

Environmental, Social, and Corporate Governance. From Unascertainable Statements to Action Plan

Bartłomiej Gawin

University of Gdansk

Department of Business Informatics

Sopot, Poland

bartlomiej.gawin@ug.edu.pl

Jacek Winiarski

University of Gdansk

Division of Electronic Economy

Sopot, Poland

jacek.winiarski@ug.edu.pl

Bartosz Marcinkowski

University of Gdansk

Department of Business Informatics

Sopot, Poland

bmarc@ug.edu.pl

Abstract

Companies employ Environmental, Social, and Corporate Governance (ESG) reports to inform stakeholders on their activities and achievements regarding reducing carbon dioxide emissions and lowering electricity consumption. Whereas some frameworks for ESG reporting have been standardized, the capability to independently trace real actions undertaken leaves a lot to be desired. Despite the steady evolution of IT-powered analytics, the reliability of environmentally-targeted activity is still under threat due to the inability of translating publicity-targeted efforts into quantifiable measures. This short paper constitutes an attempt to lay foundations for backing up pro-ecological ESG statements with a realistic and validated action plan. To achieve this, a 3-cycled Participatory Action Research effort is being undertaken jointly with the staff of a Central European insurance group headquartered in Poland, EU. The paper outlines the research gap, the specific research design of the ongoing empirical study as well as the expected outcomes of the research endeavor.

Keywords: ESG, Decarbonization, Action Plan, IT-powered Analytics, Sustainability

1. Introduction

Information Technologies (IT) play an essential role in facilitating internal analytics and feeding data to a wide range of reports. Reports elaborated to inform investors are no exception. The substantive content of such reports (and thus challenges in terms of the mix of necessary data inputs) is only escalating in the contemporary world. The objective of merging conventional financial reports and non-financial reports on environmental (E), social (S), and corporate governance (G) performance into a single, integrated ESG report is to improve the information available to investors qualitatively [1] and to increase transparency on the commercial effects of corporate ESG activities [2]. “E”-related statements and declarations regarding the actual implementation of decarbonization strategies across companies could derive tangible financial and reputational gains from pro-climate action or misrepresentation of carbon emissions data [3]. Within the aforementioned section of ESG reports, corporate bodies set out their plans to reduce carbon dioxide emissions (commonly referred to as carbon footprint reduction) against a baseline (e.g. emissions and electricity consumption calculated in a specific reference year).

That said, companies lack adequate processed data and indicators to demonstrate their sustainable development in a reliable way. On top of that, the tools in place to effectuate the measurement of the effectiveness of the ESG strategy and subsequently fuel the analytical process are, in most cases, still very far from achieving maturity. It deserves to be recognized that Public Relations departments and high-level managers are keen to seize opportunities regarding broadcasting corporate targets for reducing carbon dioxide emissions. Yet the gap between these commitments and explicit activities in the field of decarbonization of enterprises remains unfilled – among others, due to the lack of rigorous validation processes of the declared indicators.

Thus, the essential problem identified in this paper pertains to the bulk of climate-related disclosure that unfortunately shifted from real-world data and measurable actions and is intentionally confined to theoretical performance goals. We aim to make those performance goals be backed up by real-world data. This is where information systems come into play. In practice, it is impossible to make the proclaimed indicators realistic and to reliably track their achievement without ensuring an adequate IT infrastructure in place. Collecting data on electricity consumption across individual, dispersed facilities without automated metering systems integrated using dedicated data aggregation devices that fuel the databases or Internet of Things solutions would be extremely labor-intensive, inefficient, and costly. The volume of measurement data for subsequent analytics supports the classification of this data as Big Data. Analyzing Big Data directly, again, would be wildly inefficient – hence any action plans aimed at implementing ESG strategies potentially draw handfuls from the potential of Business Intelligence solutions.

Given only a very limited number of scientific reports and grey literature attempted to address the ways companies respond to planning ESG strategy execution, the following research questions arise:

RQ1: *What should be included in the “E” part of an ESG strategy for companies that own/operationally use hundreds of buildings and premises for their main businesses?*

RQ2: *How to develop and work with the action plan to effectively and reliably monitor the implementation of a declaration covered by an ESG strategy?*

After the Introduction, an overview of the related research is presented. Subsequently, the research design behind the ongoing empirical study is presented and the projected deliverables of the study are outlined.

2. Related Research

More and more companies are faced with the necessity to evaluate against the environment, social, and governance (ESG) criteria by sustainability rating agencies [4]. Publishing non-financial statements is not only a matter of publicity. For instance, large entities that operate across European Union Member States’ markets and surpass a specific employee threshold are legally obliged to do so, although individual countries have some flexibility regarding the way the directive is implemented on a national level [5]. Bose highlights that diverse ESG reporting standards have emerged: just to name the Global Reporting Initiative (GRI), Task Force on Climate-related Financial Disclosures (TCFD), International Integrated Reporting Council (IIRC), or the Sustainability Accounting Standards Board (SASB) [6]. The development of frameworks and standards constitutes an iterative process that evolves in a continuous way. At this stage of advancement, it is too soon to judge whether the frameworks for delivering ESG disclosures shall evolve into a single global standard.

Embedding an environmental component into strategy is a noteworthy spot where companies fall short vis-à-vis sustainability. Chief Executive Officers tend to address this gap by stating that their companies have a sustainability strategy in place, which boils down to general sustainability reporting, setting footprint reduction goals, and a set of ad-hoc programs and initiatives. Unfortunately, as highlighted by Couckuyt and Van Looy, self-reported data come with the risk of introducing a bias related to possible overstating the extent of green initiatives by management boards; on top of that, this sort of data tends to

be highly subjective [7]. Just as overconfident managers tend to exploit ambiguity within financial statements to mask the decisions that come with disproportional exposure [8], it would be irrational to expect that ESG disclosure will be resilient to manipulation – especially when the methodology is far from the state-of-the-art. As a matter of fact, in the experience of Hedstrom, the vast majority of companies lack a process that reliably hard-wires the most material ESG issues to its corporate strategy [9]. Companies have been satisfied with providing selective and incomplete information in the past [10,11,12]. The requirement for third-party verification of reported non-financial data for manipulation is not common even within the European Union, and the penalties primarily relate to the general absence of such information [5].

To make matters worse, practitioners are forced to navigate through a maze of frameworks and best practices for building climate-related indicators as well as principles that aim to facilitate businesses in reporting environmental information [6]. These include best practices from the Climate Disclosure Standards Board (CDSB), Task Force on Climate-related Financial Disclosures (TCFD) – as well as the Carbon Disclosure Protocol (CDP), a sustainability reporting framework that collects data via a detailed annual questionnaire sent to firms that cover emissions metrics, strategy, governance, and climate risk management [13]. Even disclosure such as the CDP remains unaudited in large parts, and companies have been found to employ a variety of methods for disclosing both direct and indirect emissions, potentially rendering this information unreliable [14,15]. This contributes to carbon-related data currently being measured and reported with many practices around that are focused on achieving the zero-emission target. The latitude in measurement and evaluation of carbon performance leaves space to misrepresent corporate capabilities and efforts to reduce carbon emissions with low levels of transparency.

Development of sustainability reporting standards and monitoring systems has been progressing at a slow pace despite shareholders' encouragement for better disclosure and more serious attempts at a third-party measurement of companies' environmental footprints. The suitability of voluntary and mandatory disclosure systems for transparency is still under debate [16]. Real actions being taken, validation, and impact monitoring rather than vague announcements and promises represent key transparency components and high levels of trust in carbon reduction commitments [17,18]. ESG ratings have also attracted considerable criticism on data quality [19, 20], the validity of ESG ratings [21,22], and the lack of commonality for the measurement of social and environmental responsibility [23] in the past. Such observations raise considerable doubts regarding the maturity levels that firms' ESG performance is being defined, measured, and framed [4]. In our view, this represents a non-trivial research challenge, especially when juxtaposed with the potential to digitize even individual-level behavior unheard of prior to Big Data solutions and the Internet of Things era [24].

3. Method

When narrowing down the portfolio of research methods in terms of comprehensively addressing our research questions, the Design Science Research (DSR) [25] was considered to be among the most viable ones. DSR enables researchers to engineer and evaluate a wide range of artifacts – such as methods, algorithms, guidelines, or patterns – to support a specified problem domain with innovative and practically applicable solutions [26]. However, early on in the design stage of the initial DSR artifacts, the research team realized that refining and implementing them would be an iterative process and would require a joint effort from researchers and business stakeholders. Thus, in order to fill the gap regarding action plan development for ESG strategy, the Action Research method was ultimately employed instead. While Action Research has never been a unified approach to inquiry, it is a collaborative research strategy based on a bold claim that effective learning comes through the process of trying to change things [27]. Therefore, action researchers avoid framing projects as mere data sources for objective generalization upon their completion – but rather believe that gaining reliable knowledge might only be achieved situationally and interpretations of the stakeholders are as central to the process as those of

the scientists [28].

Barata, da Cunha and Melo-Santos highlight some critical features of the Action Research approach based on relevant literature [29]:

- it involves improving a problematic situation in a target organization;
- it provides feedback to the scientific knowledge;
- the action researcher is actively engaged in the intervention along with industry experts;
- both researcher(s) and the organization expect to gain some benefits;
- AR is cyclic in nature;
- learning process in fact occurs during the entire research cycle.

The research plan used involves boosting the scientific rigor through applying the Participatory Action Research (PAR) variation of the said method (see Fig. 1) and carrying out three complete research cycles. In the PAR approach [30], each of multiple cycles brings the collaborating academics and professionals increasingly closer to the target solution and adopts a mini-waterfall design. Thus, at the beginning of each waterfall, an overarching problem is identified, which often involves posing working hypotheses. Here, a special responsibility lies with the researchers, in their capacity as observers external to the specific economic organization, with expertise and independent perception of the problem at hand. Next, the *action planning* phase allows the team to meticulously consider potential paths to solving the posed problem and prepare actual intervention within the hosting organization. This is usually where the more developed yet localized skills of the organization's staff are balanced with much wider experiences of researchers that were gained across other studies within the domain. Once an organizational change has been implemented, *evaluating* the effects of the change follows. It is not always possible to achieve all the partial objectives, which may then be addressed in possible subsequent cycles. Each mini-waterfall is concluded with *specifying learning*, where the team comes up with general findings of a given cycle.

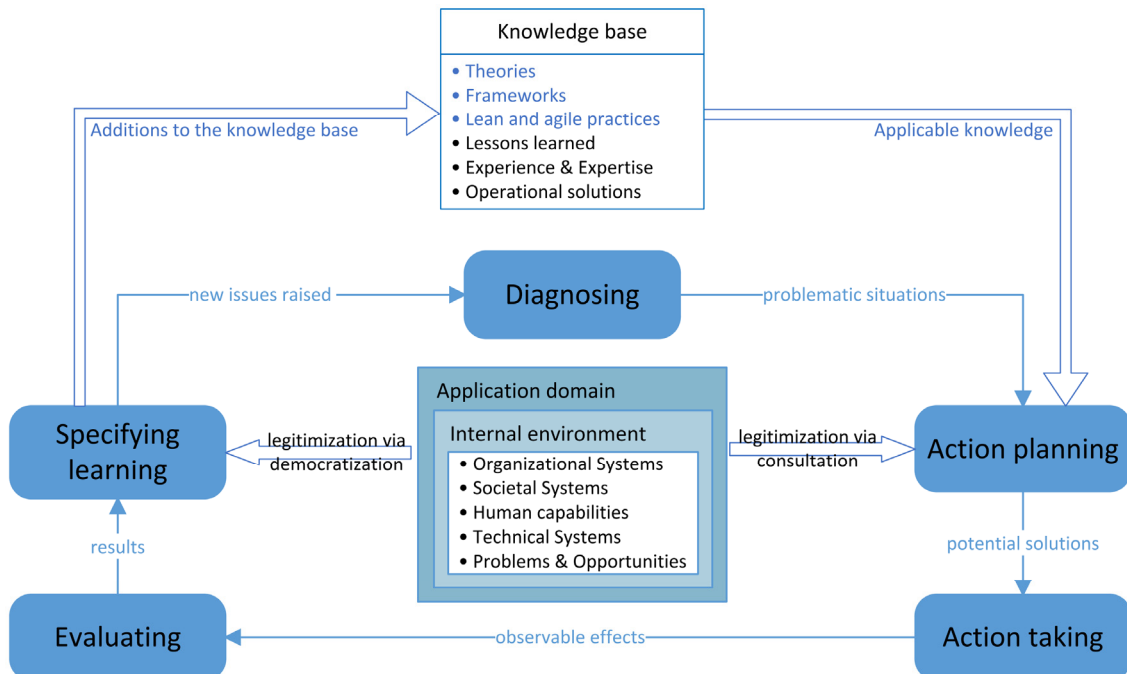


Fig. 1. PAR research framework [31].

A far-reaching collaboration was initiated with one of the leading Central European insurance groups headquartered in Poland, EU, which has henceforth acted as a business partner in the effort. The authors administrated research and undertook joint actions to implement a pragmatic business intervention together with five Facility Managers. The capital group has committed to enhancing the energy efficiency of its operations and a

continuous reduction of greenhouse gas emissions (including CO₂) both for the capital group, but also for key contractors, subcontractors, and customers (until 2050). At the basis of this overarching goal, there are sub-goals, the enactment of which is closely tied to the achievement of pre-set milestones. The first of the milestones comes in the year 2024. The following indicators were developed to determine the extent to which boosting the energy efficiency proved successful: (1) reduction of direct CO₂ emissions from own sources by 3% to 10% compared to 2019; and (2) reduction of electricity consumption from 3% to 10% compared to 2019.

4. Expected Outcomes

As the first cycle, i.e. *Baseline Analysis* is concerned, the priority was to review the officially stated ESG strategy of the business entity under research and to focus on the environmental elements (“E” component of the ESG). Within the ESG strategies, companies declare the achievement of indicators related to the reduction of electricity consumption and CO₂ emissions at indicated levels and at a given time. The reduction is commonly quantified relative to a fixed baseline year (e.g. the carbon footprint and electricity consumption in 2019 are calculated and the reduction for 2021 is premeditated against this ascertained level). The first challenge is therefore to capture the carbon footprint and electricity consumption in the base year with relatively high accuracy. It soon became apparent that this task is highly IT-dependent: it requires the selection of appropriate data, identification of their sources and the method for collecting, and finally development of relevant algorithms. The second challenge is to assess whether the current plans and resultant activities for the future will make it possible to fulfill the intended declarations. Therefore, the goal of the first PAR cycle was to unambiguously capture the “as-is” state of the ESG strategy in place along with the complete set of environmental indicators that the business partner has explicitly or implicitly declared to achieve at a specific time and by acting in specific areas (see Table 1).

Table 1. Empirical study design.

	Baseline Analysis	ESG strategy action plan development – draft version	ESG strategy action plan development – target version
Diagnosing	ESG strategy review, identifying key environmental statements and baseline values for CO ₂ emissions and electricity consumption; identifying KPIs and ways to achieve them.	Estimation of the degree of achievement of KPIs at the end of y+1. Verification of the correctness and dynamics of the implemented activities in relation to the declaration for 2024.	Identification of necessary changes within the corporate actions of the company in order to adopt an ESG strategy action plan.
Action Planning	Specifying data and information sources to identify pro-ecological activities; defining collection methods; planning offline meetings and online workshops.	Developing a method for estimating the values of indicators at the end y+1.	ESG strategy action plan preparation.
Action Taking	Collecting data and information, online workshops, and offline meetings.	Estimation of KPI values.	Developing a list of additional activities to be performed. KPI values achievement estimation till 2024.
Evaluating	Developing a list of activities undertaken to implement the strategy. Indication of numerical values describing the activities performed.	Comparison of the calculated values of CO ₂ emission reduction and electricity consumption in y+1 against the benchmark year.	Comparison of the estimated values of CO ₂ emission reduction and electricity consumption in 2024 to the benchmark year.
Specifying Learning	Usefulness evaluation of the data and information for verbal and numerical description of the pro-ecological activities undertaken.	Assessment of the dynamics of achieving KPI indicators. Pro-ecological actions assessment.	Assessment of the dynamics of achieving KPI indicators.

The second research cycle, namely the *ESG strategy action plan development – draft version* focuses on developing the action plan aimed at putting the strategy to work. The action plan addresses:

- specific actions that ought to be taken into account when implementing the strategy;
- data sets that are required to calculate the current carbon footprint;
- sources of aforementioned data;
- algorithms and ways to come up with footprint-related calculations;
- ways to reliably visualize or provide a summary of the quantitative work.

The expected outcome of the second PAR cycle is to deliver a draft version of the ESG strategy action plan. This shall be followed by the final research cycle (*ESG strategy action plan development – target version*) dedicated to elaborating the detailed and refined ESG strategy action plan.

Through carrying out the remaining PAR cycles, we ultimately intend to increase the maturity and credibility of the environmental component of non-financial reporting. We will scrutinize the initiatives and actions that medium and large companies can potentially undertake to reduce the carbon footprint, inspect their impact on the indicators, as well as propose best practices for revealing such measures within ESG statements.

5. Conclusions

The implementation of ESG strategies requires collecting reliable data and providing automated IT solutions for processing as well as visualization of those. This practically means that it is vital to develop and integrate multilayer analytics-targeted IT architectures, in which *Layer 1* provides: (1) primary data regarding electricity (and other media) consumption across buildings (Building Management Systems; BMS); (2) secondary data from purchasing and investment management systems (Enterprise Resources Planning; ERP); and (3) other digital data sources. As *layer 2* is concerned, mechanisms for retrieving data from available sources and embedding them in an analytical data warehouse need to be put to work. *Layer 3* supports data analytics algorithms in order to monitor the implementation of the proclaimed indicators with a given frequency, following their historic values and trends. *Layer 4*, in turn, introduces data visualization tools in the form of aggregated tabular and graphic reports, enabling ongoing monitoring of the implementation of the ESG strategy for both analysts, specialists, and management staff in the organization.

It is important to note that engaging a business partner of an adequate scale of business operations and needs being representative for companies of similar profile to develop an action plan using the PAR method is associated with certain external threats to validity. This method used enables deep-diving into actual business challenges and facilitates translating the results into business practice, however, one should be cautious when generalizing the results without launching similar studies across diverse industries [32]. We acknowledge this to be a limitation of our ongoing study.

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