakeholders involved in SD projects (80%), and to combine personal and professional development with active citizenship favoring SD (72%). However, the following skills were developed to the least degree: identifying problems related to the management of SD issues (61%), proposing solutions to SD problems, owing to the development of networking abilities with institutional and entrepreneurial organisations (66%), and taking part in interdisciplinary projects requiring the integration of different approaches (61%).

In order to deepen the analysis of the obtained results, the answers given by the respondents were compared, taking into account the type of organisation in which the internship was carried out, i.e. business, administration, and NGO. It was important to obtain information on whether the type of organisation, as a type of stakeholder, is related to the assessment of the level of development of interns' SD competencies. Figure 5 presents the calculated average response values on the scale of 1-5, where 1 means *definitely no* and 5 means *definitely yes*.

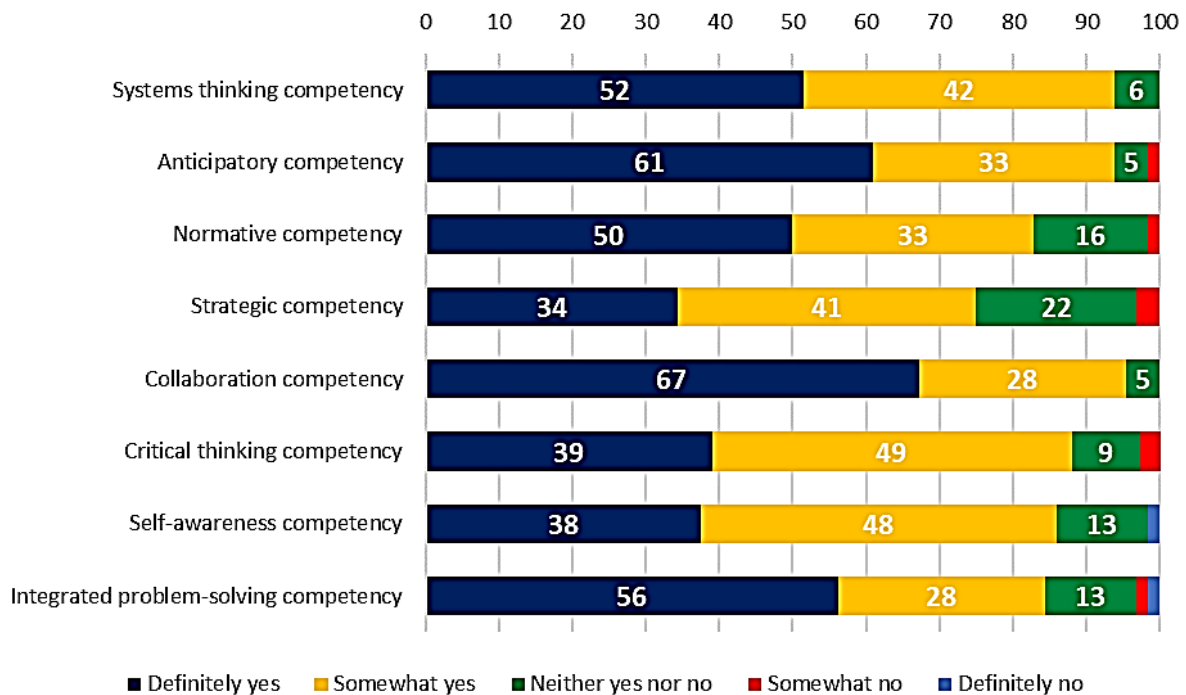


**Figure 5.** Activities related to SD competencies, undertaken by respondents during internship according to the type of stakeholder (average values on the scale of 1-5).

Source: Own elaboration.

The obtained results show that the greatest opportunities for the development of SD competencies were provided by business organisations to interns (general average value is 3.9). Slightly worse results in this aspect were achieved by non-governmental organisations (general average value is 3.8). Students completing internships in administration received the least benefit (3.7), however, all of these results are on a very similar level.

The next question in the questionnaire concerned the assessment of shaping eight key SD competencies through the internship. They were described in UNESCO (2017) documents and many scientific papers. These are the following ones: systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, and integrated problem-solving competency. The distribution of respondents' answers is presented in Figure 6.

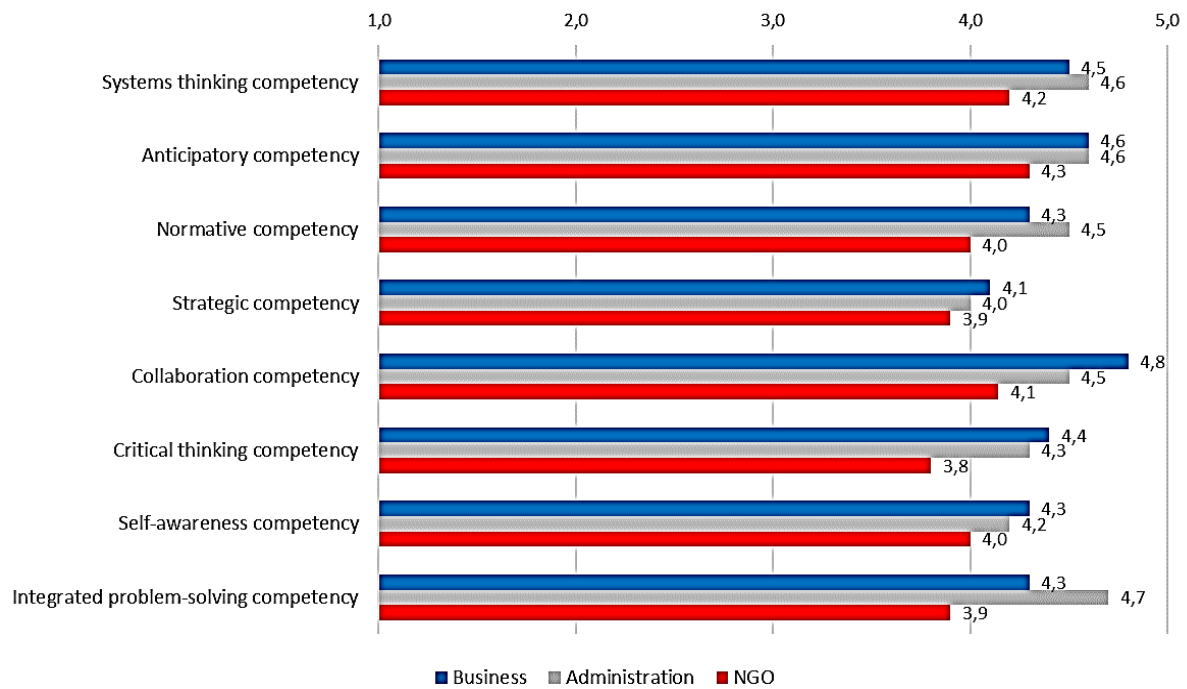


**Figure 6.** Shaping key SD competencies as the result of an internship (%).

Source: Own elaboration.

The analysis of the distribution of answers shows that during the internship, management students developed the most SD competencies such as collaboration competency (67%), anticipatory competency (61%), integrated problem-solving competency (56%), systems thinking competency (52%), and normative competency (50%). The development of strategic competency, thanks to internship, was confirmed by the smallest number of people (34%). In addition, less than 40% of the respondents indicated critical thinking competency (39%) and self-awareness competency (38%). However, when analysing the *definitely yes* and *somewhat yes* answers together, it can be noticed that almost all of the examined competencies were developed as a result of the internship.

As in the case of the in-depth analysis in Figure 5, also in this question, the average values of the received answers were calculated (on the analogous scale of 1-5). The results are presented in Figure 7.



**Figure 7.** Shaping key SD competencies as a result of internship according to the type of stakeholder (average values on the scale of 1-5).

Source: Own elaboration.

On the basis of the presented results, it can be stated that the competencies examined in this question were shaped to the greatest extent in business companies and administration (general average value is 4.4 in both cases). A visible disproportion was shown in the case of the third type of stakeholder, i.e. NGOs, whose ratings are definitely the lowest (average 4.0). At the same time, it is worth noting that the scores for all the competencies analysed in this question are in the range of 3.8 – 4.8 and are higher than in the case of SD competencies presented in Figure 5.

The final question in the questionnaire was summarizing. The respondents expressed their opinion of whether the implementation of the internship in the organisation in cooperation with various university stakeholders should be a form of shaping SD competencies. *Definitely yes* answer was given by 24% of people, *rather yes* by 54%, 17% had no opinion, and 5% said *rather no*. Such a distribution of answers means that the vast majority (78% in total) of students expect that shaping SD competencies will be performed not only in the process of their formal education but also thanks to employers – through internships in the real work environment and cooperation with various stakeholders.

## Discussion

The analysis of the respondents' answers to the first question of the questionnaire shows that the vast majority of management students confirm that during their studies they acquired knowledge regarding SD. It means that the curricula in this field of study are in line with the UNESCO (2014) guidelines, which draw attention to the key role of higher education in the SD range. At the same time, the analysis of the literature on the subject allows one to state that various higher education institutions are very interested in highly effective education in the field of SD (O'Riordan et al., 2020).

Another aspect of the research was focused on the assessment of students' competence regarding knowledge in 5 SD areas, i.e. 17 SD Goals, Agenda 2030, carbon footprint, circular economy, and green competencies. The obtained results indicate that the possessed competencies relate to the greatest extent to those issues which refer to pro-environmental activities and ecological knowledge. This conclusion is confirmed by numerous studies presenting the Z generation as the green generation, whose representatives attach great importance to activities in accordance with the SD concept (Hay, Eagle, 2020; Dabija et al., 2019; Wawer et al., 2022). However, in this context, the knowledge of the 2030 Agenda as a formal document is not so high (PŁ, 2021). Such a conclusion should become the basis for the analysis of the content of education programs and the consistent expansion of students' theoretical knowledge in the area of SD.

The last issue related to the first research question is the opinion concerning the importance of the 17 SDGs. As in the previous question, also in this case, according to the respondents, the most important are those goals that relate to environmental protection and the elimination of ecological threats in the world. For members of generation Z, typical ecological values are essential, i.e., the company's reduction of greenhouse gas emissions and energy and water consumption, responsible waste and wastewater management (Rzemieniak, Wawer, 2021). This confirms that the development of green competencies of students in various forms of formal and informal education, both during university education and through internships, is an activity not only beneficial for economic and social reasons but also desirable by young people entering the labour market (Yamane, Kaneko, 2021). However, the results of the research suggest that the assessment of the importance of achieving particular goals is rated much higher by students than the possibility of having a personal impact on these goals (PŁ, 2021).

The next four questions were aimed at finding answers to whether the implementation of internships in a real work environment enables students to shape SD competencies.

At the beginning of the analysis of the obtained results, it should be stated that over 60% of people representing the organisation, i.e. superiors, mentors, or employees, did not talk about SD to the interns, either generally or in connection with the rules of work in a given

organisation. This may mean that they either do not have such knowledge themselves or did not consider the topic important to discuss with interns. This is an unfavorable situation and it requires a change in this sort of approach in the process of implementing internships. They are indeed an excellent opportunity to develop students' SD competencies as future employees in a real work environment (Brundiens et al., 2010). Subramanian et al. (2015) highlight the importance of how managers in general and HR managers, in particular, must take an active role in promoting green practices. As leaders, managers should offer clear and unambiguous green performance indicators and expectations for evaluating green performance to their employees.

The next question was especially important because it concerned the skills that students developed thanks to the activities carried out during the internship. On the basis of the study, it can be stated that during work they had the greatest opportunity to: develop an awareness of the different perspectives of the stakeholders involved in SD projects, combine personal and professional development with active citizenship favoring, improve understanding of SD policies promoted at the institutional level, as well as of the possible impact of these policies and the scenarios they generate in the local context.

In the research conducted by Cavicchi (2021), the above-mentioned competencies were also indicated by respondents, but they were slightly less important than others, such as: developing new SD competencies through networking and teamwork activities and proposing solutions to the complex problems of the SD project. Students perceived that the internships presented an opportunity to create learning communities, promoted on behalf of the organisation that hosted the internship (Cavicchi, 2021). It should be emphasized that regardless of the outcome of the ranking of the above-mentioned competencies in various studies, they were all indicated as those, which students had the opportunity to develop during their internships.

A review of the literature on the subject made it possible to identify a different classification of SD competencies, which was used in the next question of the questionnaire. The obtained results indicate that the surveyed students of management developed to the greatest extent such competencies as collaboration, anticipation, integrated problem-solving, systems thinking, and normative. Research conducted by Ziegler and Porto-de-Oliveira (2022) confirms that they are very important for students. According to Rios et al. (2018), interpersonal skills are essential for achieving sustainability objectives.

The last question in the questionnaire concerned the issue of cooperation between universities and various stakeholders in the implementation of students' internships. Almost 80% of students express the opinion that shaping SD competencies should be fulfilled not only in the process of their formal education but also thanks to employers – as a result of internships carried out in a real work environment. This viewpoint is often confirmed by various studies (Rios et al., 2018). Partnerships between higher education institutions and firms mediated by students' internships allow increased mutual benefits in the form of the exchange of knowledge and innovation (Franco et al., 2019). According to Cavicchi (2021), regarding practical



SD activities, internships were perceived as opportunities to network with stakeholders and develop problem-solving abilities.

Summing up the above discussion, it should be emphasized that the obtained research results are based on the subjective opinion of the respondents. More attention should be devoted to assessing and developing measures of the core competencies concepts in terms of their construct validity and multi-dimensionality (Rios et al., 2018).

## **Conclusion and limitations**

The analysis of the literature on the subject allowed the author to identify the key areas related to the article: the essence and goals of SD, SD competencies, the role of higher education institutions and various stakeholders in shaping the SD competencies of Generation Z, as well as the possibility of using student internships to develop these competencies.

The conducted research made it possible to find answers to two research questions. The first one is: What knowledge in the field of sustainable development do students of management have and what do they think about the importance of SD goals listed in Agenda 2030?

The results of the conducted studies indicate that management students have extensive knowledge of selected SD areas. However, higher education institutions should make a detailed analysis of the content of curricula and the extent of theoretical knowledge required of students in these areas. There is a need for further education of generation Z regarding the 17 SDGs and related documents, including Agenda 2030. The most important for students were those SD goals which concerned environmental protection and elimination of ecological threats in the world. This confirms the conclusion that for the representatives of Generation Z, the most important are the goals with which they identify themselves and the achievement of which they can have influence. On the other hand, they gave significantly less importance to goals on which they had no direct influence, e.g. achieving gender equality and strengthening the global partnership for SD.

In today's world, sustainability takes on particular importance. Awareness of this problem should be significant, especially among young people, who in the future will decide, as employees and employers, to take pro-environmental actions and will be a driving force towards achieving sustainable development goals (Yamane, Kaneko, 2021).

The second research question was aimed at finding the answer to whether the implementation of internships in a real work environment enables students to shape SD competencies. The obtained research results confirm that the answer to this question is affirmative. Although key people employed in the organisation often do not conduct formal conversations with interns about SD, the development of these competencies is carried out in

practice while performing everyday duties and undertaking various activities in the work environment. Therefore, this is a very favorable situation, as the growth of SD of competencies is based on empirical actions. The results of the research also allow one to conclude that not all the examined competencies of management students were shaped to the same extent during the internship. This suggests the need to assign interns to perform more diverse tasks and solve non-standard problems to enable them to fully use their potential and expand the range of SD competencies they have acquired.

Summing up the above considerations, the obtained results allow one to fill the research gap concerning management students' opinions on shaping their competencies in the field of SD in the real work environment, thanks to the involvement of employers as stakeholders of higher education institutions, who enable students to pursue internships.

The results obtained can be recommended to higher education institutions to improve the quality of teaching processes in terms of the transfer of theoretical knowledge, as well as various stakeholders (business, public administration, non-governmental institutions) who should take action to practically form students' competencies through internships. The greatest opportunities for the development of SD competencies were provided to interns by business organisations and administration, while less importance was assigned to such stakeholders as NGOs.

The results of this study should be read in light of certain limitations. The author is aware that the cardinality of the surveyed group does not allow for the formulation of general conclusions.

Although quite numerous, the study sample cannot be considered fully representative of the entire population of Generation Z. Additionally, the research was conducted solely among management students. Although it was a conscious selection of the research sample, the conclusions cannot be applied to students of other faculties and courses. Research shows that attitudes to sustainable development are equally or even more favorable among business students than in higher education more generally (Bask et al. 2020). The respondents' attitudes to the examined issues could also be different due to the different levels of knowledge and awareness of the issues in areas related to the SDGs. Additionally, the duration of the internship ranged from 120 to 180 hours. This is quite a short period and perhaps not all aspects of SD and connected problems, covered by the questions in the questionnaire, could be observed by the interns.

In the future, it would be worthwhile to conduct similar studies to establish the opinion of students with a broader consideration of other variables, such as different fields of study of the respondents, previous professional experience, gender, or duration of the internship. The in-depth results of the analysis of interns' opinions in terms of the type of organisation and the number of employees may also be particularly interesting. Therefore, the obtained results can be the basis for further in-depth research on these problems.

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