Environmental Sustainability and Libraries: What do the Students Think?

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Abstract Nowadays, great attention is paid to the role of libraries in sustainability. Their role is especially given in promoting not only sustainable development goals (SDGs) but their achievements, too. The reason for this is in their part in necessary promotion of literacy and offering free access to information about environment, environmental protection, sustainability, and SDGs. This is easily understandable bearing in mind that libraries must have their task in providing indispensably knowledge for current and future generation about these crucial issues for survival of mankind. In addition, it is generally known that current and future generation represent the foundation of sustainable development and all of the SDGs. On the other hand, higher education is a crucial mean for creating globally competent students for a more sustainable future. Bearing this in mind, we have conducted a survey on the students' opinion about the role of libraries in providing environmental sustainability and SDGs goals knowledge. Results of the survey were analyzed using SPSS 24 software for statistical analysis and they are presented in final parts of this paper.

Keywords:
environmental sustainability, libraries, sustainable development, sustainable development goals.

1   Introduction

Even the United Nations Stockholm Conference on the "Human Environment" in 1972 recommended the Declaration of the United Nations Conference on the Human Environment so that all Nations must include in their activities not only environmental protection, but also the necessary promotion of adequate education that is in line with the principles of sustainability with the aim of spreading knowledge of responsible behavior of individuals, organizations and communities towards the Planet (Maletič, Borojević, Petrović, Maletič, & Senegačnik, 2017).

The importance of education for sustainable development (SD) implies the importance of libraries in its implementation and achieving the goals of SD, bearing in mind that: "As a gateway to knowledge and culture, libraries play a key role in society. Resources and services, they offer provide opportunities for learning, providing the necessary literature and education, and assisting in the process of creating new ideas and perspectives that play a central role in creative and innovative society. They also help in providing authentic notes of knowledge created and accumulated by past generations. In a world without libraries, it would be difficult to improve human research and knowledge, as well as the preservation of the world's cumulative knowledge and heritage for future generations." (White, 2012) Such definition of libraries can directly be linked with the definition of SD, which is most commonly used, given by Lester Brown - founder of the World Watch Institute (Borojević et al., 2017). This definition is quoted in the report "Our Common Future" as follows: "Sustainable development is development that meets the needs of present generations without compromising the ability of future generations to also meet their own needs" (WCED, 1987).

Furthermore, the role of library is not only reflected in the Education for SD (Goal 4 - Ensuring inclusive and quality education and promotion of lifelong learning) due to the fact that libraries and librarians are also entrepreneurs, leaders, moderators and representatives of sustainability (Jankowska, Smith, & Buehler, 2014) and allow a wide range of products and services that promote the achievement of each of the 17 SD goals (SDGs) (IFLA, 2018a). Specifically, libraries are key institutions for achieving all the objectives of SD, bearing in mind that they provide the necessary access to information, cultural heritage, literature and information and communication technologies (IFLA, 2018b).

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The authors of the paper have conducted a research on the students' opinion about the role of libraries in providing environmental sustainability and SDGs goals knowledge. The research included 419 students – BSc, MSc and PhD students. For the purpose of our study we used an on-line questionnaire that consisted of 23 questions in total. An analysis of the questionnaire was carried out using the SPSS 24 software package.

2 Sustainable development

The concept of SD was first mentioned in 1982 at the Conference in Nairobi. United Nations General Assembly in 1983 passed a Resolution on taking the initiative for the establishment of the World Commission on Environment and Development. In 1987 this Commission issued a report "Our Common Future", which pointed to the consequences of uncontrolled demographic and economic growth, and therefore on the need to define the SD (WCED, 1987). The concept of SD was established in 1989 and proclaimed in the Bergen Declaration in 1990 at the Ministerial Conference held in Bergen, organized by the Government of Norway in cooperation with the United Nations Economic Commission for Europe. The concept of SD was adopted by the European Union in 1990, and by the United Nations in 1992. "The essence of the concept of sustainable development is based on the principle of intergenerational justice (= intergenerational equity). This principle applies to the inheritence of the same state of the environment from one generation to another. Failure to follow this principle, environmental damage done by one generation is transmitted to future generations. So, even though sustainable development depends on the biosphere and its ecosystems, it is mostly affected by people and their activities." (Petrović, 2016)

SD, besides environmental protection, must have goals related to the economic and social dimension. Thus, SD has at least three dimensions (Farsari & Prastacos, 2002; Manent, Santana, & Linares, 2014; Mititelu-Ionuş, 2017):

– Environmental (refers to the degradation of natural resources necessary for human consumption).
– Social (constitutes unequal distribution of prosperity and poverty).
– Economic (means that any development that seeks to achieve sustainability must be managed by a variety of capital flows).
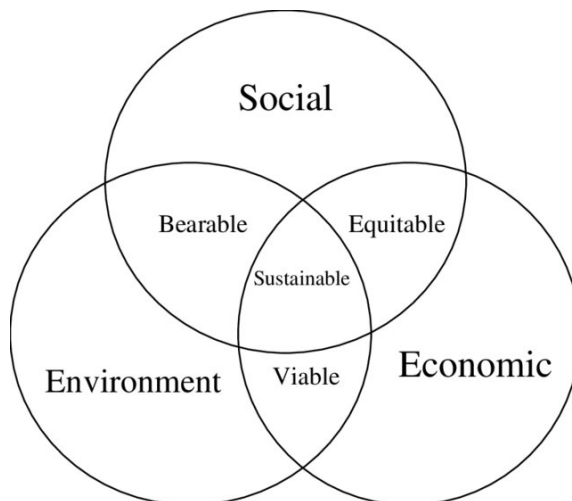
Figure 2: The three pillars of SD.

The new Agenda (Transforming our world: the 2030 Agenda for Sustainable Development) has 17 goals and 169 sub-goals that are unique in that they urge all countries, whether rich or poor ones to activities promoting global prosperity with necessary protection of the planet. The 17 SDGs are given in Table 1.

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Table 1: SDGs.

Order	Goal
1.	End poverty in all its forms everywhere
2.	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3.	Ensure healthy lives and promote well-being for all at all ages
4.	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5.	Achieve gender equality and empower all women and girls
6.	Ensure availability and sustainable management of water and sanitation for all
7.	Ensure access to affordable, reliable, sustainable and modern energy for all
8.	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9.	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10.	Reduce inequality within and among countries
11.	Make cities and human settlements inclusive, safe, resilient and sustainable
12.	Ensure sustainable consumption and production patterns
13.	Take urgent action to combat climate change and its impacts
14.	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
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
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
17.	Strengthen the means of implementation and revitalize the global partnership for sustainable development

source: UN, 2015; Petković et al., 2019

When it comes to the environmental components of SD it should be emphasized that it perhaps has the most important role, bearing in mind that "there is a growing concern about how to minimize the impact of human activities on the environment" (Mikulčić, Duić, & Dewil, 2017). It can be said that growing climate changes and their consequent environmental and social changes contributed the most to this, so the research studies indicated the necessity of the preservation environment for

today and next generations. As the 17 SDGs can be integrated by individual pillars of SD (Cutter, Osborn, Romano, & Ullah, 2015; Le Blanc, 2015; Petković et al., 2019) the environmental pillar of SD and belonging SDGs are given in Table 2.

Table 2: Environmental pillar of SD and belonging SDGs.

Order	Pillar of SD	Belonging SDG
1.	Environmental	SD6. Ensure access to water and sanitation for all
2.		SD7. Ensure access to affordable, reliable, sustainable and modern energy for all
3.		SD12. Ensure sustainable consumption and production patterns
4.		SD13. Take urgent action to combat climate change and its impacts
5.		SD14. Conserve and sustainably use the oceans, seas and marine resources
6.		SD15. Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

According to the source: Petković et al., 2019

3   The role of libraries in achievement of SDGs

Public access to information held by libraries enables realization of a basic human right that breaks the cycle of poverty and promotes SD (IFLA, 2017). It is a fact that libraries provide information necessary for people to make better decisions and improve their quality of life by providing assistance with their education, development of new skills, employment... This unique role of libraries makes it so that they are important partners of every type of development, SD included, by providing necessary information services and programs in a changing and complex society, contributing to the realization of SDGs.

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In adittion, with the raising concerns for the environment in the 21st century, the drive for energy efficiency, for environmental sustainability and prevention of climate change, arising from a growing awareness of the dangers brought on by human activites, are leading to new approaches to libraries design and their day-to-day functioning (Edwards, 2011). Great attention is being paid nowadays to both energy consumption, burning of fossil fuel, and other wide range of environmental and ecological issues. With the recent events of larg scale fires both in the Amazon and Australia, as well as the everlasting deforestation issues around the world and especially in Indonesia, the market of book publishing is becoming a spotlight for potential in raising issues of sustainability.

Every day these institutions use large amounts of energy for their services, content creation and preservation. Also, they themselves produce considerable quantities of waste seen in energy, water, paper and used electronics waste. Even today, at best the most of the libraries building space is still of course dedicated to keeping books and prints. Major public perception is that books still persist in being the library's brand. This poses an issue for economical sustainability of libraries. In the west, value and use of physical access to paperback books is decreasing, largely due to customers preferring e-books be it for their convenience, speed of acquiree, cost or environmental impact (Jankowska, & Marcum, 2010).

Since the 1990s the popularity of green topics regarding libraries has expanded from the term "green librarian", "green librarianship" to "go green", "green library movement" (Jankowska, & Marcum, 2010). These terms cover everything from recycling, to noise pollution, paper use, deforestation, waste pollution, etc.

Another possible focus regarding environmental sustainability and libraries is university libraries. After the United Nations "Indicators of Sustainable Development: Framework and Methodologies" (1966), the literature publicized and research conducted on national, regional, community and institutional indicators on environmental progress has grown. The growing concern of scientists, professors and researchers on climate change has resulted in vast literature and papers devoted to environmental sustainability in university libraries. However, when looking at the research targeted at sustainable universities, they do not treat libraries as distinct entities. Evidently there is a lack of sufficient data on sustainable and environmental performances of academic libraries, because libraries traditionally occupied the role of locations where collection, dispersion and constant recycling of information (both physical and digital format), libraries have created a sort of cyclical sustainability mirrored in the act of borrowing books instead of constantly buying new materials.

4   Methodology

For the purpose of our research, we conducted a survey of 402 students enrolled at the Faculty of Organizational Sciences, University of Belgrade, Serbia – BSc students, MSc students and PhD students. The questionnaire consisted of 23 questions, out of which the first three questions were demographic, the following 10 questions regarded their book-reading habits and their library usage, and the last 10 questions were closely related to the role of libraries in SD and achievements of SDGs.

An analysis of the results was carried out using the SPSS 24 software package. Descriptive statistics have been used in order to analyze the characteristics of the sample. The Mann Whitney U Test was conducted in order to compare two independent groups in regard to a observed scale variable. The p value is used to indicate if the differences between two particular groups that were in this research are statistically significant (where $p<0.05$ is considered statistically significant at the 95% confidence level).

5   Results and Discussion

Out of the 402 respondents, 62.93% were female, while 37.07% were male. When asked about their reading habits, 16.91% of respondents said they read at least one book a month, 36.07% said they read at least one book every three months, 23.88% said they read at least book every six months, 15.92% reads a book a year, and 7.22% reads less than a book a year.

These numbers speak to the total turnover of published books yearly, consequentially the number of trees cut down, number of fossil fuel emissions and other environmental problems.

The respondents also expressed their type of book preference, with unfortunately 86.07% of respondents preferring paperback books to e-books. This is especially interesting for further research on the role of libraries in environmental sustainability since next to burning coal, oil, and other fossil fuels, nothing contributes more to climate change than deforestation. The source for this lies in publications as innocent as children's books as well as books containing environmental themes.

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According to the Rainforest Action Network (2018) nine out of ten publishers of children's books in the US are contributing to the destruction of Indonesian rainforests.

When asked if they are a member of a library, 93.04% of respondents answered positively, but when asked how often they actually borrow books from libraries, only 16.92% of them borrows books regularly. This is perhaps due to the ever-lower popularity status of libraries, perhaps their low supplies or even because of the fact they offer little in comparison to large book supply chains.

As far as the type of books our students did borrow in libraries, as expected most of them (76.12%) borrow popular books (thrillers, romance novels, etc.), while 15.92% of students borrowed professional books, while out of all students, 89.05% of them borrowed professional literature at some point from a library.

Regarding the question whether or not they are familiar with the term SD 72.88% answered positively, while 65.92% defined it correctly. When it came to SDGs 69.9% said that they were.

Disappointedly but not surprisingly, 87.06% of respondents claim that libraries should have an immediate role in SD, while they claimed that their main roles were: disseminating knowledge on various environmental knowledge through professional literature and providing access to knowledge for all.

Following the previous question, when asked to give marks on the Likert scale (1 – not important, 2 – less important, 3 – so-so, 4 – important, 5 – very important) on the librarians' perception of their role in dissemination of SD knowledge in Serbia, vast majority marked the perception at a low scale (71.89% gave the mark 1 – not important, 12.93% gave the mark 2 – less important), and when it came to the real situation regarding to the role of libraries in dissemination of SDGs knowledge in Serbia, again the majority of students gave a low average mark of 2.37 (Likert scale: 1 – poor, 2 – fair, 3 – average, 4 – good, 5 – excellent).

Regarding the role of libraries in the environmental pillar of the SD, 62.93% of students answered positively, but when asked about the future potential of libraries

in the environmental pillar and their dissemination of environmental knowledge – 97.01% answered positively.

The results by gender show that female students answered more positively on the question regarding the role of libraries in the environmental pillar of the SD (significant p = 0.042). The results by education level did not show any statistically significant difference. These results are in the corelation with the "previous research related to environmental education in Serbia, in which it was concluded that the data about educational curriculum and programs has shown an evident lack of formal and permanent environmental education at all levels of formal education " (Borojević et al., 2017).

6   Conclusion

Libraries are more than the sum of services and institutions, they are centres of local communities, as well as the headquarters of information and guardians of cultural heritage for future generations. It is logical that libraries and their resources play a key role in implementing sustainable development strategies, while their direct role in achieving the 17 goals of SD stems from information networking and partnerships (Scholing, & Britten, 2017).

It is evident that libraries, like all institutions, are adjusting, and should continue to do so, to new environmental agendas, especially the imperatives of climate change. However, unlike many other institutions, libraries are and have to survive through different perceptions of environmental quality. Their priority has always been directed towards collecting and preserving archival knowledge. Today, in this day and age, given the consumer attitudes towards preservation of the environment, and all of the environmental problems we as human kind are facing, whatever the external demand, there is an overriding need to meet user expectations in terms of environmental sustainability in libraries.

For these reasons it can be concluded that libraries have become much more than institutions in the traditional sense because their influence beyond the four walls. This includes the need to improve the institutional and program supporting libraries, as well as those on public policy, which is externally emphasizes their role in SD.

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