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## Extending corporate sustainability reporting indicators to projects' sustainability

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### Abstract

Measuring the sustainability performance of an organisation is a rather complex task. This study aims at analysing a broad number of performance indicators related to the economic, environmental, and social pillars of the Triple Bottom Line (TBL) framework and evaluates their applicability toward the development of a sustainable performance measurement system (SPMS) of projects. To this purpose, an analysis of the annual sustainability reports of the listed EURO STOXX Sustainability 40 companies was conducted, identifying the sustainability indicators incorporated in each individual report, and classifying them according to the three pillars of the TBL framework. The analysis of the reports yielded 67 economic indicators, 109 environmental, 130 social, and 38 additional ones, mainly combining the latter two categories, giving 344 unique indicators in total. The proposed system, based on empirical evidence, recommends that selected indicators for an SPMS for projects should relate to predefined subcategories. These are costs, efficiency, and shareholder return for the economic dimension; emissions, energy, paper, resource consumption, waste, and water for the environmental dimension; diversity & equality, ethical behaviour, external commitment, health & safety, training & development, and working conditions for the social dimension.

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## 1. Introduction

Organisations need to incorporate sustainable practices into all business activities; however, the current business practices bring many challenges in order to satisfy the requirements of sustainability [1]. Moving towards sustainability, requires radical changes inside the organisation as the three pillars of sustainability have to be incorporated into all business activities [2]. The practice of revealing data about a company's environmental, social, and governance (ESG) performance and impacts is known as "ESG reporting." ESG metrics are non-financial measures used to assess a company's ethical and sustainable business practises. ESG reporting offers transparent information on a company's ESG practices and their effects on the environment and society to stakeholders, including investors, employees, customers, and the general public. The European Union (EU) established sustainability reporting guidelines to improve the accuracy of business Environmental, Social, and Governance (ESG) reporting inside the EU. The disclosure criteria on how ESG factors are to be displayed for each relevant benchmark published by a benchmark administrator are set forth in Annex 1 to the Commission Delegated Regulation (EU) 2020/1816 and they are addressed in the ESG factor definitions for equity indices [3] and the benchmark statement of STOXX indices [4]. Moreover, on January 2023, the EU has issued a new directive, the Corporate Sustainability Reporting Directive (CSRD), that will come into effect in 2025 dictating all listed organisations and those employing more than 500 people to disclose their sustainability reports in compliance to European Sustainability Reporting Standards (ESRS) [5].

Among the most critical business activities that contribute to achieving these changes, are projects [6]. They are seen as the ideal instruments to realise change inside the organisation or across organisational boundaries [7, 8]. Therefore, a shift towards sustainability in project management has a tremendously positive effect on the overall business world. Further, projects form 20% of the global economic activity [6], revealing that there is an increasing interest by professionals in using sustainable practices in project management [9]. However, there are several difficulties in managing sustainability in project management. Given the increasing complexity and the presence of trade-offs by incorporating sustainability in all project phases, sustainability is a significant challenge for project management [10]. Therefore, the intersection of those two fields is still rare with rather limited studies including both topics [11].

A considerable amount of research needs to be conducted in order to help companies and project managers to successfully integrate the elements of sustainability into their current project management practices. Thus, it is primarily necessary to identify which measures should be adopted to evaluate and track the effects of integration [10]. In an effort to include sustainability in performance measurement systems of projects, the initiatives proposed are, therefore, lacking concrete operational terms [12] because the development of sustainable performance measurement systems (SPMS) is challenging as each project is unique in its structure and task [13]. Thus, companies find it difficult to include and compare the aspects of sustainability in project management [14].

This study aims to contribute to the body of knowledge in SPMS by analysing the annual sustainability reports of the listed EURO STOXX Sustainability 40 companies, identifying the sustainability indicators incorporated in each individual report, and classifying them according to the three pillars of the Triple Bottom Line (TBL) framework. The research questions addressed in this paper are:

- How do companies practically assess their performance regarding economic, environmental, and social issues?
- Could the sustainability performance indicators used to assess organisations be applicable to project management?
- Based on the above, how can project management fraternity measure the project's performance regarding sustainability at the operational level (post-implementation)?

The current work has some limitations. Being part of a wider project, the current study investigates sustainability practices and indicators in the pre-Covid-19 era, hence the annual reports of the year 2019. The project aims to evaluate whether and to what extent there have been changes in the way sustainable organisations altered the significance of

indicators in measuring their sustainability performance post-pandemic. This aim will be accomplished once the post-pandemic annual sustainability reports are analysed. Another limitation is the fact that no specific industry is represented strongly in the EURO STOXX Sustainability 40 Index, since no more than five companies can be included in any single industry comprising this index and therefore, no generalisations for an industry or sector could be made at this stage. Last, the governance component of ESG has not been analysed since the research focuses on the classification of indicators based on the three TBL pillars, although some of the identified ones connect to it.

## 2. Theoretical background

The performance of a project is monitored in various ways, from standards published by organisations to methods as key performance indicators, benchmarking and other metrics [15], whereby the focus always relies on the three primary objectives – cost, time and scope [16]. Within some sectors, for instance in construction, sustainability indicators already have been applied for project performance measurement [17]. In most other industries, however, companies assess their general sustainability performance, whereby they mostly adopt previously ESG reporting frameworks developed models and frameworks such as those from the Global Reporting Initiative (GRI), the Sustainable Development Goals (SDGs) from the U.N. Department of Economic and Social Affairs or the International Organisation of Standardisation (ISO) [1]. However, a sustainable performance measurement system (SPMS) for projects should be balanced and integrated [17]. It should be tailored to the company's strategy and at the same time to represent the stakeholder's needs. Further, it should describe all areas affected by sustainability and the intersections that result [10].

The integration of sustainability in project management tremendously increases the complexity in all project stages and it stands in contradiction to some already established practices, nevertheless the need to transform the traditional methodology is now evident [18]. The transformation from conventional to sustainable project management, therefore, has to evolve over decades, and it will be challenging. Researchers and project managers have to make use of all expertise available and redirect their way of thinking [7]. Further, to make the integration of sustainability in project management successful, it is primarily necessary to develop new tools and practices, whereby at the beginning performance measurement with sustainable performance indicators is indispensable as they highlight the status of sustainability and areas for further improvement [19].

### 2.1. Sustainable performance measurement systems of projects

Several approaches towards organisational sustainability helped companies to face the challenge of integrating sustainability in business operations, in particular performance indicators [20], because “what gets measured get managed” [21]. By measuring the sustainable performance, companies can monitor and control the progress made, and thus positively contribute to sustainable development inside and outside corporate boundaries [22]. Therefore, companies need to assess the sustainability performance of projects in order to successfully integrate sustainability in project management. Given the importance of the topic, the literature on SPMS for projects is surprisingly limited, mostly because the actual performance needs to be measured, which requires an agreement on a broad set of performance objectives and clear, quantifiable indicators throughout the project process [23]. However, sustainable performance measurement is widely discussed for measuring the success of the entire business or for other business practices, for instance in purchasing or supply chain management [24]. As such, the implementation of sustainable performance measurement in project management practices is long overdue.

An SPMS measures the success of a business or dedicated area in an integrated, comprehensive way for the prosperity of all stakeholders [25]. It is a handy tool to determine the performance of projects, and it can lead to improved project management [10]. However, the development of SPMS is somewhat challenging because the identification and selection of performance indicators, which enable the performance measurement process, is challenging to carry out [12].

The earliest application of business performance measurement systems in literature emerged from accounting with a strong focus on financial performance [26]. Over time, this practice enlarged to encompass non-financial measures because economic indicators do not sufficiently evaluate a business' performance [20]. Later, it included sustainable

performance, first, by using the stakeholder theory as a theoretical basis for SPMS, and then by utilising the Balanced Score Card (BSC) and the TBL as suitable performance measurement tools [27]. In this regard, several practices to develop performance measurement systems and at the same time, ready-to-use frameworks are presented.

In practice, companies receive increasing pressures from various stakeholders to account for their sustainability performance publicly, putting the measurement of sustainable performance as a strategic priority on management agendas worldwide [21]. Organisations need to communicate the resources and how they are used, and further expound the outcomes and the effects in long-term. Thereof, sustainability should be integrated into the annual report of the company by stating both financial and non-financial performance indicators [28].

### **3. Research methodology**

#### *3.1 Research sample*

To gain practical insights and to ensure operational applicability, this study evaluates the sustainability performance from a sample of annual reports. Annual reports are presented as a reliable source for examining the disclosure of information from the perspective of sustainability integration [28], and as further, each public limited company is legally obliged to publish their financial and non-financial statements [29]. Thereof, for the systematic review of public disclosures, secondary data from major sustainability-oriented companies for the financial year 2019 was gathered. The sample of companies was selected on the basis that they are listed in the EURO STOXX Sustainability 40 in July 2020. The index was chosen for data collection because it offers a representation of the largest sustainability leaders (long-term environmental, social and governance criteria) in the Eurozone [30]. Therefore, it can be assured, that through the size of the companies, general reporting standards are fulfilled, and through the inclusion into the index, the companies follow an environmental and social mission throughout their commercial activities. To mitigate country and industry-specific trend, the index encompasses stocks from eight Eurozone countries in July 2020: Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, and Spain; and represents a variety of industries, e.g. Food & Beverage, Health Care, Industrial Goods & Services, Insurance, Personal & Household Goods and Technology.

#### *3.2. Data analysis*

To analyse the practical contribution from the 40 annual reports of the companies listed in the EURO STOXX Sustainability 40, a first reading was conducted. The annual accounts were scanned by searching for the performance indicators used, whereby a particular focus was given to environmental and social performance indicators. By carefully reading and highlighting essential textual components, the primary metrics used to measure sustainability were identified. Subsequently, the reports were scanned to search for utilised performance measurement systems, e.g. GRI, SDGs and others. Once the indicators were identified, they were sorted according to the topics: economic, environmental, or social. Afterwards, a list for each pillar was generated, whereby duplications were removed. At the same time, the frequency and the characteristics of each indicator were determined to gain a better overview of which indicators are most popular among organisations. Further, similar or even related indicators are grouped for getting a comprehensive understanding of the themes addressed by the indicators. Finally, the identified indicators were scanned for their applicability in project management.

### **4. Findings and Discussion**

#### *4.1 Classification of the sustainability indicators of the listed companies according to the TBL pillars*

During the examination of the annual reports from sustainable companies, a wide range of indicators was identified. The 40 companies included in the review come from a variety of industries as well as from different countries to mitigate industry and country-specific trends that might arise. Of the 14 industries presented, none is exceptionally stronger represented than the others (Table 1). The majority of the companies are from France (14 companies) and

Germany (10 companies), followed by Spain (5 companies) and the Netherlands (4 companies). The rest of the countries are only marginally represented.

Table 1. Industry and country overview of the EURO STOXX Sustainability 40 on July 2020

	France	Germany	Spain	Netherland	Italy	Finland	Ireland	Belgium	TOTAL
Technology		1	1	1		1			4
Industrial Goods & Services	1	2				1			4
Utilities	1		1		1				3
Personal & Household Goods	2	1		1					4
Retail	1		1						2
Financial Services		1							1
Healthcare	2	1		1					4
Insurance	1	2			1				4
Construction & Materials	1						1		2
Food & Beverage	2			1				1	4
Media	1								1
Telecommunications	1	1	1						3
Chemicals	1	1							2
Banks			1		1				2
TOTAL	14	10	5	4	3	2	1	1	40

All companies reported on their sustainability performance. They published their sustainability disclosures in a variety of formats, with some companies addressing the topic in textual components, while others highlighting specific indicators for economic, environmental, and social performance measurement. Further, each organisation had its style of measuring and reporting its sustainability aspects. Some companies used one or a variety of standardised measurement systems with predefined indicators as the ‘Global Reporting Initiative’, the ‘United Nations Global Compact’ the ‘Sustainable Development Goals’ and/or the ‘International Organisation of Standardisation’ for developing their SPMS. All companies have omitted the general management systems. This could be attributed to the fact that the standardised methods propose a range of indicators and therefore, provide a basis for further development, while the management systems only give structure and direction [31].

Due to the different environments and the individual needs of the companies, each company had set different priorities in its evaluation process. For instance, the proposing company only measures a couple of indicators in all categories once, as they were only developed explicitly for the company. Other indicators, however, are mentioned more often. This phenomenon is because the same standards are used for development, and the indicators used are kept as simple as possible to be easily understood and applied [23]. The analysis of the annual reports yielded 67 unique economic indicators, 109 environmental, 130 social, and 38 additional ones, which cannot be classified under a single pillar as they usually presented a combination of more than one pillars. This sums to 344 unique indicators in total. Table 2 presents the number of indicators per pillar of each company listed in the EURO STOXX Sustainability 40 Index. We can observe that an average of 27 sustainability-related indicators per company could be identified.

#### 4.2 Applicability of the sustainability performance indicators to project management

Many indicators from the public disclosures regarding the economic pillar are related to the balance sheet or the profit statement. It is apparent that the most crucial aspect of the economic/financial situation is to track the occurring costs. This includes control of the current assets, the project’s budget and the capital investments, and the accuracy of cost predictability, where it is also recommended to measure the efficient use of the financial resources [16].

Table 2. Frequency of indicators identified per company

Company	Economic	Environmental	Social	Other	Total
SAP SE	8	6	3		17
Schneider Electric SE	6	12	13	4	35
Iberdrola S.A.	12	8	12	1	33
L'Oréal S.A.	10	4	3	3	20
ASML Holding N.V.	6	8	15	1	30
Enel S.p.A.	11	6	9	1	27
Kone Corporation	10	11	7		28
Siemens AG	5	7	13	1	26
Kering S.A.	8	10	8	1	27
Deutsche Börse AG	9	5	11		25
Essilor Luxottica S.A.	10	15	13	4	42
Allianz SE	5	17	15	2	39
Munich RE	9	29	19		57
AXA S.A.	5	15	22		42
Unilever N.V.	8	11	13		32
Cement Roadstone Holding plc	7	13	16	1	37
Pernod Ricard S.A.	5	2	2	1	10
Vivendi S.A.	8	11	17		36
Deutsche Post AG	7	4	7		18
Moët Hennessy - Louis Vuitton SE	9	11	13	1	34
Deutsche Telekom AG	9	13	15	2	39
Industria de Diseño Textil S.A.	7	5	5		17
Sanofi S.A.	9	3	5		17
Vinci S.A.	7				7
Heineken N.V.	10	9	7	2	28
Nokia Corporation	8	4	6	1	19
Assicurazioni Generali S.p.A.	6	2	7	1	16
Amadeus IT Group S.A.	8	9	13		30
Air Liquide S.A.	8	3	2		13
Adidas AG	10	7	6	2	25
Danone S.A.	6	9	7	2	24
Orange S.A.	7	5	5		17
Banco Bilbao Vizcaya Argentaria S.A.	12	14	27	3	56
Intesa Sanpaolo S.p.A.	10				10
Linde plc	8	1	4		13
Telefónica S.A.	8	16	22	3	49
Engie S.A.	7				7
Bayer AG	11	6	6		23
Koninklijke Philips N.V.	8	13	6	1	28
Anheuser-Busch InBev N.V.	5	7	6		18
<b>Total</b>	322	331	380	38	1071
<b>Mean</b>	8.05	8.28	9.50	0.95	26.78

Further, for most projects it is highly necessary to have an overview of the impact generated by the project's outcome, for instance by measuring the percentage of revenue or sales growth, the market share, or positive effects in the local economy; whereby mostly only the financial returns for the project sponsors are calculated.

By considering the proposed environmental-related indicators, the sustainability reports discuss the issues of energy and water consumption, emissions and waste generated, and the resources used. However, some of the 344 indices, discovered by the evaluation of the annual reports, cannot be applied to project management. They are either related to the end product, which is different for each project and not always tangible, or they refer to the characteristics of properties or sites, which do not primarily affect the project's doing. Further, other non-applicable indicators were sorted out because of their particular nature, e.g. '% of farmers which empowered a new generation'. Other indices would need to be modified to fit the performance measurement of projects, mainly by limiting employees to project team and to measure the CO<sub>2</sub> and energy savings of the product and the services used. Table 3 illustrates the five most common indicators of the three sustainability pillars.

Table 3. Top five (most frequent) indicators per sustainability pillar

Economic	% of companies reporting the indicator	Environmental	% of companies using the indicator	Social	% of companies using the indicator
Net profit (€)	75.0	Water consumption (m <sup>3</sup> )	65.0	% of women of total workforce	67.5
Total revenue (€)	55.0	Energy consumption (kWh)	55.0	% of woman in management	62.5
EBITDA (€)	47.5	% of renewable energy of total energy	52.5	Workforce age structure (by age group in %)	37.5
Earnings per share (€)	45.0	CO <sub>2</sub> emissions (metric tons CO <sub>2</sub> e)	52.5	% of women on the Board of Directors	25.0
Dividend per share (€)	40.0	Waste generated (tons)	40.0	Employee turnover rate (%)	25.0

Regarding the social aspects of the indicators identified, the reports pay great attention to the health and safety efforts, the ethical behaviour, the social commitment, the fairness of labour practices, and the adherence to human rights. However, indices focusing on training and development are incredibly scarce in relevant literature. On the other side, there is a small number of indices, which do not suit the social contents of project management. These are either related to the company in general, measure the external social commitment, or aim at the overall working programs. Further, the indicators '% of women on the Board of Directors', 'number of scholarships awarded' and 'promoted employees per gender' are also not applicable for project management practices. To continue to enhance the applicability of the proposed social indicators, most of them need small modifications to fit in the project management area. Almost any other indicator of this category needs the add-on 'of the project' to correctly serve the project management area. Additionally, the term "employees" have to be replaced by "project team members", and the terms "managers" or "leaders" by "project manager" or "team leaders".

#### 4.3 Developing the constituents of a performance measuring framework for project sustainability

The primary focus of a project performance measurement relies on the three primary objectives – cost, time and scope [16]. Achieving the required outcome is defined as the minimum level of success for a project, followed by adherence to budget and time requirements [20]. Including sustainability as the fourth main objective, it must be

considered as equally important as the other objectives. However, measuring sustainability performance is highly challenging to carry out, as it requires an extended range of performance indicators [7].

The measurement system for evaluating a project's performance regarding sustainability should be applied during the fourth project stage – the project monitoring and controlling phase. However, the evaluation criteria need to be selected during the initiation stage, so that the indicators can be targeted to the project's context and the stakeholders' needs, and therefore, have the most influence on the project's success [32]. Further, due to the early development of the measurement system, the indicators must be communicated through all project levels, which would tremendously increase its transparency [7].

Table 4. Performance indicators to measure project sustainability

<b>Economic</b>	<b>Indicative measures</b>
Costs	Material costs, Operational costs, Personal costs, Administrative costs
Efficiency	Cost/ income ratio, Efficiency ratio
Shareholder return	Return on investment, Internal rate of return
<b>Environmental</b>	
Emissions	Amount of CO2 emissions, Greenhouse gas emissions, Business travel related to the project
Energy	% of renewable energy of total energy consumption, Total energy consumption, Energy efficiency
Paper	Paper consumption
Resource consumption	% of sustainable raw materials, % of environmentally friendly supplier
Waste	% of recovered, reused, or recycled waste, Total waste generated
Water	Total water consumption
<b>Social</b>	
Diversity & equality	% of women in the project team/ in the project management, Project teams age structure, % of disabled worker working for the project, Internal pay ratio
Ethical behaviour	Number of ethical breaches
External commitment	Population impacted by the project, Share of donations to project costs
Health & safety	Absenteeism rate of the project, Number of work-related accidents/fatalities during the project,
Training & development	Hours of training per project team member, % of project team members received training, Total training expenses spend for the project
Working conditions	Projects turnover rate, Employee Net Promoter Score

By developing a performance measurement system, it is primarily necessary to be aware of the uniqueness of the company, its surroundings, and the singularity of the project, which gets measured [33]. Thereof, the SPMS needs to be unique and specific, too. It has to be adapted to the internal demands of the organisation and at the same time, to address the needs of all stakeholders [34]. Further, measurement systems should consider and balance out occurring trade-offs, especially regarding the integration of sustainability in project management practices [7].

Various sustainable performance measurement criteria are disclosed in the extant literature and from practice. Therefore, companies can choose from a variety of different indicators to successfully measure the sustainable performance of their projects, and to allow targeting their projects' needs precisely.

The proposed framework (Table 4) is divided into the three pillars of the TBL: economic, environmental, and social. Further, each category is split into different subcategories. For the economic pillar, the subcategories represent the financial measures identified, which were most suitable for project management practice. Thereof, the costs, the efficient use of the financial resources and returns for the project sponsors are measured. For the environmental and social pillars, the subcategories are the most mentioned areas identified during the evaluation of the public disclosures.

The project manager can individually choose the indicators for each subcategory in the example regarding the specific needs, whereby also the number of indicators is variable. For instance, larger projects might require a broader and more complex measurement system. In contrast, for small projects, it might be useful to limit the number of indicators to avoid disproportional paperwork. Thereby project managers should not over monitor the sustainability performance.

In this case, for bigger subcategories, e.g. costs, emissions, energy, diversity & equality, health & safety as well as training & development, more indicators are used to represent the content better. For each subcategory, selecting indicators that were mentioned more frequently during the practical evaluation, is more preferable than selecting those



mentioned less frequently. To successfully measure and compare the sustainability of a project, each indicator should be linked to a target figure. For example, 33% of women in the project team or a grading system e.g. <10% of women in the project team = 1 point; 10% - 20% of women in the project team = 2 points; 20% - 30 % of women in the project team = 3 points and > 30% of women in the project team = 4 points. This will ensure the measurability of progress made and at the same time allows for comparability with other projects.

Additionally, each pillar of the TBL and each subcategory need to be weighted in order to successfully measure and compare the sustainability performance. As all pillars and all subcategories are almost equally important, they should receive the same weighting. To continue the development of the measurement system, it is possible to add indicators, which precisely measure other project management practices or in general the sustainability aspects. However, in this study, the primary focus relies on the pillars of the TBL because it is seen as the main concept for integrating sustainability in business practices [35].

## 5. Conclusion

The results of the study show that a set of sustainable indicators based on the TBL can help companies to monitor their sustainability aspects of projects. For measuring the projects sustainability performance, it is primarily necessary to be aware of the uniqueness of the company and the singularity of the project. Therefore, there is a need for an agreement on a broad set of quantifiable performance indicators that companies are able to choose from to satisfy their specific needs. However, to have some structure, the authors are recommending that the selected indicators are related to the subcategories previously identified.

The research was undertaken by evaluating 40 annual reports of the largest sustainability leaders in the Eurozone. Although the qualitative research approach is deemed appropriate for this study, the results might be limited due to the small sample. Furthermore, the economic, environmental, and social variables identified may be limited to the period of research, because the perception of sustainable awareness and condition changes rapidly. Thereof, the results must be validated by further investigation of literature and company reports.

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