

Sustainability: Challenges, Opportunities, and the Environmental Responsibility

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Abstract

Sustainability has evolved into an integral component of various life domains, wherein every action and behaviour exert an influence on sustainability and consequently impact on our environment. Paradoxically, sustainability encounters challenges emanating from the initial costs of sustainable practices, regulatory complexities, and societal opposition. The intricate equilibrium between economic efficiency and sustainable principles emerges as a pivotal theme encapsulating the dynamic interplay of multifaceted factors. The primary objective of this work is to determine the influence of economic, social, and ecological factors have on sustainability as a holistic entity. This is realized through a meticulous analysis of the term 'sustainability', illuminating its relevance. Subsequently, the influencing factors are examined, revealing their connections to sustainability. An extensive literature search is undertaken to harness sources, and the resultant findings are subjected to further refinement. The outcomes and discussions address economic assessments and social aspects, unravelling the complexities that delineate the path toward sustainability. The conclusion underscores the strategic necessity of sustainability, emphasizing its role in ensuring long-term resilience, societal well-being, and environmental safeguarding. Furthermore, it offers not only academic insights but also actionable guidance for stakeholders navigating the dynamic landscape of sustainable development. This research posits the industry as a transformative force, propelling positive change towards a more resilient, inclusive and environmentally conscious future.

Keywords

Sustainability, environmental responsibility, sustainable business model, environmental certification, real estate sector

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Introduction

In an era marked by global apprehensions regarding climate change, resource depletion, and societal well-being, real estate companies find themselves in a unique position (Backenroth and Magnusson, 2023). This study delves into the sustainability of real estate development, unravelling the complicated web of economic, social, and ecological considerations. The imperative to incorporate sustainable practices within real estate companies is accentuated by the ever-increasing demand for responsible urban development and a commitment to environmental protection (Matemilola and Muraina, 2020). Through a comprehensive literature review, methodological rigor, and the synthesis of results, this research aims to bridge theoretical insights with practical applications, shedding light on the opportunities and challenges shaping sustainable real estate development. As the global community grapples with the necessity to foster resilient, inclusive, and environmentally conscious communities (Goubran et al., 2019), this study contributes to the ongoing discourse on transforming business into agents of positive change.

1. Review of the scientific literature

The literature draws upon a diverse reservoir of scholarly contributions, highlighting the intricate nature of sustainability within the real estate industry. Warren-Mayers (2012) emphasizes the significance of striking a delicate balance between economic return and environmental responsibility. This perspective posits that sustainable real estate development involves not only optimizing financial gains but also the mitigation of environmental impacts, ensuring the enduring success of projects and the broader ecosystem.

Moreover, Goubran et al. (2019) posit that social dimensions play a pivotal role in the sustainable development paradigm, asserting that real estate projects should enhance the quality of life within communities they serve. This viewpoint broadens the concept of sustainability beyond environmental considerations, encompassing the social fabric through the promotion of inclusivity, community engagement and cultural preservation. Running parallel to these viewpoints, Borrero-Domínguez et al. (2020) introduce the concept of resilience within the framework of sustainable real estate. They assert that projects should be intentionally designed to endure and adapt to evolving environmental and social conditions. This resilience-focused approach aligns with the overarching goal of sustainability guaranteeing that real estate developments maintain their robustness and relevance amidst changing challenges. In the broader context of corporate development and specifically within real estate companies, the literature collectively supports the notion that sustainability transcends a sole emphasis on profit margins (Matemilola and Muraina, 2020). It advocates for a comprehensive framework that integrates economic, social, and environmental considerations (Hiep et al., 2021). The objective of this study is realized through an initial analysis of the sustainability literature. This involves deconstructing the term "sustainability" into its fundamental components. Subsequently, the crucial objectives and their respective significance are derived from these foundational components. The initial phase of the study involves a comprehensive definition of sustainability.

Subsequently, a detailed examination of the influencing factors and their interconnections will be undertaken. Various forms of literature, including books, magazine articles, and essays, are utilized in our comprehensive analysis of sustainability. Our thorough engagement with sustainability literature forms a robust foundation for this study. (Backenroth and Magnusson, 2023). The literature review endeavors to pinpoint gaps within the existing body of knowledge, setting the stage for the introduction of a novel perspective and model in the subsequent sections of the paper. The concept of sustainable development was defined in 1987 by the World Commission on Environment and Development (Brundtland Commission): "Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs." (Friedrichsen 2018). The definition of sustainability functions as a fundamental cornerstone for comprehending the complex dynamics among economic advancement, social well-being, and environmental protection.

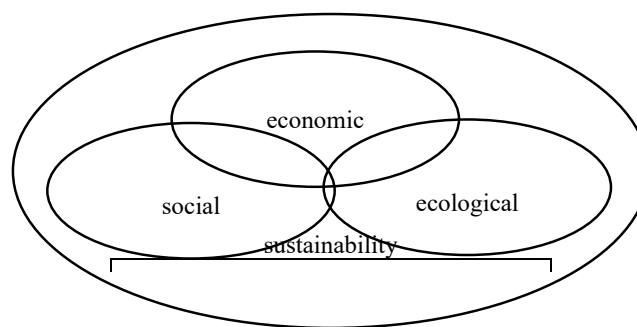


Figure no. 1. Essential components of sustainability

Source: Created by the author

In the discourse on sustainability, a nuanced examination of pertinent economic, social, and ecological facets is of inherently crucial for a comprehensive understanding. Economic considerations, as explained by scholars such as Kauko (2018, 2019), extend beyond the immediate financial gains linked to real estate projects. The literature underscores the significance of life cycle assessments, resource efficiency and the incorporation of sustainable technologies to optimize economic benefits while mitigating the ecological footprint. This perspective aligns with the overarching objective of sustainable development, aiming to

foster economic prosperity without compromising the well-being of future generations. In the social domain, Newell and Marzuki (2022) assert that successful real estate projects can instigate positive social transformations. This distinction is not merely about catering to the needs and preferences of diverse interest groups but, more importantly, actively contributing to the overall well-being of the community. Socially sustainable real estate development entails the establishment of inclusive spaces, the cultivation of a sense of community, and the recognition of cultural diversity. The literature underscores the central role of stakeholder engagement, ethical urban planning, and initiatives for affordable housing in advancing social justice within the real estate landscape. Devine et al. (2022) underscore that ecological considerations extend beyond conventional environmental impact assessments. Sustainable real estate development demands a comprehensive approach to environmental responsibility, encompassing aspects such as energy efficiency, waste reduction, and biodiversity conservation. Emerging concepts, including green building standards and green design principles, are gaining prominence in the literature, emphasizing the incorporation of sustainable practices that mitigate harm to ecosystems and enhance the overall health of the planet (Rogmans and Ghunaim, 2016). This synthesis of economic, social, and ecological perspectives underscores the interdisciplinary nature of sustainable real estate development. By processing the diverse literature opinions, it is concluded that achieving sustainability necessitates the following:

A balance between economic profitability, social responsibility, and ecological integrity (Warren-Mayers, 2012, Rogmans and Ghunaim, 2016, Kauko, 2019). In the subsequent sections, we will explore how these theoretical foundations materialize in practical strategies and

Table no. 1. Essential components: Sustainability

Essential components: Sustainability		
Economic	Environment	Social
(Autor: Kauko (2018, 2019))	(Autor: Devine et al. (2022))	(Autor: Newell and Marzuki (2022))

Source: Created by the author

Table no. 2. Subjects

Subjects		
High and stable economic growth and employment	-Protection of the environment -Conservation of resources	-Social progress -Needs of those involved

Source: Created by the author

Table no. 3. Main goals

Main goals		
-Higher productivity	-Less pollutants	-Equal opportunity
-Profit growth	-Waste minimization	-Employee satisfaction
-faster production	-No harmful materials	-Local suppliers
-Lower costs	-No harmful wastewater	-Work safety
-Satisfaction supplier	-Recycling	-Health
-Customer satisfaction	-Product life cycle	-Long-term relationships
-Added value in services and products	-Minimizing noise and dust	-Minimizing local annoyances and disruptions
	-Energy efficient, less energy	-Equal opportunity

Source: Akadiri et al. (2012), Kauko (2018), Devine et al. (2022) and Newell and Marzuki (2022)

2. Research methodology

This study delves into the concept of sustainability with the aim of pre-emptively addressing potential challenges at an early stage and leveraging every opportunity. The implications of sustainability must always be taken into account (Pitz et al., 2023). To compile the necessary and pertinent literature, a structured search was conducted in Scopus, and the existing literature was meticulously documented. The previously mentioned definition of sustainability yielded three distinct components or pillars of sustainability: ecology, economics, and social issues. A comprehensive review and analysis of the literature ensued, leading to the identification of detailed sustainability topics. Subsequently, the main objectives were systematically extracted from these overarching topics, providing a practical guide. To enhance clarity, a comparative table of the main objectives was constructed.

Having established a solid foundation through thorough research of the relevant literature and methodological rigor, the subsequent chapters are dedicated to exploring the practical dimensions of sustainability within the real estate industry. This section delves into the examination of strategies, opportunity-es, and

challenges associated with the implementation of sustainable practices in greater detail. The implementation of sustainable practices in the real estate sector unveils a spectrum of opportunities that transcend traditional development paradigms. Insights gleaned from carefully selected literature underscore that embracing sustainability can yield a multitude of benefits with far-reaching effects. Economic efficiency, a cornerstone in real estate, should be enhanced through cost-effective solutions and long-term savings. As highlighted by Goubran et al. (2019), the integration of energy-efficient technologies and green building practices not only diminishes operating costs but also enhances real estate marketability, appealing to an expanding demographic of environmentally conscious consumers.

Hiep et al. (2021, p. 5003) defines corporate sustainability as actions that increase economic growth and long-term profitability while simultaneously addressing the needs of stakeholders without depleting the resources of the local community and the environment. This strategy approach is encapsulated in a sustainable business model, shown in Figure #2, which includes CSR-oriented (Corporate Social Responsibility) and CES-oriented (Corporate Environmental Sustainability) components.

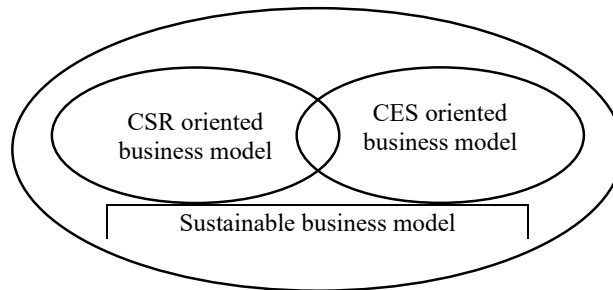


Figure no. 2. Sustainable business model
Source: Hiep et al. (2021)

From an environmental standpoint, sustainable practices present an opportunity to mitigate the environmental impact and enhance the value of real estate projects, as illustrated in Figure #3. By embracing innovative design, resource-efficient construction, and a dedication to green spaces, developers can contribute to the preservation of biodiversity and the reduction of the overall carbon footprint associated with their projects. This perspective aligns with the increasing global significance placed on sustainable development and climate protection goals (Backenroth and Magnusson, 2023).

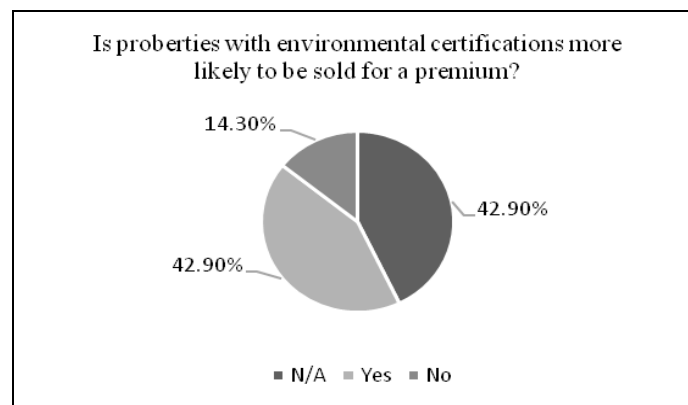


Figure no. 3. Opportunities of properties with environmental certifications
Source: Backenroth and Magnusson, (2023)

While the integration of sustainable practices into real estate development holds promise, it is not devoid of challenges, as evidenced by the literature (Newell and Marzuki, 2022; Dobrovolskiene et al., 2021). These challenges, often intricate and multi-faceted, underscore the complexity inherent in reshaping traditional real estate models (Kauko, 2018). A significant challenge lies in the economic domain, where the upfront costs associated with sustainable technologies and materials may act as a barrier to entry for developers. According to Warren-Myers (2021), the perception of high initial investments can discourage stakeholders from committing to sustainable initiatives, particularly when prioritizing short-term financial

gains. Regulatory and political challenges significantly influence the terrain of sustainable real estate development. Divergent and evolving regulations, as highlighted by Dobrovolskiene et al. (2021), introduce uncertainty for developers and impede the adoption of consistent sustainable practices. Ambiguities in building code and certification standards can pose compliance challenges, further adding complexity to an already intricate process. Social challenges also arise on the path emerge as significant hurdles on the journey toward a sustainable real estate. Resistance to change, divergent stakeholder interests, and the necessity for community buy-in present notable obstacles (Matemilola and Muraina, 2023). Kauko (2018) contends that community members might resist sustainable projects if they perceive them as disruptive to established norms or if the benefits are not effectively communicated. Bridging the gap between developers' aspirations and community expectations demands adept negotiation skills and the implementation of effective communication strategies.

Paradoxically, ecological challenges also come to the forefront. Despite the overarching objective of environmental sustainability, unintended consequences can surface, particularly when inadequate attention is given to the entire life cycle of a development. Goubran et al. (2019) caution about the potential for greenwashing – a scenario in which projects are promoted as sustainable but do not deliver substantial environmental benefits.

3. Results and discussion

Following a thorough investigation of the theoretical foundations, methodological approach, and practical dimensions of sustainability, the outcomes of this comprehensive study are presented in the subsequent chapter. This section aims to integrate the theoretical principles with practical application. The results of the literature research set the stage for a discussion concerning the opportunities and challenges associated with sustainability.

The examination of sustainable real estate projects reveals an interconnection between challenges and opportunities. From the synthesized literature, economic valuations emerge a central role in determining the feasibility and success of sustainable initiatives in real estate. Case studies, exemplified by works such as those presented by Newell and Marzuki (2022) or Backenroth and Magnusson (2023), under-score the potential economic advantages resulting from sustainable practices. Energy-efficient technologies and green building materials are highlighted for their capacity to yield long-term cost savings and increased market attractiveness. Nevertheless, the literature also outlines the challenges linked to this economic calculation. The initial capital investment required for sustainable features represents a significant barrier for developers, as emphasized by Matemilola and Muraina (2020). Their paper delves into the nuanced aspects of life cycle cost analysis, highlighting the complexities of balancing upfront costs with long-term profits. The results section illustrates how the economic viability of sustainable real estate projects hinges on a delicate balance in which financial considerations intersect with environmental and social needs. The subsequent discussion dissects these economic assessments and tackles the overarching question of whether integrating sustainable practices genuinely results in the long-term economic resilience of real estate companies (Borrero-Domínguez et al., 2020; Kauko, 2019). In this section, the paper endeavors to navigate the complicated interplay of economic factors and generate insights that contribute to a nuanced understanding of the economic dimension within the broader tapestry of sustainable real estate development. Analyzing the economics of sustainable real estate projects unveils a landscape intricately woven with both challenges and opportunities. Derived from the synthesized literature, economic valuations emerge as a central factor in determining the feasibility and success of sustainable initiatives in real estate. Case studies, exemplified by works such as those presented by Newell and Marzuki (2022) or Backenroth and Magnusson (2023), underscore the potential economic benefits arising from sustainable practices. Energy-efficient technologies and green building materials are highlighted for their capacity to yield long-term cost savings and enhance market attractiveness.

Nevertheless, the literature also outlines the challenges linked to this economic calculation. The initial capital investment needed for sustainable features poses a notable barrier for developers, as emphasized by Matemilola and Muraina (2020). Their paper delves into the nuanced aspects of life cycle cost analysis, highlighting the complexities of balancing upfront costs with long-term profits. The results section illustrates how the economic viability of sustainable real estate projects hinges on a delicate balance where financial considerations intersect with environmental and social needs. The subsequent discussion dissects these economic assessments and tackles the overarching question of whether integrating sustainable practices genuinely leads to long-term economic resilience of real estate companies (Borrero-Domínguez et al., 2020; Kauko, 2019). This section explains the interaction of economic factors to glean insights that contribute to a more nuanced understanding of sustainable real estate development.

Conclusions

In summary, this comprehensive exploration of sustainability in the real estate industry has shed light on a multifaceted landscape where economic, social, and environmental considerations intersect. The literature search served as a foundation, uncovering the theoretical foundations. The methodological rigor employed in the selection and analysis of sources laid the basis for a nuanced examination of opportunities, challenges, and sustainability in general. The results and discussions, scrutinizing the economic and social aspects of sustainable real estate projects, have unveiled a dynamic interplay of factors influencing the industry's development. Economic assessments showcased the potential for long-term gains but also underscored the challenges linked to initial capital investments. Social aspects demonstrated the transformative power of sustainable developments in fostering inclusive communities but also confronted the inherent resistance to change. Essentially, this paper contributes to the evolving discourse on sustainability by bridging theory and practice. The results inform academic discussion and offer actionable insights for practitioners, policymakers, and stakeholders invested with sustainable development within the real estate industry. As the industry continues to evolve, sustainability is not only becoming an environmental obligation but also a strategic imperative for long-term resilience, societal well-being, and environmental protection. This study serves as a springboard for further re-search into the economic impact of companies with a high and low sustainability factor.

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