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Article

# Perception of Sustainable Business Model Practices in Polish Enterprises: The Role of Organizational and Individual Characteristics

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## Abstract

The study aims to empirically analyze employees' perceptions of sustainable business model practices in Polish enterprises operating in the manufacturing, trade, and service sectors. The study is based on a three-dimensional model of sustainable development practices, encompassing the green economy, the social dimension, and employee development, whose structure was previously confirmed through factor analysis. The study involved 231 employees representing enterprises of various sizes, and the data were collected using a validated measurement instrument. Statistical analyses, including Kruskal–Wallis tests and linear regression models, revealed that employees rate initiatives related to employee development the highest, followed by social practices, while green economy initiatives receive the lowest evaluations. The perception of practices varies by industry and enterprise size, while seniority and position are of limited importance. The results highlight the differentiated perception of sustainability initiatives within organizations and indicate areas requiring strengthening, particularly regarding environmental actions. The article provides practical guidance for designing sustainability strategies and HR policies and also serves as a foundation for further research on employees' perceptions of sustainable development practices.

**Keywords:** sustainable business models; Triple Bottom Line (TBL); sustainable development; Polish enterprises; employee perception

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## 1. Introduction

Sustainable business models, increasingly recognized as a key element of enterprise management in the global market [1], have gained substantial attention in recent years within both management theory and managerial practice. This trend stems from increasing competitive pressure, rapidly changing conditions across numerous industries, and, consequently, the growing need to seek new ways of maintaining a market presence [2]. As guarantors of organizational survival, sustainable business models are of importance not only for commercial and social enterprises but also for non-profit organizations. Contemporary sustainable business models, as well as pathways leading to sustainable development, demonstrate that the study and advancement of sustainable business models are essential in both theory and practice.

The literature identifies eight sustainable business models, along with two additional ones, the regulatory and advisory role assumption model and the model of reorientation toward society and

the environment, which constitute important reference points in research on sustainable development [3].

Although social and environmental issues have attracted researchers' interest since the 1960s, there are still no well-established theoretical foundations within economics and management sciences; moreover, a lack of clarity, conceptual consensus, and consistency in the use of the term sustainable business models persists [4]. There is also no agreement regarding the definition, categorization, and boundaries of this concept [5]. Nevertheless, the need to develop such models is widely acknowledged due to their significance for organizational sustainability. A study conducted by S. Schaltegger, G. Hansen, and F. Lüdeke-Freund [6] demonstrated that enterprises adopting sustainable practices generally achieved better financial performance than those that did not. Furthermore, a literature review conducted by M. D. T. de Jong, K. M. Harkink, and S. Barths [7] found that enterprises implementing sustainable practices experienced a lower cost of capital and demonstrated greater ability to attract and retain both customers and employees. The literature also emphasizes that the development of sustainable business models can have a positive impact on the competitiveness of international companies [8]. The adoption of sustainable business models enables enterprises not only to survive but also to gain a competitive advantage and achieve their intended business objectives. For sustainable business models to fulfill their core function, namely, increasing profit and creating value, they must be continuously improved and adapted to the enterprise's changing environment. In organizational practice, one of the most commonly used tools for operationalizing sustainable business models is the Triple Bottom Line (TBL) concept, which allows enterprises to assess their activities across three key dimensions: economic, social, and environmental.

The research problem addressed in this article involves analyzing the perception of sustainable development initiatives among employees of 231 Polish enterprises of large, medium, and small size, operating in the manufacturing, trade, and service sectors. This analysis allows for determining how employees perceive the extent to which sustainable business practices are implemented in their organizations. In this study, these practices were operationalized using an empirically validated, three-dimensional model of sustainable business model practices, encompassing the dimensions of the green economy, social responsibility, and employee development [9].

The study aims to empirically analyze the perceptions of three dimensions of sustainable business model practices among employees of Polish enterprises and to identify differences in these evaluations due to organizational and individual characteristics.

The article is divided into six sections. The first section is dedicated to introducing the issue of sustainable business models and presenting the context and aim of the study. The second section presents the theoretical framework, which includes a discussion of the concept of sustainable business models and the three TBL dimensions, as well as the basis for operationalizing the construct, drawing on previous analyses that confirmed the three-dimensional structure of sustainable business model practices in Polish enterprises and the research questions derived from them. The third section presents the research methodology, including the sample characteristics, the instrument employed, and the data analysis methods. The fourth section provides the results of the empirical analyses. The fifth section presents a discussion of the results, while the final section addresses practical implications, limitations, and directions for future research.

## 2. Theoretical Framework

Sustainable business models are often defined as models that, in the long term, involve proactive management of value creation - both financial and non-financial - for various stakeholder groups [10]. Empirical findings by A. Rudnicka [11], allow them to be interpreted as a systemic concept that enables the satisfaction of both current and future needs of all market participants.

The concept of networks also appears in studies on sustainable business models [12,13]. According to this perspective, analyses limited to the business model of individual enterprises are

unable to capture this important feature, as many breakthrough achievements in sustainable development result from collaboration among various actors and organizations [1].

Traditional enterprises are established to generate profits, create value, meet stakeholder expectations, and satisfy customer needs. In contrast, the perspective of sustainable business models enables a holistic view of how business is conducted. As ideal types, these models [14]:

- draw on economic, environmental, and social aspects of sustainable development when defining organizational goals,
- apply a triple bottom line approach in measuring the outcomes of their activities,
- consider the needs of all stakeholders without prioritizing shareholder expectations,
- treat nature as a stakeholder, and
- promote environmental management by adopting an enterprise-wide perspective.

To define the term sustainable business models, many researchers rely on the three-pillar Triple Bottom Line (TBL) concept [15–17]. The TBL framework assesses a company's engagement in economic, environmental, and social responsibility. D. Dunphy [18] argues that, to develop sustainable business models, enterprises must engage in the development and protection of the society, natural environment, and economy in which they operate. At the same time, there is increasing pressure on enterprises to minimize their negative environmental impact and contribute to sustainable value creation, understood as value that benefits both the natural environment and external stakeholders [19]. According to the fundamental principle of business sustainability, enterprises should create value not only from an economic perspective but also from social and environmental perspectives (Lozano, 2015). If a company does not engage in all three areas, it cannot be considered to operate sustainably [20].

#### Economic Dimension

According to the TBL concept, a sustainable enterprise should aim for the long-term achievement of economic outcomes that enable stable organizational development [21,22]. The economic dimension thus encompasses the enterprise's ability to generate economic value over the long term, considering the efficiency of resource utilization and its impact on the economic environment [15,23,24].

#### Social Dimension

A socially sustainable enterprise, according to the TBL concept, applies fair business practices in the areas of labor, human capital, and relationships with the local community, considering the principles of social justice [25]. As S. Nursimloo, D. Ramdhony, and O. Mooneeapen [26] indicate, the social dimension relates to activities that benefit both employees and the broader society. By implementing responsible social practices, enterprises create value for both internal and external stakeholders, strengthening social capital and the quality of relationships with their environment [23,27].

#### Environmental Dimension

The environmental dimension refers to the impact of an enterprise's activities on the natural environment and to the adoption of practices that do not threaten resource availability for future generations [21,28]. Its primary goal is to minimize the negative effects of business operations on the environment, which includes, among others, combating climate change, protecting natural resources, reducing environmental degradation, and managing the enterprise's ecological footprint [26,29].

The TBL concept integrates the environmental dimension with the economic and social dimensions as equivalent elements of a unified framework for managing sustainable development, embedded in organizational strategies, policies, and practices [23,30–32].

The classical TBL concept serves as the reference point for the conceptualization presented in this study, while the operationalization of the examined dimensions is based on an authorial measurement tool [9]. It should be emphasized, however, that although TBL provided the starting point for the development of the tool, the empirically derived factor structure does not simply reflect the three classical TBL dimensions. Factor analysis confirmed the three-dimensional nature of the construct, with the extracted dimensions comprising: the green economy dimension, integrating

environmental aspects and economic efficiency; the social dimension; and the employee development dimension. This represents a partial reconceptualization of the original TBL assumptions at the operational level. The research focuses on employees' perceptions of these dimensions across companies of varying sizes and sectors, considering the influence of individual respondent characteristics, such as seniority and position.

Previous research indicates that the assessment of the implementation of environmental, social, and employee-focused practices in enterprises may vary depending on organizational characteristics and employee profiles.

Research on sectoral differences indicates that the scope and visibility of sustainable development activities depend on the sector characteristics. The literature emphasizes, among other things, that manufacturing enterprises more frequently implement environmental initiatives, while the service sector is characterized by lower transparency in ecological activities, and the trade sector faces cost pressures that limit social initiatives [33–36].

Research also indicates that large enterprises more frequently implement formalized CSR strategies and possess greater resources, whereas SMEs conduct sustainable development initiatives less formally and visibly [37–39]. Medium-sized enterprises occupy an intermediate position - they have the resources to engage in CSR activities but are subject to lower regulatory pressure [40].

Research on work experience indicates that employees with longer seniority tend to exhibit greater skepticism toward organizational changes and higher awareness of the costs and constraints associated with sustainable development, whereas those with shorter seniority more often report higher enthusiasm for CSR initiatives [41,42].

Research also shows that managers tend to evaluate CSR activities more positively, whereas operational employees may perceive them as a burden or a cost. These differences stem, among other factors, from variations in the scope of responsibilities and access to information about sustainable development practices [43–45].

The literature review allows for the formulation of questions regarding the level and differences in the perception of sustainable development practices depending on organizational and individual employee characteristics. Based on these assumptions, the following research questions were formulated:

1. How do employees of Polish enterprises assess the three dimensions of sustainable development practices identified in the authorial model based on the TBL concept?
2. Does the perception of these dimensions differ depending on enterprise size?
3. Does the industry influence the evaluation of the individual dimensions?
4. Do seniority and position affect the assessment of the individual dimensions?

### 3. Materials and Methods

To empirically verify the adopted research model, a quantitative study was conducted involving employees of Polish enterprises. Below, the sample characteristics, the instrument used, and the analytical model, along with the data analysis methods, are presented.

#### 3.1. Research Sample

A total of 231 employees, representing an equal number of enterprises operating in Poland, participated in the study. The respondents came from companies operating in three main economic sectors: manufacturing, trade, and services. Participants differed both in terms of the characteristics of the organizations in which they work and their own professional profiles. Such a diverse sample structure allows for the analysis of perceptions of sustainable development practices at the individual level and the identification of potential differences between employee groups. The characteristics of the research sample are presented in Table 1.

**Table 1.** Characteristics of the Research Sample.

Variable category	Variable level	Number	Percentage
Industry	Manufacturing	65	28.14
	Trade	60	25.97
	Services	106	45.89
Enterprise size	Small (up to 49 employees)	84	36.36
	Medium-sized (50–249 employees)	87	37.66
	Large (250+ employees)	60	25.97
Seniority	Up to 1 year	8	3.46
	1–5 years	69	29.87
	6–10 years	61	26.41
	Over 10 years	93	40.26
Position	Top-level (CEO, board member, director)	110	47.62
	Middle-level management positions (manager, department head)	121	52.38

Source: Author's own compilation.

Based on this characterized sample, subsequent stages of the analysis were conducted.

### 3.2. Research Procedure

The study was conducted in the form of an online survey. Data collection was conducted by the research agency Ariadna, ensuring access to respondents representing enterprises of various sizes and business profiles. The data used in this article come from the same measurement, the methodology of which is described in detail in B. Mazur, A. Walczyna and W. Wilczewska [9].

Participation in the study was voluntary and anonymous, and participants were informed about the purpose of the research and the principles of data processing.

### 3.3. Research Tool

The study employed a questionnaire designed to assess sustainable development practices implemented in enterprises, the construction and psychometric properties of which are described in detail in Mazur, Walczyna, and Wilczewska (2024). The instrument consists of 21 items relating to three empirically identified dimensions of sustainable development:

1. Green Economy – 11 items addressing environmental issues while also considering the economic aspects of enterprise activities, combining economic efficiency with environmental responsibility.
2. Social Dimension – 8 items referring to employee-related practices, considering their diversity, aspects of equality, and pro-environmental attitudes.
3. Employee Development – 2 items focusing on opportunities for personal and professional growth of employees.

Responses were provided on a seven-point Likert scale, where 1 indicated „strongly disagree“, and 7 indicated „strongly agree.“

In the analyses, respondents' answers were treated as a reflection of their individual perceptions of the extent to which specific sustainable development practices were implemented in the enterprises they represented. Statistical analyses confirmed the very high reliability of the instrument ( $\alpha = 0.97$ ).

The questionnaire also included questions regarding the industry and the company size, as well as respondents' seniority and position. Including these variables allowed them to be subsequently used as predictors in analyses of group differences and in linear regression models.

### 3.4. Analytical Model and Data Analysis Methods

The purpose of the analyses was to empirically examine how employees of Polish enterprises perceive sustainable development practices across the three analyzed dimensions, and how selected company characteristics and respondents' professional profiles influence this perception. Each dimension was treated as a separate dependent variable.

The model included four independent variables: enterprise industry (manufacturing, trade, services), enterprise size (small, medium, large), seniority (up to 1 year, 1–5 years, 6–10 years, over 10 years), and position. The position variable was coded dichotomously, distinguishing top-level positions (CEO, board member, director) from middle-level management positions (manager, department head). This division reflects differences in the scope of strategic responsibility and access to information about sustainable development practices.

The analyses were conducted in two stages. In the first stage, non-parametric Kruskal–Wallis tests were applied to identify group differences across the three empirically identified dimensions. In cases of significant results, Dunn's post-hoc tests with Bonferroni correction were performed to determine which groups differed from each other.

In the second stage, three linear regression models were estimated, with the dependent variables being, respectively, the green economy, social, and employee development dimensions. These models allowed for the assessment of the direction and strength of the influence of individual predictors while controlling for the other variables. This two-pronged approach provided a more comprehensive understanding of the relationships between company characteristics, respondents' professional profiles, and perceptions of sustainable development practices.

## 4. Results

### 4.1. Assessment of Perceptions of the Three Dimensions of the Sustainable Business Model

Descriptive statistics for perceptions of the three dimensions of the sustainable business model are presented in Table 2.

**Table 2.** Descriptive Statistics of Perceptions of the Three Dimensions of the Sustainable Business Model.

Dimension	Min	Max	Mean	Median	Standard Deviation
Green Economy	1	7	4.241	4.036	1.350
Social Dimension	1	7	4.922	4.875	0.983
Employee Development	1	7	4.963	5.000	1.200

Source: Author's own compilation.

The descriptive statistics indicate that employees differentiate the level of evaluation across the individual dimensions of sustainable development, and their perceptions are not homogeneous.

The green economy dimension received an average score of 4.24 (median = 4.04), indicating that employees perceive practices related to this dimension as moderately positive, slightly above the neutral level. The standard deviation of 1.35 reflects a moderate variability in responses, suggesting that employees' opinions in this area are more diverse than in the other dimensions.

The social dimension was rated noticeably higher, with a mean score of 4.92 and a median of 4.88. This indicates that the majority of employees perceive the social practices implemented by enterprises as positive. The relatively low standard deviation (0.98) suggests a high level of consistency in the assessments, indicating that employees share similar experiences and observations regarding this dimension.

Employee development received the highest ratings among the three analyzed dimensions (mean = 4.96; median = 5.00). These results indicate that employees evaluate initiatives related to opportunities for personal development particularly positively. The standard deviation of 1.20

reflects a moderate level of variability in responses, suggesting that despite the generally favorable assessment, some differences in individual employee experiences are present.

In summary, employees rate initiatives related to employee development the highest, followed by social practices, while activities associated with the green economy receive the lowest evaluations. The observed differentiation in assessment levels justifies further analysis of organizational and individual factors influencing the perception of sustainable development practices.

#### 4.2. Differences Between Groups: Results of the Kruskal–Wallis Tests

##### 4.2.1. Green Economy

The analysis revealed statistically significant differences in the assessment of the green economy dimension among employees working in different sectors ( $\chi^2 = 6.23$ ,  $df = 2$ ,  $p = 0.044$ ). Post-hoc Dunn's test indicated that employees of service enterprises rated this dimension significantly lower than those employed in the manufacturing sector ( $p = 0.044$ ). Differences between employees in the manufacturing and trade sectors, as well as between the trade and service sectors, were not statistically significant.

Statistically significant differences in the assessment of the green economy dimension were also observed among employees working in enterprises of different sizes ( $\chi^2 = 7.60$ ,  $df = 2$ ,  $p = 0.022$ ). Post-hoc analysis showed that employees of medium-sized enterprises rated the green economy dimension significantly higher than employees of small companies ( $p = 0.030$ ), while the remaining comparisons were not statistically significant.

The assessments of the green economy dimension did not differ significantly across groups with different lengths of work experience ( $\chi^2 = 7.14$ ,  $df = 3$ ,  $p = 0.068$ ), however, a tendency was observed, indicating that employees with 6–10 years of seniority rated this dimension slightly lower than those with shorter work experience ( $p = 0.080$ ). The job position did not significantly differentiate the assessments.

##### 4.2.2. Social Dimension

For the social dimension, significant differences in assessments were observed only among employees working in enterprises from different sectors ( $\chi^2 = 8.09$ ,  $df = 2$ ,  $p = 0.01753$ ).

Enterprise size ( $p = 0.668$ ), seniority ( $p = 0.452$ ) and job position ( $p = 0.942$ ) did not have a significant effect on employees' assessments of this dimension.

##### 4.2.3. Employee Development

For the employee development dimension, no significant differences were found in assessments between employees working in enterprises from different sectors ( $p = 0.261$ ) or between employees with varying lengths of work experience ( $p = 0.995$ ). Enterprise size showed only a tendency to differentiate evaluations ( $\chi^2 = 5.63$ ,  $df = 2$ ,  $p = 0.060$ ). Dunn's test indicated that employees of large enterprises rated this dimension slightly higher than those in medium-sized companies, although this difference was only marginally significant ( $p = 0.053$ ).

#### 4.3. Predictors of Perceptions of the Three Dimensions of a Sustainable Business Model – Linear Regression Models

To assess the impact of organizational and individual variables while controlling for the remaining predictors, three linear regression models were estimated. Table 3 presents the full results.

**Table 3.** Linear Regression Results for the Three Dimensions of the Sustainable Business Model.

Variable	Category	Green Economy		Social Dimension		Employee Development	
		Estimate	p-value	Estimate	p-value	Estimate	p-value
Enterprise size	Medium	0.37345	0.0122*	0.05124	0.724	- 0.072120	0.5897

Industry	Large	- 0.06778	0.6829	- 0.13350	0.413	0.300920	0.0458 *
	Trade	- 0.07823	0.6477	- 0.26421	0.117	- 1.107	0.2697
	Services	- 0.39579*	0.0115*	0.06950	0.649	0.671	0.5032
Seniority	1–5 years	- 0.64013	0.0717	0.06513	0.852	0.007402	0.9816
	6–10 years	- 0.86435	0.0161	0.05020	0.886	- 0.035412	0.9126
	Over 10 years	- 0.65952	0.0617	0.17439	0.614	-0.005268	0.9868
Position	Middle-level						
	management positions	0.17475	0.2158	0.01007	0.942	0.125510	0.3252
		R <sup>2</sup> = 0.091		R <sup>2</sup> = 0.03603		R <sup>2</sup> = 0.04952	
		F-statistic = 3.005		F-statistic = 1.037		F-statistic = 1.446	
		p-value = 0.0032		p-value = 0.4089		p-value = 0.1787	

Source: Author's own compilation. \* p-value < 0.05 (statistically significant differences).

#### 4.3.1. Green Economy

The regression model for the green economy dimension explained 9% of the variance in assessments ( $R^2 = 0.091$ ;  $p = 0.0032$ ) and revealed several significant relationships. First, employees working in medium-sized enterprises rated this dimension higher than those in small companies ( $\beta = 0.373$ ,  $p = 0.012$ ). Second, employees in the services sector provided lower ratings than those employed in manufacturing enterprises ( $\beta = -0.396$ ,  $p = 0.012$ ). Third, employees with 6–10 years of work experience rated the green economy dimension lower than those with shorter seniority ( $\beta = -0.864$ ,  $p = 0.016$ ). Job position did not have a significant effect on assessments of this dimension.

#### 4.3.2. Social Dimension

The regression model for the social dimension explained 4% of the variance in assessments ( $R^2 = 0.036$ ;  $p = 0.409$ ) and did not reveal any significant predictors. None of the analyzed variables - enterprise size, industry, work experience, or job position - had a significant impact on how employees evaluated this dimension. The variable related to employees in the trade sector came closest to significance, as they provided slightly lower ratings than those employed in other sectors, although this effect did not reach statistical significance ( $\beta = -0.264$ ,  $p = 0.117$ ).

#### 4.3.3. Employee Development

The regression model for the employee development dimension explained 5% of the variance in assessments ( $R^2 = 0.0495$ ;  $p = 0.179$ ). Among the predictors analyzed, only enterprise size was significant: employees working in large companies rated this dimension higher than those in small companies ( $\beta = 0.301$ ,  $p = 0.046$ ). The remaining variables - industry, seniority, and job position - did not have a significant impact on assessments of this dimension.

## 5. Discussion of the Results

The assessments of the three dimensions of the sustainable business model follow a hierarchical pattern: employee development received the highest ratings, followed by the social dimension, and the green economy was rated the lowest. This distribution can be interpreted in the context of findings suggesting that development- and social-oriented practices are more standardized and more easily embedded in human resource policies than environmental initiatives, which require greater resources and more complex implementation processes [46,47]. This can be explained by the fact that employee development programs and social initiatives usually have clearly defined procedures and standards, which facilitate their implementation and observability in organizational practice. Recent analyses also indicate that social values and practices may support the development of organizational green capabilities; however, this relationship is indirect and manifests primarily at the level of

perception and interpretation of organizational actions, rather than as a straightforward causal mechanism [48].

Enterprise size differentiates the perception of two dimensions. In the case of the green economy, higher ratings are reported by employees of medium-sized companies compared to those in small enterprises, whereas in the employee development dimension, significantly higher ratings are observed in large enterprises. These differences can be partially interpreted in the context of varying organizational capacities and the degree of institutionalization of sustainable business model practices. Research indicates that enterprise size may influence an organization's responsiveness to stakeholder pressure and the scope of implementing circular economy practices, which can indirectly contribute to greater visibility and intensity of such initiatives in larger entities [49]. Analyses of the relationship between ESG (Environmental, Social, Governance) initiatives and enterprise performance also suggest that organizational size influences the significance and effectiveness of these actions, although it does not directly determine how they are perceived by employees [50]. Similar patterns have been described in the literature: large organizations more often have formalized CSR structures and procedures, whereas in SMEs these activities tend to be more operational and less visible in daily practices [37,39]. Similar patterns are also observed in the retail sector, where managers of international corporations report a higher level of CSR implementation than managers of SMEs [51].

Industry primarily differentiates the assessments of the green economy: employees in the services sector rate this dimension lower than those in production. This finding aligns with evidence that the intensity and visibility of environmental practices are higher in sectors with material-, resource-, and energy-intensive processes [52,53]. At the same time, studies in the SME sector indicate that industry differences are not always pronounced - in some contexts, they may even disappear [54]. This overview suggests that the strength of sectoral differences depends both on the sector's characteristics and on the level of formalization of CSR practices and their visibility to employees.

Individual factors play a limited role. Only employees with medium seniority (6–10 years) provide lower ratings of the green economy, which can be interpreted as reflecting greater awareness of inconsistencies between declared policies and actual practices, consistent with findings on increasing criticality with professional experience [41]. The lack of differences related to position confirms that the perception of sustainable practices is primarily shaped by organizational factors [47].

Low  $R^2$  values suggest that, beyond enterprise size and industry, other factors not included in the model may play a significant role, such as organizational culture, leadership style, or the intensity of internal communication. This is consistent with reviews indicating that the implementation of environmental practices in SMEs is particularly sensitive to resource and organizational barriers [55].

## 6. Conclusions, Implications, and Directions for Future Research

Based on the obtained results, several practical recommendations for organizations can be formulated. First, it is important to note that employees' perceptions of sustainability initiatives vary depending on their nature. Initiatives related to employee development are perceived most positively, social practices receive slightly lower evaluations, and the green economy dimension is the least visible in employees' perceptions. Accordingly, organizations should aim to balance their sustainability efforts, starting with areas that are most visible and tangible to employees, while gradually developing more complex environmental initiatives.

Equally important is considering the size of the enterprise. Employees' perceptions of sustainable business model practices vary depending on organizational resources and the degree of process formalization - initiatives related to the green economy are more noticeable in medium-sized companies, while in large enterprises, employees rate personal development initiatives more positively. Adapting policies and actions to the specific characteristics of organizational size can therefore enhance their effectiveness, improve employee perception, and increase engagement.

Industry differences also have an impact - in the service sector, the green economy dimension is perceived less positively than in the manufacturing sector. This highlights the need to tailor sustainable business model practices to the nature of the company's operations and to effectively communicate their importance to employees to increase awareness and acceptance. Conversely, the limited impact of individual characteristics, such as seniority or position, suggests that sustainability initiatives should be systemic, consistent, and visible to all employee groups.

At the same time, the study has certain limitations that should be considered when interpreting the results. First and foremost, it includes only employees of Polish enterprises, which limits the generalizability of the findings to other countries and organizational cultures. The sample sizes of some groups were relatively small, which may affect the precision of estimated effects. Moreover, the analysis focused solely on the subjective perception of practices across the three dimensions of sustainable development, without assessing the actual implementation of these practices. The models included only four predictors: enterprise size, industry, seniority, and position. However, the perception of sustainable business model practices may also be influenced by other organizational factors, such as organizational culture, leadership style, or internal communication.

From the perspective of future research, it would be valuable to extend the analyses to include additional organizational variables that may influence the perception of practices, as well as to conduct studies in other industries and countries to verify the universality and contextuality of the observed relationships. Longitudinal studies, in turn, would allow for assessing the stability of perceptions over time and the impact of changes in company policies on employees' reception of sustainability initiatives.

The study also contributes to the literature on the development of sustainable business models in Polish enterprises by addressing the gap related to the limited consideration of employees' perceptions across the three empirically identified dimensions. Additionally, it provides practical guidance for organizations seeking to effectively implement coherent and visible sustainability initiatives.

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## Abbreviations

The following abbreviations are used in this manuscript:

TBL	Triple Bottom Line
CSR	Corporate Social Responsibility

SMEs      Small and medium-sized enterprises

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