

Sustainable Management of Public Investments through Projects Aligned With the DNSH Principle

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Abstract

This paper investigates the role of management as a tool for environmental and social balance, within a theoretical framework based on the Do No Significant Harm (DNSH) principle. Sustainable management practices can contribute to achieving sustainable development objectives through an integrative approach of economic, social, and environmental aspects. The research aims to identify and analyze concrete evidence supporting the idea that adopting circular practices can deliver quantifiable benefits. The paper provides recommendations for key stakeholders on obtaining instruments to reduce the impact of the DNSH principle and circular practices. This paper contributes to DNSH compliance management by examining relationships between implementing the DNSH principle and sustainable public management, using a mixed-method design. The qualitative approach will explore in detail public administration management's perceptions of the DNSH principle through a semi-structured interview. The pool of 30 managers will be drawn from central and local public administration professionals. Subsequently, the paper presents a quantitative study on 120 managers. The instrument measures implementation, optimization, and decision-making processes based on public administration managers' perceptions of DNSH. The key findings indicate the extent to which institutional behavior and improved administrative capacity related to this subject correlate with effective implementation and compliance with the DNSH principle. This study is one of the few articles to investigate the driving factors of DNSH implementation and how DNSH regulatory principles can reshape institutional behavior in Romania.

Keywords

Do No Significant Harm; DNSH Compliance; Sustainability; Public Sustainable Development; Project Management; Public Administration.

Introduction

Sustainable Development is a complex concept, first defined in 1987 in the Brundtland Report of the World Commission on Environment and Development, entitled "Our Common Future." It is a process that stems from the current needs and aims to meet future requirements. Sustainable Development is a global priority, with 17 clear objectives and associated targets set out in the 2030 Agenda.

An essential element of sustainable development is the circular economy. Sustainable economic growth involves economic development through circular practices that can benefit from reduced operating costs and increased competitiveness in sectoral markets (Busu, 2019), without compromising the natural resources, but evolving in harmony with the environment (Ghiga & Bulearcă, 2009). The circular economy promotes the reuse, recycling, and regeneration of resources, thereby reducing environmental impact. Moreover, the Taxonomy Regulation (EU) 2019/2099 defines "environmentally sustainable" or "green" activities as activities that contribute substantially to the environmental objectives of the EUTR and should consider the life cycle of the products/services provided by an economic operator. The life-cycle assessment of environmental impact considers production, use, and end-of-life, making compliance with the DNSH principle a prerequisite for projects to be considered sustainable.

The government's efforts to address the effects of climate change are already affecting the strategies of economic operators, with the applicable instruments being strategic and mandatory rather than voluntary. (Porter & Reinhardt, 2007). Thus, in the context of increasing efforts to address the challenges posed by climate change, sustainable management is a priority for maintaining a competitive path by integrating sustainability principles into all processes without compromising future generations' ability to meet their own needs.

Sustainable management can be ensured through a process of monitoring progress toward the investment objective. A monitoring process for public investments periodically assesses progress against pre-identified objectives during project implementation, using quantitative methods for reporting and management purposes. The information obtained as a result of the monitoring process is essential for understanding the investment being evaluated. If the monitoring process is carried out effectively, it can later be used to improve decision-making. However, it is reasonable to assume that most public institutions have limited resources, administrative capacity, budget, or expertise to develop their own analyses, studies, and research during this process. This leads to the need to outsource studies/analyses to academia, NGOs, international organizations, or specialized economic operators.

Reality proves that sometimes the executive staff is in a position to deliver outstanding results with limited resources and without proper training. There are few or no specialists assigned to the fields of environment and sustainable development, and professional training programs are delayed or not scheduled. The lack of specific skills, high workload, and limited time to complete tasks can lead to poor performance from a sustainable development perspective.

Literature review

Research in the field of sustainable management has seen significant development in the context of the 2030 Agenda for Sustainable Development. Sustainable development was first defined in the Brundtland Report of the World Commission on Environment and Development (1987), entitled "Our Common Future." It is a process "that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Circular economy

A central feature of sustainable development is the concept of the circular economy, which promotes the efficient use of resources and the reduction of waste. This not only supports economic development but also helps reduce environmental impact, demonstrating that sustainability and economic growth can coexist and that investments in renewable energy are essential to the transition to a sustainable economy. Busu (2019) argued that economic agents adopting circular practices can benefit from reduced operating costs and increased competitiveness. The circular economy proposes a profound restructuring of the way resources are managed. The circular economy prioritizes the reuse, recycling, and regeneration of resources, thus reducing the impact on the environment by closing a cycle in which waste becomes a resource.

The established linear economic model of obtaining natural resources, producing, consuming, and generating waste has reached its limits of sustainability, given the decline in natural resources and the increase in pollution from waste that cannot be reused. The obvious alternative is the circular economy, which encourages reuse, recycling, and resource regeneration, thereby reducing negative environmental impacts by turning waste from one process into reusable resources. Stahel (2019) demonstrated that the principles of the circular economy extend the life cycles of products and propose alternatives to resource use, thereby reducing economic losses. Sustainable economic growth requires implementing solutions that enable economic development without compromising natural resources or the health of the planet, thereby allowing the economy to evolve in harmony with the environment (Ghiga & Bulearcă, 2009).

DNSH principle

The DNSH principle has become an essential criterion for the evaluation and financing of projects funded by European funds and is set out in Regulation (EU) 2020/852. However, the literature addresses the integration of this principle into management processes in a fragmented manner, emphasizing technical and regulatory aspects (Ciornei, 2022), but less so its theoretical implications for governance models and ecological-social balance. As part of the recovery and resilience mechanism, the European Commission has committed to only financing projects that do not cause significant harm to environmental objectives. Therefore, any project must comply with the DNSH principle.

For an economic activity to be recognised as "green" by the EU Taxonomy, Suci (2024) considers that it must meet the following technical criteria: first, it must make a substantial, rather than marginal,

contribution to at least one environmental objective; second, it must not cause significant harm to any other environmental objective; and third, it must comply with minimum social safeguards. The integration of the DNSH principle may have an impact on EU-funded projects, as this financial instrument has the potential to support sustainable development objectives at the local level, contributing to local development by integrating environmental objectives into the early stages of investment projects. Therefore, sustainable financing plays an important role by considering sustainability factors in decision-making processes regarding investments and their financing, taking into account ESG criteria (Ciornei, 2022). Sustainability is focused on avoiding the long-term depletion of natural resources, and there is a general agreement that sustainability is something that needs to be considered in responsible management practices.

Thürer et al. (2018) believe that there is strong political will and a firm commitment to sustainability and sustainable development. The same author notes that there is a general, though not complete, consensus on the three dimensions of sustainable development: the social, economic, and environmental. Thus, Segalàs et al. (2010) complement with a fourth dimension, the institutional one, which encompasses the role of education and external stakeholders.

Institutional investors face increasing pressure from stakeholders, and growing awareness of the impact of investment decisions on social and environmental issues has led to a paradigm shift in how they approach their portfolios (Eccles et al., 2014). They appreciated that a large body of research has explored the integration of sustainability into institutional investors' decision-making frameworks, emphasizing the critical role of environmental, social, and governance (ESG) criteria in shaping investment strategies. Also, legislative pressures from governments and regulatory bodies are an important factor in promoting corporate sustainability, highlighting how coercive pressures can cause organizations to adopt more sustainable practices, making them more attractive to investors concerned about the risks associated with non-compliance (Thornton et al., 2012). Furthermore, some authors (Marinescu, 2020) suggest that institutional pressures and legislative regulations are the main factors driving the adoption of these practices.

By taking proactive measures, organizations can transform ESG compliance from an administrative burden resulting from the regulatory process into a strategic advantage in terms of improving sustainability. Mandatory regulations and directives are considered essential tools for holding companies accountable and ensuring the systematic integration of ESG factors into corporate governance. (Eccles et al., 2014)

Project management

Project management aims to achieve the established objectives and targets, as well as the project's long-term impact (Andersen et al., 2006). To meet the objectives of an investment project, Boyatzis (1982) identified a set of necessary competencies, including fundamental characteristics such as knowledge, skills, abilities, and attitudes that enable high performance. Initially, project management focused on efficiency criteria. However, the emergence of integrative models took into account additional dimensions, including the benefits to the organization, stakeholder satisfaction, and the impact on the community and the environment (Carvalho, 2017).

According to IPMA [International Project Management Association] (2012), competencies consist of the practical application of knowledge, skills, and abilities to achieve desired results. This framework recognizes the interconnection of these elements, as competence involves acquiring relevant knowledge and developing skills that, once put into practice, enable professionals to manage projects effectively and successfully. Hanna et al. (2016) emphasized the changing nature of projects and argued that these competencies involve the demonstrated ability to carry out project implementation activities in a dynamic environment, leading to expected results in line with established standards. Muller (2010) stated that there is a relationship between creativity, decision-making, and strategic perspective (cognitive competencies) and the success of investment projects, demonstrated by studies that provided evidence of the relationship between strategic perspective and investment project management. An analysis of the competencies examined in the specialized articles highlights the relatively limited attention paid to sustainability competencies. For these purposes, project management can be considered a useful tool for professionals implementing strategic organizational transformations (Martinsuo, 2022).

Greenwashing

Greenwashing is the exaggeration or fabrication of environmental claims and has become an obstacle to the sustainability of projects. Lyon and Maxwell (2011) claim that this practice not only erodes public trust but also distorts market competition, undermining collective efforts to achieve environmental goals. A study highlights the need for systemic reforms, including standardizing certification systems and improving decision-making tools, to mitigate the pervasive impact of greenwashing and promote genuine corporate sustainability (Delmas & Burbano, 2011). Therefore, measures to address greenwashing are necessary to promote sustainable development and stimulate the circular economy.

Despite their expertise, those responsible for managing EU-funded projects no longer have the tools they need to critically assess certifications, especially when faced with non-standardized or overlapping eco-labels. This vulnerability highlights the need for transparent, standardized certifications and clear decision-making tools to truly promote a circular economy.

Greenwashing is discussed from the perspective of activities that mislead customers; hence, the definition formulated by de Freitas Netto et al. (2020): "the act of misleading consumers about an organization's environmental practices or the environmental benefits of a product or service". Consequently, greenwashing is a deliberate action (Mitchell & Ramey, 2011) and intentional fraud (Lyon & Maxwell, 2011). Thus, managers and decision-makers have limited tools to effectively address and combat the phenomenon of greenwashing (Delmas & Burbano, 2011). To illustrate, sustainable investments are usually evaluated based on environmental, social, and governance (ESG) scores (Dumitrescu et al., 2022). In the absence of a clear definition of sustainable investments, assessing the extent of greenwashing becomes difficult (Dumitrescu et al., 2022). Hence, government financial support instruments are of major importance for greening the industry and promoting sustainable growth.

Public administration

Given that local public administration authorities are faced with new concepts that they must integrate into the development of project proposals and, subsequently, in the implementation of projects benefiting from European funding, there is a clear need to increase the administrative capacity of local public authorities to implement the DNSH principle, to monitor the long-term effects of integrated climate adaptation measures to increase the resilience of public infrastructure to climate change and its effects.

There are relatively few sources in the literature that analyze the implementation of DNSH in EU-funded projects, whereas the literature focuses on its financial impact. (De Vincenti, 2022; Hummel & Bauernhofer, 2024). According to a detailed analysis of the integration of DNSH into EU funding instruments (Beltran Miralles et al., 2023), three major areas for improvement related to the implementation of the DNSH principle have been identified as priorities: simplifying implementation, reducing administrative effort, and maximizing the principle's contribution to achieving the Union's climate and environmental objectives.

Although it is often perceived as just another EU bureaucratic requirement, implementing the DNSH principle is an opportunity to raise public administrations' awareness of the importance of adopting and integrating community-relevant environmental objectives into these investments. The obligations related to implementing the principle can increase the environmental literacy of public officials involved in local-level investment project development and help integrate environmental objectives from the initial stages of project development. This outcome should be achieved through concrete actions to support local public administration like 1) training and education activities in the field of new concepts such as DNSH or climate-proofing of infrastructure, 2) the development of simplified tools for assessing the environmental impact of projects, in line with DNSH, but also integrating national legislative standards and measures that ensure compliance with DNSH, and 3) support for the integration of DNSH into local development strategies, linking investments to environmental objectives relevant to the community.

Although the literature suggests the need for sustainable projects, there remains a gap in research on integrating environmental, social, and governance (ESG) factors, as well as on measurement, monitoring, and reporting practices. (Glass, 2012). This paper aims to fill this gap with an integrated vision that combines management theory with applicable sustainability requirements.

Research problems and questions

RPQ1: The ability of executive management to understand, interpret, and implement the DNSH principle varies greatly. The DNSH principle thus reveals a gap in organizational skills and culture, necessitating new professional profiles and management practices in the public sector.

RPQ2: The lack of integrated national strategic management strategies for implementing the Do No Significant Harm (DNSH) principle, which would set clear objectives, quantifiable indicators, and institutional responsibilities for interministerial coordination and monitoring.

RQ1: How are DNSH principles and criteria perceived and subsequently implemented in publicly funded projects? What intrinsic and extrinsic organizational factors facilitate or hinder DNSH compliance? Can the DNSH criteria reshape institutional behavior to promote professionalization?

RQ2: How have local and central public institutions integrated the DNSH principle into their decision-making processes? What centralized governance mechanisms and management practices support the implementation of DNSH in publicly funded projects?

Snyder affirmed that the literature review is the foundation of any research endeavor, as it gathers and presents information on specific research questions. (2019).

Methodology

There are four approaches to conducting a literature review: 'narrative', 'integrative', 'systematic', and 'scoping' (Pare et al., 2015; Snyder, 2019). According to Wright et al. (2007), systematic reviews are "a review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyze data from the studies that are included in the review" (2007). The narrative literature review is one of the primary forms of literature review (Cipriani & Geddes, 2003; Greenhalgh et al., 2018). Narrative literature reviews are important because they give researchers an overview of relevant literature (Rother, 2007; Turnbull et al., 2021a). Narrative literature reviews summarise previously published research studies, help avoid duplication, and identify new research gaps (Cronin, 2008). At the same time, narrative literature reviews are more likely to introduce bias, as they may include only studies selected by the authors (Montori, 2003).

A sound literature review provides a basis for further theoretical development (Webster & Watson, 2002). Journal articles should be the core of a literature review after a deep search of the literature. (Rowley & Slack 2004). The relevant search keywords and their alternative spellings stem from the research question (Xiao & Watson, 2019). According to Green, key concepts are transformed into keywords by selecting only the most distinctive terms (2006). Then, the use of the Boolean operator AND will find articles with all the keywords, while OR will include articles with at least one keyword. On the other hand, NOT will ignore specific outputs in the search strategy.

A literature review was conducted for the present research via an electronic search of databases such as ScienceDirect, Elsevier, Web of Science, and Google Scholar, using the following search terms: 'DNSH', 'Do No Significant Harm', 'Public Administration', and 'Project Management'. Boolean search strings, including operators such as AND, OR, and NOT, were used to obtain more focused results. The inclusion criteria were: articles with an available abstract, published in English and Italian, between 2021 and 2025. The elimination of articles was based on a careful assessment of their abstract and conclusions to determine their relevance to the research questions. (Linnenluecke et al., 2020). From this pool of articles, more relevant references were identified while browsing the information. Usually, a backward search of each article helped in finding cited articles and authors from the reference list. (Xiao & Watson, 2019). The comprehensive literature search took place before September 2025.

Results and discussion

Numerous theories suggest that sustainability and economic growth can coexist and that activities that "contribute substantially" to one or more environmental objectives are essential to support the transition to sustainable development. These theories will be analyzed and developed in this research to identify and

examine concrete evidence in support of the idea that adopting circular practices can bring quantifiable benefits.

The presumed contributions should reflect the following: first, how DNSH regulatory principles can reshape institutional behaviour at the level of local public institutions; then, mapping the intrinsic and extrinsic factors that influence DNSH implementation; thirdly, showing that implementing the DNSH principle is becoming a governance tool in sustainability and environmental policies; also, identifying best practices in institutional management for the effective implementation of DNSH compliance and introducing the concept of DNSH professionalisation in the public sector; fifth, identifying competency frameworks and training needs for public officials managing DNSH, and last but not least, supporting public administration in integrating sustainability specialists (recommending a new occupational standard) in order to comply with sustainability principles and formulating recommendations for improving administrative capacity in the shift to a green economy.

This paper allows the researcher to identify: the possibility of maximising the effects for environmental objectives; the manner in which local public authorities in Romania can ensure that environmental objectives are achieved at the local level; methods to train civil servants to be able to strategically integrate relevant environmental objectives into investment projects, not just for administrative compliance; ways to help reduce the administrative burden on beneficiaries in implementing the requirements; instruments to facilitate the monitoring of results achievement.

In particular, this research proposal will empirically analyze how institutional capacity effectively relates to the success of sustainable DNSH-related projects in Romania. Consequently, the findings will highlight key factors in the organizational ecosystem and propose solutions to prevent public investments from being diverted from their social and environmental objectives, analyzing the direct link between the ease of applying the DNSH principle and, for example, the ability of public institutions to promote staff specialization in publicly funded projects.

This research effort has some known limitations. First, the limited access to administrative data or confidential documents will require institutional partnerships and collaboration agreements. Then, the limited staff input will be mitigated through confidentiality and clear communication. Third, the possible legislative changes that may affect the study will be tackled by adapting to the updated context. Last but not least, the reduced availability of participants for interviews will be minimized with flexible and concise sessions previously scheduled.

Conclusion

At a later stage, this research will include two sections in the methodological design:

1. A qualitative research study, in which 30 managers will be interviewed to gain an in-depth understanding of their perceptions and highlight the current situation regarding the application of DNSH. The sampling of managers will not be random, and the sample will be selected fairly, ensuring that both genders are represented and that it is representative of urban/rural environments, as well as of the central/local criterion.
2. A quantitative study will be conducted with 120 managers using a survey tool. Also, the sample will be drawn from various organizations, and questionnaires will be used to complete the analysis of data from public sources.

The findings of this paper could prompt managers implementing investment projects to pay greater attention to the intrinsic and extrinsic factors that hinder or facilitate DNSH compliance, as well as to the training needs of public officials responsible for managing DNSH compliance. Given that the government's efforts to fight against the effects of climate change are already impacting economic operators, with applicable measures being strategic and mandatory in nature, stakeholders interested in accessing and implementing projects with non-reimbursable funding can directly benefit from the findings derived from this research, regarding the institutional behaviour at the level of local public institutions, the best practices in institutional management for the effective implementation of DNSH compliance and the recommendations for improving DNSH related administrative capacity. Local public authorities, economic operators, civil society representatives, and professional associations can obtain instruments designed to reduce the impact of the DNSH principle and circular practices.

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References

- Andersen, E. S., Birchall, D., Jessen, S. A., & Money, A. H. (2006). Exploring project success. *Baltic Journal of Management*, 1(2), 127–147. <https://doi.org/10.1108/17465260610663854>
- Beltran Miralles, M., Gourdon, T., Seigneur, I., Arranz Padilla, M., & Pickard Garcia, N. (2023). *The implementation of the “Do No Significant Harm” principle in selected EU instruments* (JRC135691). Joint Research Centre.
- Boyatzis, R. E. (1991). *The competent manager: A model for effective performance*. John Wiley & Sons.
- Busu, M. (2019). Adopting circular economy at the European Union level and its impact on economic growth. *Social Sciences*, 8(5), 159. <https://doi.org/10.3390/socsci8050159>
- Carvalho, M. M., & Rabechini Jr, R. (2017). Can project sustainability management impact project success? An empirical study applying a contingent approach. *International Journal of Project Management*, 35(6), 1120–1132. <https://doi.org/10.1016/j.ijproman.2017.02.018>
- Ciornei, I. (2022). Despre taxonomia UE și principiul DNSH – „Do No Significant Harm”. *Bucovina Forestieră*, 22(2), 167–195. <https://doi.org/10.4316/bf.2022.020>
- Cipriani, A., & Geddes, J. (2003). Comparison of systematic and narrative reviews: The example of the atypical antipsychotics. *Epidemiology and Psychiatric Sciences*, 12(3), 146–153.
- Cronin, P., Ryan, F., & Coughlan, M. (2008). Undertaking a literature review: A step-by-step approach. *British Journal of Nursing*, 17(1), 38–43. <https://doi.org/10.12968/bjon.2008.17.1.28059>
- de Freitas Netto, S. V., Sobral, M. F. F., Ribeiro, A. R. B., & Soares, G. R. D. L. (2020). Concepts and forms of greenwashing: A systematic review. *Environmental Sciences Europe*, 32(1), 19. <https://doi.org/10.1186/s12302-020-0300-3>
- De Vincenti, C. (2022). Green investments: Two possible interpretations of the “Do No Significant Harm” principle.
- Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, 54(1), 64–87. <https://doi.org/10.1525/cmr.2011.54.1.64>
- Dumitrescu, A., Gil-Bazo, J., & Zhou, F. (2022). *Defining greenwashing*. SSRN. <https://doi.org/10.2139/ssrn.4098411>
- Eccles, R. G., & Krzus, M. P. (2014). *The integrated reporting movement: Meaning, momentum, motives, and materiality*. John Wiley & Sons.
- Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60(11), 2835–2857. <https://doi.org/10.1287/mnsc.2014.1984>
- Ghiga, C., & Bulearca, M. (2009). Sustainable development and environmental protection: New approaches are practical and conceptual.
- Glass, J. (2012). The state of sustainability reporting in the construction sector. *Smart and Sustainable Built Environment*, 1(1), 87–104. <https://doi.org/10.1108/20466091211227070>
- Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: Secrets of the trade. *Journal of Chiropractic Medicine*, 5(3), 101–117. [https://doi.org/10.1016/S0899-3467\(07\)60142-6](https://doi.org/10.1016/S0899-3467(07)60142-6)
- Greenhalgh, T., Thorne, S., & Malterud, K. (2018). Time to challenge the spurious hierarchy of systematic over narrative reviews? *European Journal of Clinical Investigation*, 48(6), e12931. <https://doi.org/10.1111/eci.12931>
- Hanna, A. S., Ibrahim, M. W., Lotfallah, W., Iskandar, K. A., & Russell, J. S. (2016). Modeling project manager competency: An integrated mathematical approach. *Journal of Construction Engineering and Management*, 142(8), 04016029. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001131](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001131)
- Hummel, K., & Bauernhofer, K. (2024). Consequences of sustainability reporting mandates: Evidence from the EU taxonomy regulation. *Accounting Forum*, 48(3), 374–400.
- International Project Management Association. (2015). *Individual competence baseline for project, programme and portfolio management* (Version 4.0).
- Linnenluecke, M. K., Marrone, M., & Singh, A. K. (2020). Conducting systematic literature reviews and bibliometric analyses. *Australian Journal of Management*, 45(2), 175–194. <https://doi.org/10.1177/0312896219877678>
- Lyon, T. P., & Maxwell, J. W. (2011). Greenwash: Corporate environmental disclosure under threat of audit. *Journal of Economics & Management Strategy*, 20(1), 3–41. <https://doi.org/10.1111/j.1530-9134.2010.00282.x>
- Marinescu, A. O. (2020). Assessment of the environmental reporting practices of the companies indexed in the GRI database. *New Trends in Sustainable Business and Consumption*, 634.
- Martinsuo, M., Teerikangas, S., Stensaker, I., & Meredith, J. (2022). Managing strategic projects and programs in and between organisations. *International Journal of Project Management*, 40(5), 499–504. <https://doi.org/10.1016/j.ijproman.2022.03.004>
- Mitchell, L. D., & Ramey, W. D. (2011). Look how green I am! An individual-level explanation for greenwashing. *Journal of Applied Business and Economics*, 12(6), 40–45.
- Montori, V. M., Swiontkowski, M. F., & Cook, D. J. (2003). Methodologic issues in systematic reviews and meta-analyses. *Clinical Orthopaedics and Related Research*, 413, 43–54.
- Müller, R., & Turner, J. R. (2010). Attitudes and leadership competences for project success. *Baltic Journal of Management*, 5(3), 307–329. <https://doi.org/10.1108/17465261011079730>

- Paré, G., Trudel, M. C., Jaana, M., & Kitsiou, S. (2015). Synthesizing information systems knowledge: A typology of literature reviews. *Information & Management*, 52(2), 183–199. <https://doi.org/10.1016/j.im.2014.08.008>
- Porter, M. E., & Reinhardt, F. (2007). A strategic approach to climate. *Harvard Business Review*, 85(10).
- Rother, E. T. (2007). Systematic literature review X narrative review. *Acta Paulista de Enfermagem*, 20, v–vi. <https://doi.org/10.1590/S0103-21002007000100001>
- Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management Research News*, 27(6), 31–39. <https://doi.org/10.1108/01409170410784185>
- Segalàs, J., Ferrer-Balas, D., & Mulder, K. F. (2010). What do engineering students learn in sustainability courses? *Journal of Cleaner Production*, 18(3), 275–284. <https://doi.org/10.1016/j.jclepro.2009.09.012>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Stahel, W. (2019). *The circular economy: A user's guide*. Routledge.
- Suciu, R. (2024). Implementarea principiului DNSH în România: Oportunități și provocări pentru administrația publică. *Revista Transilvană de Științe Administrative*, 26(54), 194–215.
- The 2030 Agenda for Sustainable Development. (n.d.). United Nations. <https://sdgs.un.org/2030agenda>
- Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure, and process*. Oxford University Press.
- Thürer, M., Tomašević, I., Stevenson, M., Qu, T., & Huisinigh, D. (2018). A systematic review of integrating sustainability into engineering curricula. *Journal of Cleaner Production*, 181, 608–617. <https://doi.org/10.1016/j.jclepro.2018.01.151>
- Turnbull, D., Chugh, R., & Luck, J. (2021). The use of case study design in learning management system research: A label of convenience? *International Journal of Qualitative Methods*, 20, 16094069211004148. <https://doi.org/10.1177/16094069211004148>
- Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26(2), xiii–xxiii.
- Wright, R. W., Brand, R. A., Dunn, W., & Spindler, K. P. (2007). How to write a systematic review. *Clinical Orthopaedics and Related Research*, 455, 23–29. <https://doi.org/10.1097/BLO.0b013e31802c9098>
- Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93–112. <https://doi.org/10.1177/0739456X17723971>

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