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ASSESSMENT OF THE GREENNESS OF AN ORGANIZATION: BIBLIOMETRIC STUDY AND STRATEGIC DOCUMENT ANALYSIS

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Abstract. *Purpose* – the purpose of the research is to examine possibilities of practical implementation of the guidelines provided in the publicly available strategic documents and initiatives to assess the current situation of an organization in the aspect of greenness.

Research methodology – methods of analysis of the scientific literature, review of strategic documents, bibliometric analysis, and critical evaluation have been applied.

Findings – the need to develop guidelines to assess the greenness of an organization in the scope of the entire organization was identified.

Research limitations – the limited selection of documents for the analysis, because the search of strategic documents relevant to the analyzed topic performed among the publicly available sources in English. Further studies could incorporate an analysis of guidelines and good practices used in different countries presented in other languages.

Practical implications – the results of the research can be used to justify the need to develop guidelines to assess greenness at the scope of the entire organization.

Originality/Value – can be defined by examination guidelines provided in the strategic documents from the perspective of practical applicability in organizations.

Keywords: green organization, assessment of greenness of an organization, sustainable development goals, European Green Deal, strategic documents.

JEL Classification: I38, L59, M10, Q56.

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Introduction

During the last decades, concerns about global warming, pollution reduction, the pursuit of sustainable development goals, and green growth have been constantly increasing in the global society. The importance of mentioned priorities is also noted in the international and national strategic documents and initiatives, such as in the Organisation's for Economic Co-operation and Development [OECD] Green Growth Strategy (OECD, 2011), in the Paris Agreement to the United Nations [UN] Framework Convention on Climate Change (UN, 2015a), in the UN' 2030 Agenda for Sustainable Development (UN, 2015b), in the European Commission's [EC] European Green Deal (EGD) (European Commission [EC], 2019), in the EC's EU Missions in Horizon Europe project and others. With reference to UN (2015b), Yong et al. (2022) emphasized that companies are expected to provide substantive support in achieving the Sustainable Development Goals (SDGs). According to Sharma et al. (2021), EGD is an integral part of the Commission's strategy to implement the UN SDG Agenda 2030 to transform the EU into a resource-efficient and competitive economy by updating existing laws

and introducing new regulations to combat climate change and environmental degradation. According to Mikhno et al. (2021), the "green dimension" is becoming a clear institutional logic that can be used by sharing platforms to attract environmentally conscious users and achieve legitimacy in the eyes of sustainable development, oriented local authorities and investors. Therefore, it can be stated that modern organizations seek or have to respond to the priorities of global society by transformation of the orientation of their performance towards a green direction, thus contributing to the implementation of the SDGs.

From the perspective of organizations, it can be supposed that the first step, in order to develop the organization's performance towards green direction, could be an assessment of the current situation of an organization in terms of greenness and the identification of areas to be improved. Thus, it can be assumed that managers/representatives of organizations interested in developing the organization's orientation toward green direction will search for initial guidelines to assess their current situation in terms of greenness in sources from the scientific literature, strategic documents and/or other available sources.

However, while analyzing scientific literature on the topic, it was observed that although current research on the greenness of organizations is widely developed, but it can be considered as fragmentary, focused on the greenness of a certain element of the organization. It can be stated that there is no clear agreement among the authors of various scientific sources as to which organization should be considered green. For example, when analyzing the greenness of an organization, some authors emphasize the importance of ensuring the pursuit of sustainable development in the organization through economic, social and environmental dimensions, while other authors emphasize only the environmental dimension (i.e., Ormazabal & Sarriegi, 2014; Soewarno et al., 2019; Borsatto & Bazani, 2021 and other). In addition, several authors of the scientific studies analyse the greenness of certain elements/processes within an organization (i.e., Bose & Luo, 2012; Mishra, 2017; Yang et al., 2019; Ibnou-Laaroussi et al., 2020; Schartinger et al., 2020; Lartey et al., 2020; Naim, 2021; Aliamin, 2021; Chen & Wu, 2022; Rahayu et al., 2022; Rejeb et al., 2023 and other). Therefore, it can be assumed that different scientific approaches to the topic of organizational greenness can result in a variety of different directions of proposed recommendations, instruments, programmes, tools and other guidelines to increase organization's orientation toward a green direction. Based on this assumption, it can be stated that the lack of common approach on organization greenness can result in difficulties for organizations in choosing the starting point for assessment of their current situation in terms of greenness on the basis of scientific research. Therefore, organizations can search for the guidelines for necessary actions needed to increase the orientation of an organization towards the green direction among publicly available strategic documents and initiatives. Consequently, the research question of this study can be defined as follows – are existing guidelines provided in publicly available strategic documents and initiatives related to the greenness of an organization sufficient for practical implementation in the organizations to assess the organization's current situation in the aspect of greenness? The purpose of this theoretical study is to examine the possibilities of practical implementation of the guidelines provided in publicly available strategic documents and initiatives to assess the current situation of an organization in the aspect of greenness.

1. The greenness of an organization: context and challenges in scientific research

In order to increase orientation of the performance of an organization towards a green direction, it is important for the managers/representatives of the organization to understand what kind of an organization can be considered green. However, as a result of the analysis of the scientific literature, several challenges in understanding the greenness of an organization on the basis of the scientific research have been identified.

First, the complexity of the organization analysis in the aspect of greenness can be determined by disagreement about the terms and definitions used in the scientific literature. For instance, there is no agreement on the definition of a green organization. Thus, Graczyk-Kucharska (2022) defines green organizations as those in which production, organizational and marketing processes are carried out in line with the principles of sustainable development, using environmentally friendly technologies, waste reduction, energy efficiency, and sustainable resource management based on social, natural and economic pillars. Meanwhile, Ajadi et al. (2022) agree with Dubihlela (2014) that a green organization merges its organizational objectives with environmental sustainability principle which culminates into a "green work culture" that applies GHRM (green human resources management) practices to its operations. According to Dragomir (2021), the green organization, as a modern organization has to be ecologically "clean". It is noticed that the authors often use concepts of sustainable, environmentally friendly, socially responsible, green and ecological organizations as synonyms to name organizations that base their activities on the priorities of sustainable development. Arguably, the attribution of similar characteristics to these organizations complicates the targeted search for information on the topic and can result in inconsistency of scientific research. Also, the term *green* is commonly used in the scientific literature with purpose to emphasize the ecological nature, environmental aspect of certain element/process, i.e., green energy (Tan et al., 2021; Qin et al., 2022), green chemistry (de Marco et al., 2019; Zimmerman et al., 2020), green building (Asmone et al., 2019; Li et al., 2020), green finance (Zhang et al., 2019; Muganyi et al., 2021), green economy (d'Amato & Korhonen, 2021; Lee et al., 2022), green taxes (Cheng et al., 2022; Shafi et al., 2023), green supply chain (Tseng et al., 2019, Micheli et al., 2020); green behaviour (Unsworth et al., 2021; Sobaih et al., 2022), etc. It can be assumed that a wide and different usage of the term *green* can cause difficulties in interpretation.

In addition, the greenness of the organization in the scientific studies is analyzed from many different aspects, i.e., some scholars are focused on the analysis of greenness of different elements and processes within an organization such as green human resource management (Roscoe et al., 2019; Singh et al., 2020; Aboramadan & Karatepe, 2021), green procurement (Yang et al., 2019; Rejeb et al., 2023), green IT (Bose & Luo, 2012; Muslim et al., 2019; Naim, 2021) and other elements and processes of an organization. Other authors of scientific studies on the topic tend to analyze greenness through the perspective of the area of activity of an organization, i.e. green tourism (Ibnou-Laaroussi et al., 2020; Rahayu et al., 2022), green architecture, engineering and construction (Xu et al., 2019; Aliamin, 2021), green logistics (Bozhanova et al., 2022; Yingfei et al., 2022) and other sectors of activity. Some scholars choose to analyze greenness of an organization through the prism of management,

i.e., green transformational leadership and green management (Begum et al., 2022; Chen & Wu, 2022; Sun et al., 2022). Furthermore, it was observed that the authors of the analyzed scientific sources do not examine the greenness of an organization at the scope of the whole organization, but mostly emphasize a certain aspect of the "greenness" of the organization (or increase of greenness of certain element of an organization), i.e., green human resource management, application of green innovation, development of green strategy (Mishra, 2017; Jamal et al., 2021; Fusillo et al., 2022; Schartinger et al., 2020; Lartey et al., 2020) and other aspects. Nevertheless, it was observed that while describing the greenness of an organization, the authors of various scientific studies emphasize the application of certain green practices in the performance of an organization (Su et al., 2020; Aboramadan & Karatepe, 2021). Thus, in agreement with the opinion of scholars mentioned above, the authors of this research conclude that one of the possibilities for describing the greenness of the organization is the application of green practices in the organization's activities.

Also, while analyzing scientific literature on the topic of this research, it was observed that part of the scientific studies mainly focuses on the analysis of links between *green* elements of an organization (Table 1).

However, while analyzing scientific studies that examine the links and interactions between green elements of an organization, it was noticed that there is lack of a systematic approach to the organization and in this type of research study remaining elements of the organization are not taken into account. It should also be noted that the greenness of some elements analyzed themselves has not yet been devoted to sufficient scientific research. It can be stated that this type of research does not make assumptions to define the greenness of the organization due to its fragmentation.

By summarizing the identified challenges in the analysis of the greenness of the organization, it can be stated that several challenges appear while analyzing the greenness of an organization, which complicates the understanding of a green organization. It was observed

Table 1. Examples of scientific studies on interconnections between green elements of an organization (source: compiled by the authors)

Year	Author(s)	Analyzed green elements and their interconnections	Result
2019	Roscoe et al.	The relationship between green human resource practices, green organizational culture enablers, and corporate environmental performance.	Link confirmed
2020	Singh et al.	The interaction of green human resource management with green transformational leadership, green innovation, and environmental performance.	Interaction confirmed
2020	Su et al.	The link between environmental leadership and organizational performance, considering the mediating role of green innovation practices and the moderating role of environmental knowledge learning.	Link confirmed
2021	Aboramadan and Karatepe	The effects of green organizational support on green human resource management, organizational performance, and organizational citizenship behaviour.	Interaction confirmed

that there is still a lack of consistent research on the topic; therefore, scientific research on the greenness of an organization can be considered fragmentary. It can be argued that it can cause difficulties for organizations seeking to orient their performance toward a green direction on the basis of recommendations and guidelines provided in the results of scientific research. Organizations may choose to try to assess their level of greenness on the basis of publicly available guidelines provided in strategic documents and initiatives. Therefore, it is reasonable to examine whether the existing guidelines provided in the publicly available strategic documents and initiatives related to the greenness of an organization are sufficient enough for practical implementation in the organizations to assess the current situation of the organization in the aspect of greenness.

2. Research methodology

To examine the sufficiency of the existing guidelines provided in publicly available strategic documents and initiatives to assess the current organization situation of the organization in the aspect of greenness, a theoretical study has been conducted in three main stages (Figure 1).

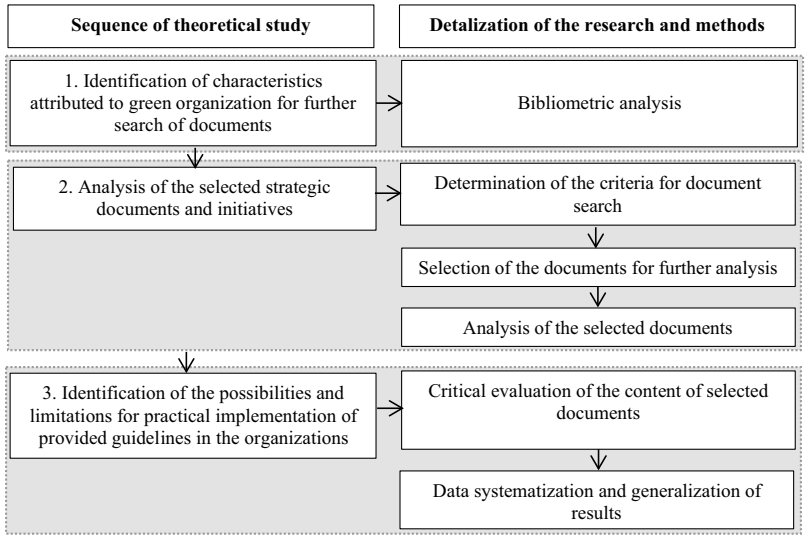

Figure 1. Research sequence and applied methods (source: composed by the authors)

In the first stage, bibliometric analysis was applied to identify characteristics attributed to green organizations to apply refined search of the strategic documents and initiatives for further analysis. *In the second stage*, search criteria for document selection were determined and the selection of documents was carried out. *In the last stage*, an analysis of the selected strategic documents and initiatives was carried out to examine the possibilities of practical implementation in the organizations to assess their greenness. In addition, essential limitations of the application of the examined documents were identified.

3. Results and discussion

To identify the characteristics attributed to the green organization in the scientific literature and to identify the keywords associated with the greenness of the organization a bibliometric analysis of the latest scientific articles (published in the last 5 years) was carried out. Information search for bibliometric analysis was performed using the Web of Science Core Collection search engine from the Clarivate Analytics database. The basic search parameters were defined as such: search by name, period from 2019 to 2023, type of documents analyzed – "articles". The search of the articles in the Web of Science Core Collection database was performed using keywords: green organisation, green organization, green company, green business (search summary: "green organisation" (Title) OR "green organization" (Title) OR "green business" (Title) AND Article (Document Type) AND 2019–2023 (Year Published)). Information processing and visualization for bibliometric analysis were prepared using the Microsoft Office Excel and VOS viewer programme. Search results: 45 articles in English that contain one of the search keywords mentioned above.

329 keywords most often associated with the green organization were identified, after setting the condition that the keyword should be repeated in the analyzed source at least once. 296 of the 329 identified keywords are interconnected and were chosen for further analysis. The most frequent keywords are: performance (emphasized 14 times in the analyzed sources), management (12 times), sustainability (11 times), innovations (9 times), sustainable development (8 times); impact (7 times); green business (6 times) and others. The distribution of keywords is shown on the bibliometric map presented in Figure 2 ("co-occurrence of all keywords"), consisting of 18 clusters, with 2445 links between them. Based on the significance and importance represented by the size of the circles and the strength of the relationships represented by the lines, the most common keywords by cluster are the following: brown cluster – sustainability, green initiatives; blue cluster: management, innovation, sustainable development, competitive advantage; green cluster: performance, systems, design, climate change, product innovations, framework, environmental management.

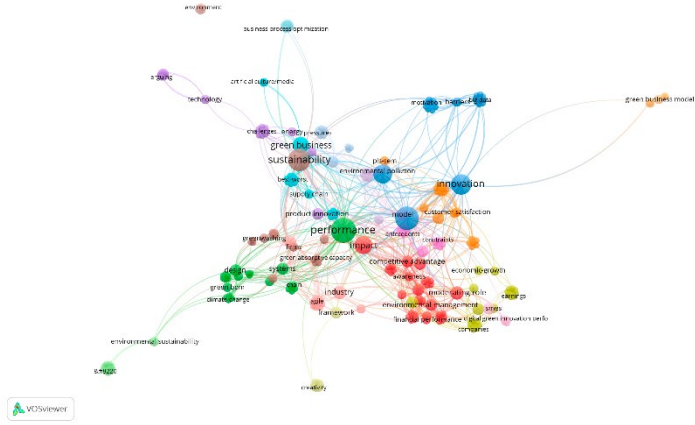

Figure 2. Bibliometric map of co-occurrence of all keywords (created by authors with VOSviewer software based on Clarivate Analytics data)

There were 178 keywords associated with the green organization by the authors, which have been identified after setting the condition that the keyword is repeated in the analyzed source at least once. 82 of the 178 identified keywords are interconnected and were chosen for further analysis. The most frequent keywords are: sustainability (emphasized 6 times in the analyzed sources), green business (6 times), sustainable development (5 times), and green business strategy (3 times). The authors have highlighted other keywords 1–2 times. The distribution of keywords is shown on the bibliometric map presented in Figure 3 ("co-occurrence of authors' keywords"), consisting of 13 clusters, with 273 links between them. Based on the significance and importance represented by the size of the circles and the strength of the relationships represented by the lines, the most common keywords by cluster are: orange cluster – sustainability, circular food supply chain, maturity model, green business process management, small and medium-sized enterprises, information technologies, green growth; brown cluster: sustainable development, environmental protection, environmental pollution, green motives, green business strategies, green competencies; blue cluster: green business, artificial culture/media, logistics, circular economy, environmentalism, behavioural intentions.

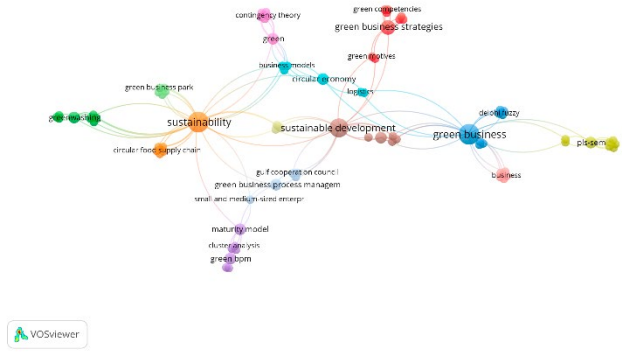

Figure 3. Co-occurrence of authors' keywords (created by authors with VOS viewer software based on Clarivate Analytics data)

Although keywords related to green organization were identified during bibliometric analysis, it is difficult to group them according to a certain characteristic. It can be stated that bibliometric analysis confirmed the fact that the authors emphasize various aspects of the greenness of the organization and there is a lack of a unified understanding of the green organization concept. Regrettably, it can be concluded that bibliometric analysis did not help to determine the essential keywords that can be applied to the further search of strategic documents. Therefore, it was decided to define the main criteria for the search of the documents as follows: the document should be publicly available, written in English, issued at the international level by a globally recognized organization related to the topics of sustainability or green growth (such as UN, OECD, EC or similar) or issued at the national level by the legislative authorities of the country.

After conducting a search by the determined criteria, it was observed that many strategic documents are associated with directives and recommendations to states, governments,

state-level measures and actions for promotion regional management (for example, the set of recommendations of the Sustainable Development Goals (Buraitytė & Lekavičiūtė, 2019). According to the search results, only several examples of identified documents can be defined as partly related to the orientation of the organization's performance towards green direction. After critical evaluation of the documents that meet the purpose of this theoretical study, the main possibilities and essential limitations for adapting them in organizations were identified (Table 2).

It can be assumed that some aspects can be considered as the essential limitations of the application of the examined documents: applicability (not all recommendations are suitable for organizations of various sizes and fields of activity); lack of a systemic approach to the organization, main orientation towards certain elements of the organization; orientation on the policy makers (limited possibility to apply at the organizational level).

By summarizing the results of the analysis of selected strategic documents, it can be concluded that the guidelines provided in the analyzed documents are only partially sufficient to help organizations assess their current situation in the aspect of greenness and identify areas

Table 2. Possibilities and limitations of the practical implementation of the guidelines provided in the strategic documents and initiatives for the assessment of the organization in the aspect of greenness (compiled by the authors)

Year, Organization	Document title	Possibilities to assess the greenness, applicability in the organizations	Limitations of application at the organizational level
2009, European Comission	EU Ecolabel certification programme	An official voluntary certification programme is designed to obtain an environmental label, which certifies products that meet high environmental standards throughout their life cycle, and therefore, such certification would contribute to increasing the organization's orientation toward greenness.	Certification requires costs and is mainly focused on the organization's performance (products), but not all categories of possible products are included in the labelling catalogue.
2014, Environmental Agency of Iceland	The Green Steps programme	The programme consists of a set of actions divided into 5 levels (steps), each step includes actions that must be performed in order to move to the next level. Greenness is analyzed in stages, and management of the organization in a green direction is analyzed only at the last level of the programme; therefore, the programme can be considered suitable for organization's self-assessment.	The programme details actions divided into seven different categories: electricity and heating; waste sorting and waste reduction; meetings and events; transport; purchase; communication and management; kitchen and cafeteria; the last stage is for management. The programme is mandatory for state institutions, so the set of actions is more focused on public institutions. Also, the applicability of the programme is limited by the fact that the detailed programme is publicly available only in Icelandic language.

End of Table 2

Year, Organization	Document title	Possibilities to assess the greenness, applicability in the organizations	Limitations of application at the organizational level
2015, United Nations	UN Sustainable Development Agenda 2030, Adaptations of SDG indicators (at national level)	The document sets out 17 sustainable development goals and 169 smaller targets that cover many policy areas and are intended to be implemented by 2030. The adaptations of the indicators of the sustainable development goals at the national level identify the opportunities for the application of good green practices, which organizations can familiarize themselves with and apply in their activities. However, the document can be defined as only partially sufficient for a comprehensive assessment of the greenness of the organization.	Goals, tasks, and expected indicators cover many areas both on the international and national level, so organizations should select and adapt indicators relevant to their activity; therefore, the assessment can be selective and fragmentary. It is noticed that the indicators are more orientated to the state-level policy makers, which limits implementation at the organizational level.
2016, European Commission	A handbook on Green Public Procurement (3rd Edition)	The possibilities of applying green practices in public procurement are listed and organizations can get acquainted with them. However, the document mostly covers specific field of activities and cannot be used for a complex self-evaluation of greenness of an organization.	Limited practical implementation, because the document is mostly orientated on the aspects related to public procurement.
2020, European Comission	EU Taxonomy for sustainable activities	Environmentally friendly economic activities are listed. Also, the regulation identifies good opportunities to apply green practices.	Six environmental goals have been established: mitigation and adaptation, sustainable use of water and marine resources, transition to a circular economy, prevention and control, protection and restoration of biodiversity and ecosystems, but the described options cannot be applied to the different types of organizations.
2021, European Council	Fit for the 55 package (set of proposals)	The set of proposals to revise and update EU legislation and implement new designed to reduce the European Union's greenhouse gas emissions by 55% by 2030 aims to modernize existing legislation in line with the EU's 2030 climate target and introduce new policy measures to help bring about the transformative changes needed in the economy, society and industry to achieve climate neutrality by 2050. These proposals can be used as guidelines for organizations to identify opportunities to apply green practices, but not for self-assessment of greenness.	The set of proposals and their content are mostly orientated to the legislation of the energy sector, land use and forestry, the road transport sector, and energy taxation, but cannot be considered as applicable for all types of organizations.

for improvement. It can be stated that most of the analyzed strategic documents provide directions for recommended actions but do not provide specific guidelines or list of certain actions in order to help organizations start transforming their performance towards the green direction. Also, it was noticed that the analyzed strategic documents do not provide guidelines that would allow the assessment of the current situation in terms of greenness of the entire organization. It can be stated that the need to develop initial guidelines for organizations that would help to assess their current situation in the aspect of greenness at the scope of the entire organization has been identified. Also, based on the results of the analysis of existing documents, such guidelines can be claimed to be developed taking into account the suitability for organizations of various sizes and fields of activity.

Conclusions

Modern organizations tend to react to the increasing importance of the concern of the global society to ensure sustainable development and green growth. Looking to contribute to implementation of Sustainable Development Goals by transforming their orientation toward green direction, organizations may need to have guidelines for initial and further actions. It was assumed that such guidelines may be found in the scientific literature and strategic documents. However, when analyzing scientific studies on the topic, it was observed that research on the greenness of an organization could be defined as fragmentary, mainly focused on the greenness of a certain element of an organization or process within it. Several essential challenges in understanding the greenness of an organization on the basis of scientific research have been identified: no agreement of scholars on the definition of a green organization; wide and different usage of term green causes difficulties in the interpretations; lack of systematic approach and analysis of the greenness at the scope of entire organization. Based on these investigations, it was assumed that inconsistency in scientific research on the topic may lead to difficulties for organization in choosing the starting point for their green self-assessment. Therefore, it was decided to analyze other possible sources of information – the existing guidelines provided in the publicly available strategic documents and initiatives related to greenness of an organization and to examine whether they are sufficient enough for practical implementation in the organizations to assess the current situation of the organization in the aspect of greenness.

Bibliometric analysis has been performed to identify essential characteristics attributed to the green organization in order to refine the criteria for further search of the information. The results of the bibliometric analysis confirmed the fact that the authors emphasize various aspects of the greenness of the organization and there is a lack of a unified understanding of the green organization concept. However, the results of the bibliometric analysis did not provide clarity on the essential characteristics attributed to the green organization.

After summarizing the results of the analysis of the selected strategic documents related to the topic of greenness, it was noticed that most of the analyzed strategic documents provide directions for recommended actions, but do not provide specific guidelines or list of certain actions to help organizations start transforming their performance toward the green direction. Based on the results of the analysis, it can be stated that limited applicability at the organizational level in the different organization and the main orientation toward

state-level policy makers could be considered as essential limitations of the application of the documents examined. Therefore, the need for initial guidelines that would allow for self-assessment of the current situation in terms of the greenness of the entire organization has been identified. Assessing the current situation in the organization in terms of greenness and identifying the areas to be improved in the scope of the entire organization would allow increasing the implementation of green practices and helping to make reasonable management decisions by applying green practices in daily activities, thus contributing to the realization of the goals of global sustainable development.

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