Concept Paper

Sustainability Accounting—Cognitive and Conceptual Approach

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Abstract: Nowadays, the speed of changes in practical activities and scientific research in the field of sustainable development has not yet allowed to clearly indicate the role of accounting in this area. Therefore, the main goal of the paper is to present sustainability accounting in the light of positive and normative accounting theory and to propose its conceptual framework as a normative solution. Positive theories allow the author to use inductive reasoning and thus indicates the state of accounting development (opportunities and risks) in sustainable business, identifying three key gaps: theoretical, empirical and methodical. In turn, by means of normative theories, on the basis of deductive reasoning, the paper recognizes the desired directions and normatives of sustainability accounting changes. The research methodology is based on theoretical and methodological triangulation, using descriptive and comparative analysis. The main findings of the research focus on an original normative solution in the form of the author's concept of sustainability accounting based on conclusions drawn in the light of positive and normative accounting theories. The presented potential research areas are meant to pose the directions of sustainability accounting development. The results of research may determine the future growth, importance and character of sustainability accounting in business, and thus help both shareholders and stakeholders to perceive and use company achievements for sustainable development.

Keywords: accounting; sustainability; sustainability accounting; accounting theory; accountability

1. Introduction

Growing public awareness of sustainability raises the need for business settlements in line with the concept of accountability [1–4]. Its basic principles determine the company's relationship with its shareholders and stakeholders, which in turn may as a consequence affect the financial and non-financial value of the company [5,6]. Corporate sustainability strategy requires making consistent value-enhancing decisions in line with sustainable development goals through the efficient allocation of its resources like people, land, equipment and the financial assets. Nevertheless accountability innovations may end up just in a fad and fashion uptake, creating inefficiencies and not achieving the aims they are intended for [3] (p. 1).

Sustainability reporting is growing rapidly worldwide. Scientific research into sustainability accounting is broad; however, accounting changes are slow, and little is known about the successful adoption of sustainability accounting [7,8]. So accounting still requires conceptual and institutional changes that will constitute the place of sustainability accounting in a corporate information system. There is still no framework of sustainability accounting as an instrument for providing stakeholders and shareholders with reliable economic, social and environmental performance of the enterprise, as the normative approaches presented in the literature are of a rather general nature [7,9–12].

The paper aims to present sustainability accounting in the light of positive and normative accounting theory and to propose its conceptual framework as a normative solution. Positive theories

are used for inductive reasoning and thus allow us to indicate the state of accounting development in sustainable business, and to diagnose the key gaps in accounting development. In turn, by means of normative theories, on the basis of deductive reasoning, the paper recognizes the desired directions of accounting changes, supporting reporting on achievements for sustainable development, as well as managing a sustainable enterprise. The paper proposes an author's normative solution in the form of a sustainability accounting conceptual approach and indicates further prospects for accounting development. To the best of the author's knowledge, this study, as the first one in English-language scientific literature, postulates the theoretical detailed framework of sustainable accounting. These premises allow the author to pose the following theses:

- (1) The growing importance of the concept of sustainable development in practice and science requires the unification of various approaches to the role and importance of accounting.
- (2) Changes in accounting influenced by sustainability and future sustainability accounting development can be interpreted in the light of positive and normative accounting theories.
- (3) Conceptualization of sustainable company accounting requires setting a framework with a specific structure, assumptions and goals aimed at providing external and internal stakeholders with reliable information about the company's achievements for sustainable development.

To prove these theses, the paper relies on triangulation:

- theoretical—the issue at hand is identified and the encountered phenomena are described and explained by applying the precepts of accounting theories (critical review of scholarly literature supported a bibliometric study), which justifies resorting to general and a priori deduction;
- methodological—based on descriptive and comparative analysis. Mixed methodological approaches in terms of deductive reasoning and inductive reasoning are applied.

The research methodology is based on inductive and deductive reasoning as well as on descriptive and comparative analysis. The paper is structured as follows: the second section provides the background for research study, and presents sustainability accounting development from a theoretical and practical view. The bibliometric analysis conducted by the author in this section is based on the bibliometric data which covers sustainability reporting and sustainability accounting research conducted in 1945–2019. The databases contain 755 publications relating to sustainability reporting and 417 publications relating to accounting research, covering research articles, conference papers and review papers. This part presents bibliometric data, trends in the number of publications in the analyzed areas, the geographical origins of research and ranking of the publications by author. The second stage of the bibliometric study reflects citations to source items indexed within the Web of Science Core Collection in 1996–2019 and is dedicated to sustainability accounting research. It is based on three different sets of the citation statistics, the ranking of the most cited articles and also the approaches to sustainability accounting presented in the most cited articles in the Web of Science database. The third section of the manuscript gives an insight into issues regarding sustainability accounting in the light of positive and normative theory, and diagnoses key gaps in sustainability accounting development. The fourth section presents the author's concept of a sustainability accounting approach as a normative solution. Further prospects for sustainability accounting development are also indicated. Finally, the paper provides concluding comments.

The results of research may determine the future importance, scope and character of sustainability accounting, and thus help shareholders and stakeholder to perceive and use environmental, social and governance performance in long-term value creation. Their use can be a valuable support for practitioners and regulators, as well as scientists. These research results serve as a conceptual framework to apply sustainability accounting as a good practice model for companies seeking for a source of reliable and verifiable information for the preparation of sustainability reporting and for making sustainable decisions. Proposed normatives, based on pragmatic orientation, can also support regulators in the harmonization and standardization of reliable and verifiable reporting

on achievements for sustainable development and its attestation, involving accountants and their accountability skills. Moreover, the conceptual approach for sustainability accounting may set the benchmark in the topography of accounting research focused on reporting on achievements for sustainable development, as well as managing a sustainable enterprise.

2. Sustainability Accounting and Reporting towards Trends in Sustainable Business

The accountability concept is variously defined, and the term “accountability” itself is used in various ways in the scientific literature [4]. Moreover accountability is far from being a mono-dimensional concept [13] (p. 807). For the purposes of this paper it was adopted that accountability means the obligation to account for the responsibility for the results of the impact on a natural environment and on society, and accounting is one of the instruments supporting settlement in the accountability concept [4] (p. 73).

The recent increased call for transparency comes from accountability requirements in the context of corporate governance, which expand to sustainability strategy, and thus also to sustainability reporting. Sustainability strategy focuses on a company’s long-term value by enhancing strategic operations and improving its reputation and risk management [14]. It requires substantial improvements by developing superior production processes, products and services, by exercising strong market influence, and also social, environmental and political influence [15]. Sustainable business needs to meet the expectations of a wide range of stakeholders and is required to present multidimensional results. Consequently, it determines the company’s information systems, including in particular accounting and reporting. Although both sustainability accounting and sustainability reporting serve to represent corporate environmental and social impacts, these systems do not develop in parallel [16].

Sustainability reporting is the most visible way of illustrating how a company achieves sustainable development goals. It is seen as an expression of greater accountability towards stakeholders, as well as the implementation of the sustainable business model [16–18]. Although sustainability reporting is not mandatory for most firms, the number of reports (social reports, environmental reports, CSR reports or sustainable development reports) is increasing significantly. Analysis of reports, carried out for the purposes of this article, based on the Sustainability Disclosure Database [16] for the years 1999–2017 reveals that almost 54% of all reports come from the last four years, and almost 90% are a result of the last eight years. In addition, the rapidly growing trend applies to reporting organizations. In the analyzed period, there were 14,000 reporting organizations, and 70% of them were reported in the previous four years. In turn, the geographical analysis shows that sustainability reporting is most popular in Europe. However, in recent years of the analysis, the European reporting level has been exceeded by Asia, in which the dynamics of reporting growth is the strongest. Oceania shows the least interest in reporting, with a low growth trend. Other areas are characterized by systematic moderate growth (Figure 1).

Figure 1. The number ranking of sustainability reports relating to the geographical origin in 1999–2017. Source: Based on [19].

The importance of sustainability accounting cannot be directly assessed from a trend in sustainability reporting. This is due to the fact that in many regions of the world, sustainability reporting is called differently and it is prepared according to the various standards. At the same time, accounting used for the purposes of sustainability is also defined differently worldwide, and its significance in relation to sustainability reporting may also be determined variously. Moreover, sustainability accounting cannot be viewed only from the reporting perspective. Its other elements in the corporate accountability system, although invisible in sustainability reports, are also important for the purposes of corporate management (this includes all activities, methods and systems to record, measure, analyze and report environmentally and socially induced financial impacts, and the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability [16]). They are the subject of numerous scientific studies (i.e., [4,9,12,15,19,20]), the analysis of which may help to determine the multi-perspective character of sustainability accounting. So, in order to demonstrate this phenomenon in the light of science, it has been used as a bibliometric method.

To reveal the differences in the development of research on sustainability reporting and sustainability accounting, the results of bibliometric tests are presented in the form of a comparative analysis. Due to the various definitions and forms of sustainability reporting and sustainability accounting, the most popular in the scientific literature terms are used to create two separate local publication databases from the Thomson Reuters Web of Science database for bibliometric analysis. Thus, the bibliometric study is based accordingly on the following terms

- social reporting, sustainability reporting, social responsibility reporting, social and environmental reporting and CSR reporting;
- social accounting, sustainability accounting, social responsibility accounting, social and environmental accounting and accounting for sustainable development.

The databases are created by selecting the literature containing alternatively one of the phrases of reporting and accounting, narrowing down the search to the titles of the publication. In this way, the first database relating to publications about reporting has been created containing 755 publications, and the second database relating publications about accounting 417 publications.

The first part of the bibliometric study is based on three different sets of bibliometric data from 1945–2019: the number of publications held as source items in the Web of Science (Figure 2), geographical origin of research (Table 1) and ranking of the publications by author (Table 2).

Figure 2. The growth trends of the number of articles included in Web of Science' database relating to sustainability reporting and sustainability accounting 1996–2019. Source: based on the Web of Science database.

Table 1. The number ranking of articles in the Web of Science database relating to the geographical origin of research on sustainability reporting and sustainability accounting 1945–2019.

Country	Sustainability Reporting	Sustainability Accounting
USA	13.0%	25.7%
Australia	9.8%	6.9%
England	9.5%	9.1%
Italy	8.6%	2.6%
Germany	8.2%	2.6%
Spain	7.3%	6.9%
Peoples R. China	5.3%	4.5%

Table 2. The number ranking of the publications per author and journals for articles in the Web of Science database relating to sustainability reporting and accounting research in 1945–2019.

Research on Sustainability Reporting		Research on Sustainability Accounting	
Name of Author	Record Count	Name of Author	Record Count
Uyar A.	8	Cardenete Ma.	6
Buallay A.	7	Schaltegger S.	6
Kilic M.	6	Delgado Mc.	5
Pucheta-Martinez Mc	6	Dillard J.	5
De Villiers C	5	Gray R.	5
Journal	Record Count	Journal	Record Count
Sustainability	36	Accounting Review	19
Corporate Social Responsibility and Environmental Management	32	Sustainability Accounting Management And Policy Journal	12
Journal of Cleaner Production	32	Economic Journal	11
Journal of Business Ethics	30	Accounting Auditing Accountability Journal	8
Business Strategy And The Environment	18	Journal of Business Ethics	7
Social Responsibility Journal	16	Accounting Organizations and Society	6

As Figure 2 shows, the first studies on sustainability reporting and accounting date back to the 1990s. The beginnings of sustainability accounting developed in a mesoeconomic and macroeconomic approach [20,21] and provided accounts to society of their resources use. By expanding the subject and object of corporate accounting, initially mainly concerning environmental aspects, the last two decades have brought a special development of sustainability accounting, and there has been a rapid increase in scientific interest in the analyzed areas in the last two decades. The scientific interest in research on sustainability reporting and accounting in the last decade represents over 80% of all studies.

As Figure 2 shows, the increase in research on reporting is more dynamic than that in accounting research. The polynomial trend lines visualize the differences in trends in the scientific interest development and in the potential rates of future change in the analyzed area. It may be concluded that the role of sustainability accounting does not arise from sustainability reporting, which may be confirmed by scientific research. According to the author, it proves existing cognitive dissonance in research on sustainability reporting and sustainability accounting.

The geographical area of research coincides with sustainability accounting and reporting with the areas with the highest sustainability reporting rate (see Figure 1); 60% of the research on the analyzed topics conducted in 1996–2019 comes from the eight countries indicated in Table 1.

Table 1 lists the top eight most productive countries in sustainability reporting and research, and thus shows the different interests in sustainability accounting and sustainability reporting by country. A quarter of all research into sustainability accounting comes from the USA, while only 13% of reporting research is done in this region. More interest in accounting research in the USA meets less interest in this research in Europe, in particular, there is low interest in Italy and Germany. The most research into sustainability reporting is in Europe (over 40%), including the most in England, Italy, Germany and Spain, whereas almost 10% comes from Australia. The diverse interest in research in the analyzed areas may indicate the different defining aspects of sustainability accounting and reporting and the difficulty in distinguishing between sustainability reporting and accounting (and their other different forms and terms). It confirms the problem indicated in the literature—for example, according to Gray [20], sustainability accounting takes a wide variety of forms and appears under various labels and is used as a generic term for convenience to cover all forms of “accounts which go beyond the economic” and for all the different labels under which it appears—social accounting, environmental accounting, social responsibility accounting, social audits, corporate social reporting, employee and employment reporting, stakeholder dialogue reporting as well as environmental accounting and reporting [20]. This approach is due to the fact that the linkage between sustainability accounting and sustainability reporting is still ambiguous and needs to be extended as a pragmatic imperative by moving beyond the procedural tasks designed to emphasize report preparation, information verification and disclosure and towards behavioral change within corporations, such that performance is improved [16].

Furthermore, the different interest in sustainability accounting and reporting can be also interpreted as a niche in sustainability accounting research in Europe. It may also be expected that there will be more interest in accounting research in the future following the US pattern.

Moreover, as bibliometric analysis reveals, there is a very large dispersion of authors dealing with the analyzed subject matter, and the publications of one author does not exceed 2% of the total. This fragmentation of paper publications is shown in Table 2.

A noticeable phenomenon typical of research into sustainability reporting concerns the place of publication. In research into sustainability accounting, the place of publication is more dispersed—less than 20% of all publications are published in the most popular journals. Moreover, it can be stated that research into sustainability reporting appears in journals with broader horizons and a wider science profile, while those on accounting are published in journals more closely related to accounting science (Table 2).

The first part of the bibliometric study was completed by testing whether a cognitive approach and an attempt to build the sustainability accounting framework have been adopted in the current research so far. Those conducted by the author analysis of the local database of Web of Science in the bibliometric test relating sustainability accounting (417 publications) reveals that there are only a few pieces of research into the theoretical approach to sustainability accounting in the Web of Science database relating to sustainability accounting research from 1945–2019 [22–25]. The authors of theoretical approaches to sustainability accounting presents a different aspect of accounting, with various theoretical, social and political backgrounds, in the public or private sphere. The role of accounting is assessed in such perspectives as reporting, strategy, management, communication and meeting the information needs of the stakeholders, very often narrowed down to an analysis only of environmental (such as carbon emissions and biogas-based projects), social or local goals of sustainable development assessed from a meso, macro or micro perspective. Some studies dedicate an approach only to the type of enterprise, industry, country or region. There are in particular studies into a Social Accounting Matrix Framework, nevertheless, there is still a lack of a generally applicable definition of corporate sustainability accounting, its system and any guidelines for its subsystems.

The second part of the bibliometric study reflects citations to source items indexed within the Web of Science Core Collection in 1996–2019 and is dedicated to sustainability accounting research only. Due to the fact resulting from part I of the bibliometric test in this study—that sustainability accounting

research was not much published in the years 1945–1996—the shortened period of the citation analysis in relation to the period of publication analysis does not affect comparability. The citation statistics of articles in the Web of Science database relating to accounting research in 1996–2019 is presented in Table 3.

Table 3. An overview of the citation statistics of articles in the Web of Science database relating to sustainability accounting research in 1996–2019.

Citation Statistics	
Results found	417
Sum of the Times Cited	3907
Average Citations per Item	9.37
h-index	29

Table 3 indicates a relatively large response in the citations. The test results show high citation and despite limiting the bibliometric study to 417 publications, their citation is above 3900. So the growing interest of sustainability accounting research is confirmed by the significant citation of research. The ranking of the most cited articles in the Web of Science database also indicates a high level of interest in sustainability accounting research over the analyzed period (see Table 4). Six papers (by Gray, Burritt, Schaltegger, Wood et al., Chen, Roberts and Lehman) have an average citation rate of over 100.

Table 4. The ranking of the most cited articles in Web of Science' database relating to sustainability accounting research in 1996–2019.

Publication	Authors	Publication Year	Total Citations	Average per Year
[20]	Gray, R	2002	345	18.16
[8]	Burritt, R. L.; Schaltegger, S.	2010	228	20.73
[26]	Wood, et al.	2015	213	35.50
[16]	Schaltegger, S.; Burritt, R. L.	2010	152	13.82
[27]	Chen, J. C.; Roberts, R. W.	2010	130	11.82
[28]	Lehman, G	1999	113	5.14

The publications with the highest citation rates presented in Table 4 differ in their approaches to sustainability accounting. These approaches are summarized in Table 5.

Gray [20] perceived social accounting as a major challenge for academia, in particular as a challenge to find a set focus, subject or orientation. According to this author, social accounting takes a wide variety of forms and appears under various labels, and the social accounting project is not homogeneous in intention, approach, interest, focus or methodology. Moreover, according to Gray, social accounting is not a part of corporate and/or accounting practice.

Table 5. The approach to sustainability accounting presented in the most cited articles in the Web of Science database relating to sustainability accounting research 1996–2019.

Publication	Term of Sustainability Accounting	Approach to Sustainability Accounting	Goals in Sustainability Accounting Development
[20] Gray	Social accounting; social and environmental accounting	Social accounting is used as a generic term for convenience to cover all forms of “accounts which go beyond the economic” and for all the different labels under which it appears—social responsibility accounting, social audits, corporate social reporting, employee and employment reporting, stakeholder dialogue reporting as well as environmental accounting and reporting, employee and employment reporting, stakeholder dialogue reporting as well as environmental accounting and reporting.	The following goals: * there are no framework details; * challenge to focus, subject and orientation of sustainability accounting; * greater metatheory for social accounting; * concentrate not only on environment but also on employees to find a coherent integration of social and environmental issues.
[8] Burritt, Schaltegger	Corporate sustainability accounting	A set of tools that provide help for managers dealing with different decisions (the managerial path of sustainability accounting).	There are the three approaches, followed by inside out, outside in and the twin-track approaches.
[26] Wood et al. (2015)	Environmental-Economic Accounting (SEEA).	System to operationalize a global-integrated accounting framework within the SEEA guideline processes for arriving at such an integrated database within the concept of multi-regional (MR-) input-output (IO) analysis.	The goal is to integrate different dimensions of various aspects of the sustainable development (such as resource extraction, employment and household demand) within a single accounting framework in a global perspective.
[16] Schaltegger, Burritt	Sustainability accounting	Is the term used to describe new information management and accounting methods that attempt to create and provide high quality, relevant information to support corporations in relation to their sustainable development.	The future goal is the development of a pragmatic set of tools for corporate practice that deal with activities, methods and systems to record, analyze and report: (1) environmentally and socially induced financial impacts, (2) ecological and social impacts of a defined economic system; (3) the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability.

Table 5. Cont.

Publication	Term of Sustainability Accounting	Approach to Sustainability Accounting	Goals in Sustainability Accounting Development
[27] Chen, Roberts	Social and environmental accounting	<p>Sustainability accounting as a tool:</p> <ul style="list-style-type: none"> - to manage image (legitimacy theory), - to adopt a specific corporation structure, system or practice implemented by similar organizations (institutional theory); - of dynamic interactions between two competing or complementary organizations (resource dependence theory); - of unexpected social or environmental activities undertaken by corporations (stakeholder theory) 	<p>The assumption for future research:</p> <p>(1) business entities initiate social activities:</p> <ul style="list-style-type: none"> - based on direct interactions with stakeholders; - to manage their societal level of legitimacy. <p>(2) the perspectives of analyzed theories enable the reaching of compatible interpretations of business social phenomena and the research may be more applicable.</p>
[28] Lehman	Social and Environmental Accounting	<p>Sustainability accounting is:</p> <ul style="list-style-type: none"> - a social mechanism which can be used to engage the hegemonic and destructive forces of the capitalist relations of production; - developed to measure and verify the effects of, among other things, the costs of plant closure, levels of emission, waste and pollution. 	<p>It is necessary to add an environmental awareness to the managers' lexicon, the moral sense which reflects what have been referred to as hyper-goods.</p>

Burritt and Schaltegger [8] find two main paths relating to the development of sustainability accounting: critical and managerial. A critical path of accounting is derived from sustainability reporting, and it is found by the authors as a source of the problems that lead to unsustainable development and for which an awakening or an awareness of this issue is the main focus of attention. The managerial path, in turn, views sustainability accounting as the provider of solutions to problems and directs attention to tools which can support decisions to be made in a set of diverse circumstances by diverse actors and different types of managers, as well as different stakeholders. Burritt and Schaltegger treat the management path as the right one. These authors, in their second highly cited publication [16], stressed that theoretical research into sustainability accounting will require:

- the creation of meaningful indicators and information using a range of tools;
- support for meaningful interpretation and relevant use of these indicators and information;
- a sustainability accounting system that is reliable and transparent.

Only under such conditions can sustainability accounting provide a credible basis for decision making and accountability.

Wood et al. [26] present the description of integrated accounting frameworks for the global mapping of environmental, economic and social impacts. They represent research from a mezzo- and macro-economic perspective that is not the subject of this manuscript, whereas Chen and Roberts [27] perceive social and environmental accounting from the overlapping perspectives of legitimacy theory, institutional theory, resource dependence theory and stakeholder theory. They find sustainability accounting as a tool to manage the image of the firm, to adopt a specific corporation structure, system or practice implemented by similar organizations. It may support dynamic interactions between two competing or complementary organizations and unexpected social or environmental activities undertaken by corporations. Lehman, in turn, presents an historical and theoretical study of sustainability accounting. According to the author, social accounting has been developed to measure and verify the effects of, among other things, the costs of plant closure, levels of emission, waste and pollution [28].

The presented approaches on corporate sustainability accounting allow the adoption of the dual treatment of accounting and states the author's approach to define it. So sustainability accounting in this manuscript is understood as:

- (a) an integrated system of financial measurement of economic, social and environmental aspects, enabling communication about the company's achievements for sustainable development to key internal and external stakeholders, and thus support the company's accountability.
- (b) a tool for strategic management, which, through the measurement of results, serves to assess the degree of implementation of sustainable development principles as the basis for settling the economic, social and environmental responsibility of the enterprise, and to communicate results on achievements towards external stakeholders, and multidimensional presentation of the results of the implementation of operational and strategic activities supporting management.

This definition of accounting and the objectives adopted therein form the basis for further considerations in the manuscript.

Summing up, due to the significant increase in sustainability reporting and sustainability accounting and their different forms and standards, the question arises whether these categories can be used interchangeably in the sense of accounting; whether every reporting is accounting; what role accounting plays in the face of unethical forms of reporting such as greenwashing or other misinformation practice and whether the role of accounting can be the same for all regions of the world against different trends in corporate sustainability. Neither in theory nor in practice has the role of sustainability accounting been clearly stated or standardized.

3. Sustainability Accounting Development in the Light of Accounting Theories

The presented analysis of rapid trends in sustainability accounting may be interpreted in the light of accounting theories. Accounting theories essentially help to formulate new concepts, methods and models, but also help explain the solutions used in practice. Consequently, the accounting theories may have a normative, as well as a positive nature.

Sustainability accounting studies in a positive approach belong to the school of induction, describing and explaining the world a posteriori by asking questions such as: “What is?”, “What is the current state?”, “Why is it so?”. For this purpose, they are applied mainly in systemically oriented theories, including in particular legitimacy theory, stakeholder theory and institutional theory. The legitimacy theory assumes that companies operate under a “social contract” focused on winning social acceptance, and retaining it to justify the legality of its corporate activity [27,29,30]. The stakeholder theory explains, in turn, why stakeholders’ information expectations imply a multidimensional presentation of the economic, social and environmental potential. Whereas, in the perspective of institutional theory, accounting in sustainable business is expected to perceive for itself a new institutional space in which it is to be integrated into the economic, environmental and social dimensions of corporate performance. In this perspective it investigates a specific corporation structure, system, program or practice that is commonly implemented by other similar organizations as a part of normal business operations [27].

So sustainability accounting, in the light of positive accounting theories, is regarded as [8,27,31–33]:

- an instrument of measurement, presentation and communication of corporate sustainability performance, expected by various groups of company stakeholders;
- a method to justify the company’s mandate to impact its environment;
- a certificate of the company’s “moral maturity”, attesting its contribution to sustainable development;
- evidence of recognizing a new institutional aspect of the company’s activities, related to its contribution to sustainable development together with the need to present its economic, environmental and social performance;
- an “information signal” sent from managers to the recipients of corporate statements in order to remove information asymmetry between stakeholders.

Consequently, positive accounting theories treat sustainability reporting and accounting as the key communication tool. Thus, it gains the trust of internal stakeholders (e.g., employees) and external stakeholders like investors or clients, and thus contributes to the increase of a company’s value.

In parallel with accounting development opportunities, positive accounting theories reveal many risks for accounting and allow the identification of three key gaps—theoretical, empirical and methodical. Nowadays, the most visible is an empirical gap of sustainability accounting development. The growing interest of sustainability reports, characterized by uncertainty, subjectivism and incomparability, raises the risk of the unreliability presented to stakeholder information (in the form of greenwashing, whitewashing, bluewashing and others), “because social and environmental disclosures made by the organization were largely at its discretion” [34]. Such a strategy occurs when companies voluntarily issue sustainability reports to promote an impression of legitimate social and environmental values, which may or may not be substantiated [34,35]. Unethical misinformation practices may be overshadowed by a broad umbrella of accounting and financial statements’ reliability. Accounting is not keeping up with the rapid development of sustainability reporting, including not developing our own generally respected accounting principles in assessing the achievement of sustainable development goals. Despite many utilitarian premises, little is known about the successful adoption of sustainability accounting, and using accounting to identify, measure and disclose information about sustainability development goal achievements is scarcely recognized.

The theoretical gap of sustainability accounting also means the lack of consensus in determining the role of sustainability accounting (e.g., [20,36]). Despite many research studies, no explicit accounting

principles have been indicated for the measurement and disclosure of sustainable development achievements, there is even no clear impact of communicating these achievements on the financial results of enterprises which have not been unanimously determined either [37–39]. The development of traditional accounting and financial reporting towards sustainability accounting is also ambiguous [8], for example, it only praises the managerial path of sustainability accounting, negating other tasks and noticing in them the risks for accounting development and its significance for sustainability.

The theoretical gap is related to the third gap in sustainability accounting development, the methodical gap. This results from the lack of a commonly accepted accounting methodology in the concept of sustainable development. The current method of measuring, controlling and reporting of the results of activities for sustainable development is on the borderline with accounting, and the boundaries, where accounting is reached, are specified by neither the authors in the scientific literature nor practitioners operating in enterprises for sustainable development. The methodical solutions proposed in the abovementioned sustainability reporting standards are not the essence of accounting, they do not implement its basic principles. Thus, there is a strong need of creating a general conceptual framework of sustainability accounting in order to ensure reliability and a fair presentation of accounting data and this task belongs to normative accounting theories.

Sustainability accounting research in a normative approach represents a deductive inference with the a priori question (“what ought to be?”). The objective of normative accounting theories is to analyze how accounting should change in order to remain a normative point of contributing to the economic, social and environmental values of companies. Normative solutions of accounting are usually found in the standards and guidelines in force and in practice and in science proposals; however, as indicated above, sustainability reporting standards do not directly determine the role and scope of accounting. The normative approaches presented in the literature are rather of a general nature [7,40–43] or are dedicated only in reporting (in the form of guidelines and other reporting standards) or managerial decisions (f.e. [44]). Nevertheless, as a pragmatic challenge for accounting research it indicates the need to provide a framework for and evidence about measurement and reporting which balances the need for an integration of the variety in information about sustainability with the differentiated unitary information effects between the dimensions of sustainable development, at various corporate management levels and for various management functions, like strategy development and operations [16].

Distinguishing normative solutions for accounting has been presented as based on a unique intervention-research approach, which assumes the transition from financial accounting to a multi-capital accounting model [45]. Normative models proposed by scientists, including measuring, valuation and disclosure of externalities, present two main approaches [36]:

- attempts to change the current financial accounting and its improvement and extension to non-financial aspects;
- attempts to develop new measures and ways of recognizing the results of actions for sustainable development.

Every approach of these normative expectations requires primarily a credibility guarantee from the accounting system, such features as reliability, verifiability, transparency and stakeholder involvement. Accounting is expected to be more involved with measuring and managing sustainability initiatives and integrating socially responsible investments into financial disclosures through measuring inputs and outputs, performing analytical procedures, quantifying cost savings and return on investment, issuing reports to stakeholders and providing assurance [14,15]. However, “much work is required for sustainability accounting practice to achieve the rigor and integrity defined by the list of qualitative attributes” [7] (p. 24). The main accounting areas that still require in-depth normative research are as follows [21]:

- sustainable development goals and their relationship with sustainability accounting and reporting;
- the influence of the integrated reporting initiative on sustainability reporting and the role of accounting and accountants in this regard;
- accounting for specific environmental issues such as Carbon, Water, Waste and Biodiversity and the implications for sustainability;
- accounting for specific social issues such as health and safety, product responsibility, labor, gender, diversity, human rights, equity, modern slavery and the implications for sustainability
- sustainability accounting and reporting in developing countries.

Moreover, there is also a need to extend the basics of accounting conceptualization to include organizational and social contexts [46–48]. Normative expectations are also directed to accounting education systems that would allow accountants to measure sustainable development results in a multifaceted way (e.g., [7,14,49]). This direction of accounting profession development is also supported by organizations from the accounting environment, including the International Federation of Accountants IFAC [50], AccountancyEurope [51], American Institute of Certified Public Accountants and Association of Chartered Certified Accountants [52].

Sustainable change depends on the extent to which “integrated thinking” and “integrated accounting” can confront, challenge and colonize the “unintegrated thinking” and “unintegrated accounting” that dominates contemporary business [52,53]. Nevertheless, in scientific research there are studies concerning mainly individual aspects of accounting, such as reporting, attestation of disclosed results, cost accounting, environmental costing or assurance in the light of selected theories (e.g., [16,48,53,54]). There are few attempts to create a theoretical sustainability accounting framework promoting its holistic perception, and the existing ones have a very general nature (e.g., [7,10,11,55]). Scientific proposals did not undertake conceptualization of accounting aimed at implementing the principles of sustainable development in the meaning of a structured concept, including a broadly systemic classification and taxonomic approach. This lack of detailed solutions of sustainability accounting indicates the need for its comprehensive conceptualization.

4. Conceptual Approach of Sustainability Accounting (The Author’s Concept)

This manuscript aims to present the author’s concept of a sustainability accounting framework based on the synthesis of the conclusions formulated in the parts above. The proposed conceptual approach of a sustainability accounting framework completes the niche indicated in the research in the light of the positive accounting theory approach—sustainability accounting is to be a tool if communication with various groups of company stakeholders, a certificate of the company’s “moral maturity”, legitimacy of sustainable business and “information signal” confirming the removal of information asymmetry between stakeholders [16,27]. It is also a response to the normatives, indicating how such accounting should be formed (the concept inspired mainly by [7,11,12,15,16,22,23,36,44]). The innovative nature of this approach is proved by the means of bibliometric analysis, based on the database of the scientific papers in the Web of Science database relating to sustainability accounting research from 1945–2019, as characterized in Part 2 of this manuscript. This is a new voice in the scientific discussion.

The purpose of the conceptual approach for sustainability accounting is to propose a specific structure, assumptions and objectives to ensure that external and internal stakeholders have credible information on sustainable development achievements generated in the accounting system. It is assumed that accounting is not ready now to develop new measures and ways of recognizing the results of actions for sustainable development (which is in line with Gray’s position that sustainability accounting has always struggled to find its place in the accounting firmament, nevertheless it is still “not an established part of corporate accounting” [20] (p. 687)). So the concept conceptual approach for sustainability accounting is an attempt to conceptualize sustainability accounting in a structured approach to the model of financial accounting framework.

Due to the fact that a structured approach to the sustainability accounting framework is in general skipped in most research into sustainability accounting, the author of this manuscript promotes the structure of the Conceptual Framework of International Financial Reporting Standards as a basis for defining the main conceptions relating to accounting. Thus corporate disclosure, parameterized by financial accounting standards, ensures that investors and society have a true and fair picture of corporate financial activity [56], and managers have a basis for credible settlement in line with accountability. So the conceptual framework for sustainability accounting should be based on clear assumptions by specifying:

- sustainability accounting purposes,
- users of information generated from the sustainability accounting system,
- qualitative characteristics of useful information from a sustainability accounting system,
- the subjective scope of sustainability accounting,
- reporting of sustainability accounting, including rules for the recognition, valuation and presentation of elements of reports,
- rules for verifying the reliability of information from a sustainability accounting system.

Each of these areas requires in-depth research, and its basic assumptions are presented below in the article. To present them, the author's definition of accounting (see part 2) was adopted. It is in line with the approach presented in the publications with the highest citations in the Web of Science database relating to sustainability accounting research in 1996–2019.

Sustainability accounting purposes

Sustainability accounting purposes result from the dual treatment of accounting—as an integrated system of financial measurement of economic, social and environmental aspects, and as a tool for strategic management. This role of sustainability accounting is to enable comprehensive cooperation of three main systems (based on approach in [8,11,12,15,26,42,44]):

- performance measurement,
- internal control,
- reporting.

The meaning of these sustainability accounting subsystems is indicated in the Figure 3, and in its explanation.

Users of information generated from the sustainability accounting system

A particularly important element of the framework for sustainability accounting is in defining the users of information from a sustainability accounting system. It must be assumed that they are divided into two groups (like those presented f.e. [7,8,16,27,29]).

- external reporting users,
- management decision makers in terms of sustainable development strategy.

As indicated by the positive and normative approach in the literature (see part 3 of the manuscript), information from the sustainability accounting system is to support commitment of stakeholders, image and trust improvement, legitimization and also integrated efficiency control. Thus, sustainability accounting contributes to meeting the information needs of its users and the entity's two main stakeholder groups (See Figure 3).

Qualitative characteristics of useful information from a sustainability accounting system

The qualitative characteristics of useful information from a sustainability accounting system means that the data should be at least reliable, useful, understandable and comparable. To determine the meaning of the listed features, the approach of GRI standards to reporting principles for defining report quality may be used, such as (GRI 101):

- accuracy—the information from the sustainability accounting system shall be sufficiently accurate and detailed for stakeholders to assess the reporting organization’s performance;
- balance—the information from sustainability accounting system shall reflect the positive and negative aspects of the reporting organization’s performance to enable a reasoned assessment of overall performance;
- clarity—the entity shall make information available in a manner that is understandable and accessible to stakeholders using that information;
- comparability—the information from the sustainability accounting system shall be presented in a manner that enables stakeholders to analyze changes in the entity’s performance over time, and that could support analysis relative to other organizations;
- reliability—the entity shall gather, record, compile, analyze and report information and processes used in the preparation of the report in a way that they can be subject to examination, and that establishes the quality and materiality of the information;
- timeliness—the entity shall report on a regular schedule so that information is available in time for stakeholders to make informed decisions.

Only transparency and reliability of data enhances accountability by facilitating to control the company and to build a “social contract” with stakeholders.

The subject of sustainability accounting

Within the framework of sustainability accounting, attention is paid especially to financial information. Sustainability accounting is defined as “an integrated system of financial measurement of economic, social and environmental aspects”, so it collects, records, processes, analyses and reports information (usually financial information) connected with economic, environmental and social aspects of business, in order to improve the company balanced performance. Nevertheless, in this respect, the subject of sustainability accounting is an emerging phenomenon and can be best addressed through integration within the resource-based view of organizations [56,57]. The form of the subject is a methodological gap of sustainability accounting and its filling is a challenge for contemporary accounting [12]. Moreover the subject of sustainability accounting is not only the actual state of the object and the actual results of its change, that is, the economic activity of the enterprise, its property and sources, but also changes and the state of the environment, both social and ecological. That is, when organizing accounting, the objects of its actions are not only internal, but also external means and sources. Investors expect to improve their monitoring of corporate management by combining standard accounting information with a diverse array of other metrics of success like non-financial information, environmental, social and governance (ESG) indicators and sustainability indicators [56].

Nowadays, traditional financial accounting does not recognize the economic concept of an externality, that is, the costs and benefits incurred by an unrelated third party as a side effect of a transaction between two parties.

The literature provides various solutions that have still not been applied in practice, like sustainable cost, full cost accounting, the input–output analysis, natural capital inventory accounting, triple bottom line accounting and others [7,32,58,59]. There is still a methodological gap in this regard [12,45]. So at the moment (as long as there are no practical concepts), the approach of extending the subject of financial accounting should be adopted.

Sustainability accounting reports, including rules for the recognition, valuation and presentation of elements of reports

As sustainability accounting system is expected to meet the information needs of external and internal stakeholders, two separate forms of communicating results are needed—the external and management sustainability accounting reports.

The first one should include an extended financial report (or preparation of an additional version of the report, apart from the financial report resulting from the accounting regulation in a country).

The extended financial report is expected to identify environmental aspects and aspects of social impact, including also enriching additional information about indicators and measures of economic, social and environmental effectiveness. To show concrete results for external stakeholders, it is necessary to create the model elements of the extended report, such as the expanded balance sheet, profit and loss account, cash flow statement and statement of changes in equity (e.g., [12]). The extended financial report should be created in order to distinguish the principles of development of a sustainable category that are important from the perspective of assessing the outlays and results related to the sustainable objectives declared by the company.

The second forms of communicating results supports internal settlement of sustainable development activities and depends on the needs of the management. It may be the form of the overall reporting system, which comprises the social report and the environmental report, a set of integrated performance indicators, the integrated information system or even the key performance indicators for corporate sustainability [32]. Measuring of achievements for the sustainable development of goals would be a starting point for in-depth management analysis. It would require using an integrated strategic scorecard [54,59–62] or another management accounting instrument [63] like a Life Cycle Sustainability Assessment [64,65]. Such an integrated form could support managers not only in planning and controlling achievements for sustainable development, but also in an objective evaluation of them, as well as indicating model ways of implementing the strategy and its best results from benchmarking partners in a given industry. Identified goals and priorities in each of the perspectives of the scorecard would require a detailed construction of measures and indicators determining economic, environmental and social effectiveness, set as goals in the enterprise. Nevertheless, selection of measures and indicators for measuring achievements for sustainable development and ensuring their credibility would demand adjusting internal control mechanisms.

To determine the meaning of the features of sustainability accounting reports may be used the approach of GRI standards to reporting principles for defining report content, like (GRI 101):

- sustainability context—the report shall present the reporting organization’s performance in the wider context of sustainability;
- materiality—the report shall reflect the reporting organization’s significant economic, environmental and social impacts, and also substantively influence the assessments and decisions of stakeholders.
- completeness—the report shall include coverage of material topics and their boundaries, sufficient to reflect significant economic, environmental and social impacts, and to enable stakeholders to assess the reporting organization’s performance in the reporting period.

Rules for verifying the reliability of information from a sustainability accounting system

Rules for verifying the reliability of information are separate for data and reports prepared for the needs of internal and external stakeholders. Nevertheless, internal control is the basis for ensuring the basic characteristics of the information from the accounting system, which can additionally be verified during the audit of the extended financial report. In particular, accounting professional practice stresses the importance of accountability and the verifiability of environmental and social information in annual reports [56].

A schematic approach to the integration of sustainability accounting objectives as a basic element of its conceptual framework is shown in Figure 3.

Figure 3. Integration of sustainability accounting objectives as a basic element of its conceptual framework. Source: based on [7,11,12,15,16,42–44].

The schematic approach to the goals of sustainability accounting illustrates the main tasks of accounting in the corporate accountability system:

- measurement and evaluation of achievements for sustainable development;
- communications of sustainability results;
- control of the reliability of information.

The scope of the sustainability accounting subject is appropriately adapted to the needs of external reporting and its standardization as well as management needs. Thus accounting instruments need to be adjusted in order to assess the integrated efficiency of the sustainable business. As shown in the figure, accounting covers these areas and is the basis for the extensive reporting part, for reporting on achievements for sustainable development and its attestation dedicated for external stakeholders, and for management reporting, used by an internal stakeholder. Sustainability accounting thus creates its main corporate value drivers in the form of commitment of stakeholders, image and trust improvement, true legitimization, more transparency to stakeholders, all supported by integrated efficiency control. They all add corporate value through long-term profitability, risk reduction and realistic implementation of strategic sustainable goals. The management of sustainability performance determines also the financial success of sustainability, expected by the shareholders.

The conceptual approach to sustainability accounting assumes accounting aims at implementing the principles of sustainable development in its system, and requires taking into account a number of factors of a global nature, both macroeconomic and microeconomic (based on the approach presented in [16,20,21,26]). This determines the principles of sustainable development adopted in the organization and the organization's sustainable development strategy. At the same time, sustainable development principles and goals depend largely on macro- and mezo-politics, which determine the standardization, harmonization and legislation of sustainability reporting. These factors constitute in turn elements of the corporate accountability system built by an organization focused on the implementation of sustainable development principles. The adopted strategy is also a derivative of the size of the organization, its environment, industry, financial situation, capital links and reputation. Thus, sustainability accounting is expected to be a flexible system, reacting to changes in the internal

and external environment. At the same time it must be a normative and reliable base, reflecting the company's achievements for sustainable development (due to the normatives of sustainability accounting presented by [9,10,12,21]). Moreover, the proposed approach to sustainability accounting requires a perception of itself as a new institutional space in a sustainable enterprise in which it is to be integrated into the economic, environmental and social dimensions of corporate performance (which is consistent with the position presented in [7,12,27,33]).

Summing up the importance of the conceptual approach to sustainability accounting, it is assumed that accounting can invariably constitute a normative basis, reflecting socio-economic phenomena and taking into account environmental protection, social impact and ethical principles. The indicated approach does not present practical guidelines for the implementation of the model solution, but proposes the exemplary role of accounting supporting the management of the organization based on the implementation of sustainable development principles. Their use can be a valuable support for practitioners, regulators, as well as scientists. The proposed approach may help in the proper assigning of tasks to the business accounting departments, including reporting and management accounting, defining the scope and methods of measuring the implementation of sustainable development principles, as well as the valuation of individual property and result categories related to environmental aspects and aspects of social impact. Communication of reliable and comparable information about achievements for sustainable development can also support the settlement of the company's activities, expected by the company's stakeholders. Thus it can help to manage sustainable business. The conceptual approach of sustainability accounting may also help regulators and other organizations in creating standards for reporting on achievements for sustainable development. It may contribute to directing their activities to harmonize the way of measuring, communicating and verifying the disclosed results, including through the use of accounting for this purpose. For scientists in turn, the conceptual framework for sustainability accounting can set the benchmark in the topography of sustainability accounting research and also an incentive to conduct further research on the development of sustainability accounting. They can be a source of further research in the field of accounting theory, practice and policy.

5. Future Research of Sustainability Accounting

The conceptual approach of sustainability accounting may be the basis for further research on the development of accounting. It reveals many research areas—scientific, practical, functional, data processing, political, legal, ethical and social (Table 6).

The mentioned dimensions of research in the field of sustainability accounting are mutually complementary and permeate. Nevertheless, such perspective allows to concretize future research and can thus be valuable for the development of science, practice and normalization. The most difficult scientific challenge, filling the diagnosed theoretical gap, is the integration of economic, environmental and social outcomes resulting from the implementation of accounting principles, ensuring their credibility. Research into sustainability accounting may serve, in particular, to support the harmonization and standardization of reporting on achievements for sustainable development and its attestation, limiting the negative misinformation practice. It also requires consideration of political and legal aspects in this area. Thus, it would be particularly valuable to examine to what extent the work of reporting regulators for sustainable development takes into account (and will take into account in the future) the contribution of accounting representatives and to what extent the changes proposed by them in the standardization of reporting and its attestation may be obligatory.

The future development of accounting in the concept of sustainable development may also be influenced by research into sustainable business, including in particular how the financial markets in developed and developing countries react to disclosures about achievements for sustainable development and what the significance of the level of their assurance of their credibility for stakeholders is. For this purpose, it is necessary to implement the functional solutions of the basic accounting functions and indicate the scope of information about the company's activities for sustainable

development, which can be included in the economic measurement of the accounting system. In turn, due to the need for a multidimensional measurement and communication of sustainable development aspects, research into the processing of complex data from accounting systems (e.g., via Big Data, XBRL, the Internet of Things, artificial intelligence) may help to transform it into a more readable and understandable form.

Table 6. Dimensions and areas of potential research in the field of sustainability accounting.

Dimension	Research Areas
Scientific	Integration of economic, environmental and social results resulting from the implementation of accounting principles ensuring their credibility
Political	Implementation of the accounting policy principles at the global, macro and microeconomic levels, taking into account the concept of sustainable development
Legal	Standardization of sustainability accounting
Practical	Implementation of information expectations of the company's (internal and external) stakeholders; Support for settlement of economic, environmental and social responsibility of the company, ensuring the verifiability of its results
Data processing	Big Data, XBRL, the Internet of Things, artificial intelligence
Functional and institutional	Implementation of basic accounting functions: measurement and communication of economic, social and environmental results in a corporate information system
Ethical	Ensuring the reliability and verifiability of information from a sustainability accounting system as a basis for assessing ethical behavior
Social	Institutionalization of accounting, accounting in the context of institutional and social environment

Normatives, based on pragmatic orientation, can also determine the scope of institutionalization of the sustainability accounting system that allows the effective use of the appropriate instruments with appropriate recognition and acceptance of the limited information function of the accounting system. A particular challenge in relation to normative accounting research is to determine the meaning and limits of interdisciplinary accounting as a science, including solutions supporting the cooperation of an accounting system aimed at implementing the principles of sustainable development with other information systems. Moreover, an equally important area of future research in sustainability accounting is the social and ethical dimensions of sustainability accounting. They require accounting perception not only as a measurement system, but also as a social system that requires the implementation of an ethical approach to guarantee the values and principles expected by the company's stakeholders. It would also be particularly important to identify the links between morality, mentality, attitudes and activities of the management of the enterprise operating for sustainable development, which could limit the phenomenon of decoupling at the level of practice and policy, as well as objectives and their implementation.

The synergy effect of further research in each of the dimensions can significantly contribute to the further development of sustainability accounting.

6. Conclusions and Discussion

The manuscript presents sustainability accounting in the light of positive and normative accounting theory and proposes its conceptual framework as a normative solution. It is of cognitive nature—it recognizes trends in practice and normatives in this area, and then assesses the development of sustainability accounting as a science from the perspective of positive and normative accounting

theories. The article is also a conceptual research by the proposal of the author's framework to apply sustainability accounting as a normative solution in line with the concept of accountability.

The manuscript is a voice against "a blurred picture" of sustainability accounting [16] resulting from the changes taking place both in sustainability reporting and sustainability accounting. As indicated in part 2 of the manuscript, sustainability accounting is not keeping up with the rapid development of reporting. Despite many scientific and utilitarian studies (indicated in 2 and 3 parts of this manuscript), accounting still has not developed uniform principles and rules in an integrated approach that would systematically support sustainability settlement in sustainable business. This gap results from the lack of a consensus in determining the role of accounting in this area (f.e. [12,16,20]). According to Gray [20], the lack of a universally accepted accounting methodology in the concept of sustainable development results from its dynamic changes, including the extension of the subject, the widening of the group of stakeholders and their information expectations.

As indicated in the paper, there are still three key gaps in sustainability accounting development—theoretical, practical and methodological, and thereby there is the need to conceptualize accounting (indicated among others in [7,11,16,20,55]). The perspective of systemically oriented theories, including in particular legitimacy theory, stakeholder theory and institutional theory allows the author of the manuscript to indicate the main role of sustainability accounting. However, scientific literature determines it mainly in individual aspects of accounting, such as reporting, attestation of disclosed results, cost accounting or performance audits in the light of selected theories [3,6,23,31,37]. There are only a few studies with a holistic perception of sustainability accounting (i.e., [7,11,15,30,56,57]). Moreover, the analysis of the literature allows to indicate risks of sustainability accounting development—the risk is mainly related to unethical misinformation practices overshadowed by a broad umbrella of accounting and qualitative characteristics of the information from the financial accounting system, such as credibility and reliability. Thus, there is the need to set the boundaries of sustainability accounting, by indicating its goals, users, qualitative characteristics, subject, reports and its verification, and its place in the corporate accountability system.

The normative solutions in sustainability accounting research result from the need to standardize accounting in aspects not yet covered, as well as from the need to formulate and postulate methods for measuring and communicating the results of activities for sustainable development. The basic condition for the development of accounting is its unification and unambiguous determination of the importance of accounting in the accountability system (in line with [1,4,13,34]), which makes it possible to provide stakeholders and shareholders with credible information on sustainable development achievements [7,11,36,41]. As the manuscript shows, there are no normative solutions allowing accounting practices to keep up with the guidelines for reporting on achievements for sustainable development, including those incorporating environmental aspects and aspects of social impact into the accounting system. There are also no detailed guidelines on accounting instruments supporting business management striving to implement the principles of sustainable development, and the existing ones (e.g., [7,10,11]) have a very general nature. The current methods of measuring, controlling and reporting on the results of activities for sustainable development are rather on the borderline with accounting, and the boundaries, where accounting is reached, are neither specified by the authors in the scientific literature nor by practitioners operating in enterprises for sustainable development.

The manuscript is a new voice in the scientific discussion presented in English-language literature. It is an attempt to show the importance of sustainability accounting, its scope and functions, and consequently, to build a conceptual framework, and is a search for new knowledge about the possibilities of using accounting to settle businesses from the implementation of sustainable development principles. The sustainability accounting framework assumes that accounting is a process of information flows provided for management decision making, and at the same time an instrument of building a company's relationship with external and internal stakeholders of a sustainable business (which is in line with the position presented in the publication on sustainability accounting of the highest citations, such as [8,16,20,27]). The framework is to determine the role of sustainability accounting

as a source of reliable information about the company's achievements for sustainable development, directed to the needs of external and internal stakeholders, supporting the management process of a sustainable enterprise.

The author's concept presents how to expand the tasks of accounting in relation to its conventional approach by extending the accounting subject to financial and non-financial categories regarding social and environmental aspects. In line with the positive accounting theory approach, sustainability accounting is to be a tool of communication with various groups of company stakeholders, a certificate of the company's "moral maturity", legitimacy of sustainable business and an "information signal", confirming the removal of information asymmetry between stakeholders [16,27,32,33]. Therefore, the paper suggests the key elements of a conceptual framework for sustainability accounting following Conceptual Framework of International Financial Reporting Standards, i.e., sustainability accounting purposes, users of information generated from the sustainability accounting system, qualitative characteristics of useful information from a sustainability accounting system, the subjective scope of sustainability accounting, sustainability accounting reports, including rules for the recognition, valuation and presentation of elements of reports and rules for verifying the reliability of information from a sustainability accounting system. Under these assumptions, a model approach placing sustainability accounting in the corporate accountability system is presented. It also allows the author to indicate factors influencing sustainability accounting, and thus to present sustainability accounting as a derivative of macro- and mezo-politics, general accepted sustainable development principles, standardization, harmonization and legislation of sustainability reporting, and also of micro-politic and the entity's factors (like size, industry, financial situation, reputation), which determine the principles of sustainable development adopted in the organization and thus its strategy. The organization's sustainable development strategy, in turn, determines what is to be measured, how to measure it and how to control it. Such a holistic approach has not been found in the research so far.

So the main contribution of the paper to the existing literature is the proposal of a holistic approach to sustainability accounting as a normative solution, not indicated in the English-language scientific literature. It is developed on the basis of conclusions from the analysis of accounting development in the light of positive and normative accounting theory, and thus it incorporates many different approaches stated in the literature as a posteriori and a priori conclusions. This publication enriches the literature with the conceptualization of sustainability accounting in a structured approach to the model of a financial accounting framework with the dual treatment of accounting as an integrated system of financial measurement of economic, social and environmental aspects, and as a tool for strategic management. Thus the proposed framework of sustainability accounting may set the benchmark in the topography of accounting research. The sustainability accounting framework allows also to present potential research areas as the directions of accounting development (in scientific, political, legal, practical, data processing, ethical, social, functional and institutional dimensions) and thus the future direction of research into sustainability accounting.

The theoretical perspectives presented in this manuscript are somewhat simplistic and are not uncontestable. In order to reduce the complexity of the analyzed research problem, the author tried to limit the focus to the main conclusion of the theories. This choice unavoidably has omitted many profound insights regarding the implication of these theoretical concepts. Nevertheless, this article is a first attempt to demonstrate the possibility of a sustainability accounting framework, incorporating a specific structure, assumptions and objectives to ensure that external and internal stakeholders have credible information on sustainable development achievements generated in the accounting system. The author of the paper is also aware of the indicated conceptual approach of sustainability accounting as only the nucleus of a solution aimed at closing gaps in the development of accounting. However, accounting is still in the development phase, and it requires in-depth positive and normative research.

This paper may be a contribution to the ongoing discussion between scientists and practitioners on the subject of accounting changes under the influence of the growing importance of the concept of sustainable development. The presented conceptual approach for sustainability accounting is a

proposal of the way for accounting development, which enables accounting to be invariably a normative base reflecting social and economic phenomena, including environmental protection, social impact and ethical rules for communicating information. Its use can be a valuable support for a wide range of their users, including practitioners and regulators as well as scientists.

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