

## Sustainability through the Lens of the Balanced Scorecard: Development of Key Performance Indicators

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### Abstract

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*Sustainability is a crucial issue for management accounting. This article examines sustainability through the lens of the balanced scorecard in order to propose key performance indicators (KPIs) which may be useful to entities as they monitor and report sustainability. Sustainability is first reviewed, then key performance indicators are developed, and finally potential avenues for future research are discussed.*

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**Keywords:** Sustainability, balanced scorecard, key performance indicators

### 1. Introduction

This is a discussion article which seeks to frame sustainability through the lens of the balanced scorecard in order to develop several key performance indicators (KPIs) which may be useful to organizations. Management accounting can provide information to develop these KPIs, as well as to use the results from KPIs to provide information to improve the organization and to help ensure its sustainability. A major objective of this article is to develop ideas to encourage future research.

This article first discusses background information pertaining to sustainability and the balanced scorecard. It then identifies general key performance indicators (KPIs) to help entities monitor sustainability. It then provides conclusions and suggestions for future research.

### 2. Background

Sustainability and sustainable development have become important topics in organizations. However, there are many definitions of these terms. One practical definition is from the Higher Education Partnership for Sustainability (HEPS). HEPS states that the meaning of implementing sustainability and sustainable development includes the designing of intellectual and practical tools that would allow an analysis of multiple elements. It also explained that the UK Government included four objectives in its definition of sustainable development. The objectives addressed “social progress, effective protection of the environment, prudent use of natural resources, and maintenance of high and stable levels of economic growth and employment.” The problem with this definition, according to HEPS, is that most people fail to understand that the objectives must be accomplished simultaneously. In order for sustainable development to become a reality, it is essential for a progression towards achieving all economic, social, and environmental goals to take place (Parkin, Johnston, Buckland, Brookes, and White 2003).

The concept of sustainability evolved from an ecologically-based concept in the 1970's to a more socio-economic approach. It underwent a transformation from a World Conservation Strategy and into the United Nation's 1987 Brundtland Commission Report named "Our Common Future." This report made a distinction between development and growth and stated that sustainable development's goal was to meet present needs but without compromising the needs of future generations in the process. Sustainability takes a holistic approach instead of relying on individual decisions or implementing innovative concepts. It emphasizes a cross-linking of ecological, social and economic systems (Lutteken and Hagedorn 2008)

The International City/County Management Association (ICMA) stated that sustainability, in its broader context, is the main concern of communities planning for the future. It stated that, although different names are used to describe it, the concept of sustainability describes development that does not harm the environment or becomes a financial burden for future generations. As such, the concept should extend into the economic and social areas to ensure that basic business practices take into consideration the future impact of managerial decisions. There are great promises and great challenges associated with the concept of sustainability, ICMA explained, because of the overwhelming support for the broad principles coupled with the complexity of reaching agreement on conflicting goals (ICMA Management Perspectives: Sustainability 2008).

There are numerous organizations that distinguish between strong and weak sustainability. Strong sustainability is associated with the view that substitution between different types of capital is not possible because all forms of natural capital should remain intact, while weak sustainability is associated with the opposite view. Ecological footprints are considered a measure of strong sustainability because its application leaves no room for substitutions. It is related to the amount of environmental resources that are required for sustaining current levels of consumption and removing the waste and pollution that results from it. In this environment, environmental resources cannot be substituted with manufactured capital and trade cannot be a substitute for scarcity. The essence of sustainability is, therefore, savings of all forms of capital because the depletion or degradation of any form of capital, without any offsetting gains may prove to be unsustainable (De Soysa and Neumayer 2005).

## **2.1. Sustainability Measures**

### **2.1.1. GS Rate**

Green accounting processes began as a way to make GDP reflect how economic production results in degradation of the natural environment. The green accounting program within economics takes into consideration investment and depreciation of all forms of capital; this is a way to better account for trade-offs among various forms of capital. The goal of measuring sustainability is to translate knowledge into policy. A comprehensive commentary and review on sustainable development should integrate natural resource sustainability and environmental issues with the macroeconomics of development. When resources are not managed properly, economic production is inefficient, and channels for society to provide policy input are inadequate, the results are bad for people and the planet (De Soysa and Neumayer 2005, Lodhia and Hess 2014).

This led the World Bank to embark on a project to estimate the "wealth of nations" and that included natural, human, and manufactured capital of countries. The purpose of this endeavor was to establish a system to monitor the progress of nations in terms of sustainability. It is important to note that social capital was left out of the calculations because of the complexity of the issues involved in determining its measurability. The World Bank created the General Savings (GS) rate to measure the rate at which investment in natural, human, and manufactured capital exceeds its depreciation. It is based on a concept of sustainable development that emphasizes the ability to increase the aggregate value of all capital (De Soysa and Neumayer 2005).

The adequacy of the GS rate as a measure of sustainability has been debated due to some problematic assumptions that are associated with it. The fact is that the GS rate is a multidimensional measure of sustainability and is an attractive choice because it is consistent with most orthodox views, policymakers can understand it, and it is available in time-series format. Its importance stems from its ability to measure whether changes in total capital are beneficial or detrimental to future well-being. To ensure that social well-being is sustainable requires that an economy's assets be managed well (De Soysa and Neumayer 2005).

### **2.1.2. Triple Bottom Line Performance and Reporting Mechanisms.**

In order to improve its triple bottom line performance, a company must understand both, the social and environmental impact of its operations and the performance expectations of its stakeholders.

It must also deal with the issue of whether economic, social, and environmental factors should be reported separately or combined into a single metric. If so, it must determine how the metric would be derived and whether it would provide a comprehensive measure of the company's overall performance. Accounting systems currently in use might not be suitable for this purpose; it is difficult to determine how the broader issue of sustainability would be addressed (Milne and Gray 2013). There is a need for worldwide professional accounting organizations to work towards developing new systems that can measure more than just financial performance (Deegan 1999, Deegan and Shelly 2013). In his book "*Cannibals with Forks: The Triple Bottom Line of 21<sup>st</sup> Century Business*," Elkington (as cited in Deegan 1999) stated:

It is clear that progress – or the lack of it – can be measured against a wide range of indicators associated with each of the three bottom lines of sustainability. But the next step will be to tackle this agenda in an integrated way. Key tools will be sustainability accounting, auditing and reporting. In many respects, these concepts are still "black boxes", more talked about in generalities than defined in precise terms, but there is now fascinating work under way in each of these areas.

It is also necessary to promote the integration of individual-company-based information with that of other firms that are using the same resources. It is the cumulative impact that must be measured and the conventional accounting framework is not suitable for accomplishing this goal. There is a need for new methodologies that address changes in a non-linear, discontinuous, and synergistic fashion (Deegan 1999, Deegan and Shelly 2013).

### ***2.1.3. Forum for the Future's Approach to Accounting for Sustainability***

This approach uses the language of economists and expands the triple bottom line. It is based on five types of resources that are incorporated into The Sustainability Appraisal Grid to map contributions to sustainable development. The grid also includes as many columns as necessary to represent the different ways in which an entity manifests itself along the five resource categories. It also adds three dimensions to traditional financial accounting reports. The first dimension is timing and contains information about the flow of goods and services at a specific time or over a period of time. The second one is the location of impact and it contains information that reveals whether the impact is in the accounts (internal) or outside the traditional accounting boundaries (external). The third dimension is the type of impact and it identified whether the impact is economic, social, or environmental (Parkin, Johnston, Buckland, Brookes, and White 2008).

In traditional financial accounting, the balance sheet and income statement only show the flow of financial value. In sustainability accounting the internal accounts are desegregated, in order to show how the costs and benefits relate to economic, social, and environmental performance. The monetary value of external impacts is also included. One way to do this is to show the hidden links for costs and benefits that are already included in the financial accounts. For example, a link between environmental or social expenditures and hidden savings; these could vary depending on the entity's activities. In theory, because it has not yet been systematically implemented anywhere, the balance sheet could report on all the stocks (in the language of economists) from inside and outside an organization and the profit and loss would track all the inflows and outflows of these stocks over time. Some of these stocks are already represented on the balance sheet, for example, an entity's brand, reputation, quality of its people and products can be given a monetary value and classified as intangible assets (Parkin, Johnston, Buckland, Brookes, and White 2008).

### ***2.1.4. Brief Definition of Balanced Scorecard and Key Performance Indicator.***

Management accountants are very familiar with the balanced scorecard. Since the 1980s, organizations have used the balanced scorecard approach to relate their overall strategic initiatives to a number of key performance indicators (KPIs). KPIs are relatively easy-to-measure information values which allow the organization to monitor how well it is meeting its strategic initiatives. KPIs may be financial or non-financial in nature and are usually categorized into one of four perspectives. These perspectives are the financial perspective, the customer's perspective, the internal business processes perspective, and the learning and growth perspective (Kaplan 2008).

## **3. SOME POTENTIAL KPIs**

This section proposes some possible KPIs to help monitor an organization's strategic initiatives pertaining to sustainability and sustainable development. The KPIs are organized into three categories: environmental issues, social and government expectations, and the needs of customers, suppliers, and stockholders. The lists of KPIs and categories are not all-inclusive.

Individual organizations may develop additional ones or may make individual KPIs more specific to their own needs, as this list is intended to be quite general so that it may apply to a variety of organizations.

This discussion focuses on the conceptual level. It seeks to encourage future research as the next step in development of these ideas. The KPIs are illustrated in Figure 1 (insert Figure 1 here).

### **3.1. Environmental KPIs**

Environmental issues tend to be the issues which most people envision when the concept of sustainability is discussed. The following are some environmental KPIs which may be useful to organizations:

1. Climate change risk. Are there activities which could cause climate change, such as carbon dioxide and other greenhouse gas emissions? Are initiatives being undertaken to reduce climate change risk from the organization's activities?
2. Recycling, reuse, repurposing. Does the organization take steps to reduce waste through recycling, reusing, or repurposing materials? Have these activities increased in an effort to reduce waste?
3. Protection of the environment. What steps are taken to protect the environment? For example, Nestle monitors the total size of its manufacturing facilities in environmentally-sensitive areas.
4. Sustainable development. This helps to ensure a bright future for the organization. For example, what is the percentage of sustainable energy sources used by the organization. Are there plans to increase this percentage?
5. Other environmental issues as appropriate.

### **3.2. Social and Governmental KPIs**

Sustainable organizations need to meet the expectations of relevant social groups and governmental entities. The following KPIs can provide useful information.

1. Corporate citizenship. How is the entity's image in the eyes of those outside the company? Is it regarded as a good citizen in light of sustainability issues?
2. Are regulators' demands met? Are there any compliance violations? What internal control measures are in place to ensure compliance? How are instances of noncompliance handled?
3. Have the concerns of relevant special interest groups been met? Are there any controversial issues which need to be addressed?
4. Human rights. Are there any potential human rights concerns?

### **3.3. KPIs Related to Customers, Suppliers, and Stockholders.**

Sustainable organizations need to meet the expectations and needs related all three of these groups. Organizations may wish to monitor the following KPIs.

1. How sustainable are suppliers? Are efforts undertaken to evaluate suppliers for sustainability?
2. Do customers perceive that the organization is sustainable? Do they feel that the organization's products are environmentally-friendly?
3. Are stockholders satisfied that the organization is sustainable? Have issues been raised by stockholders?

## **4. Conclusions and Future Research Suggestions**

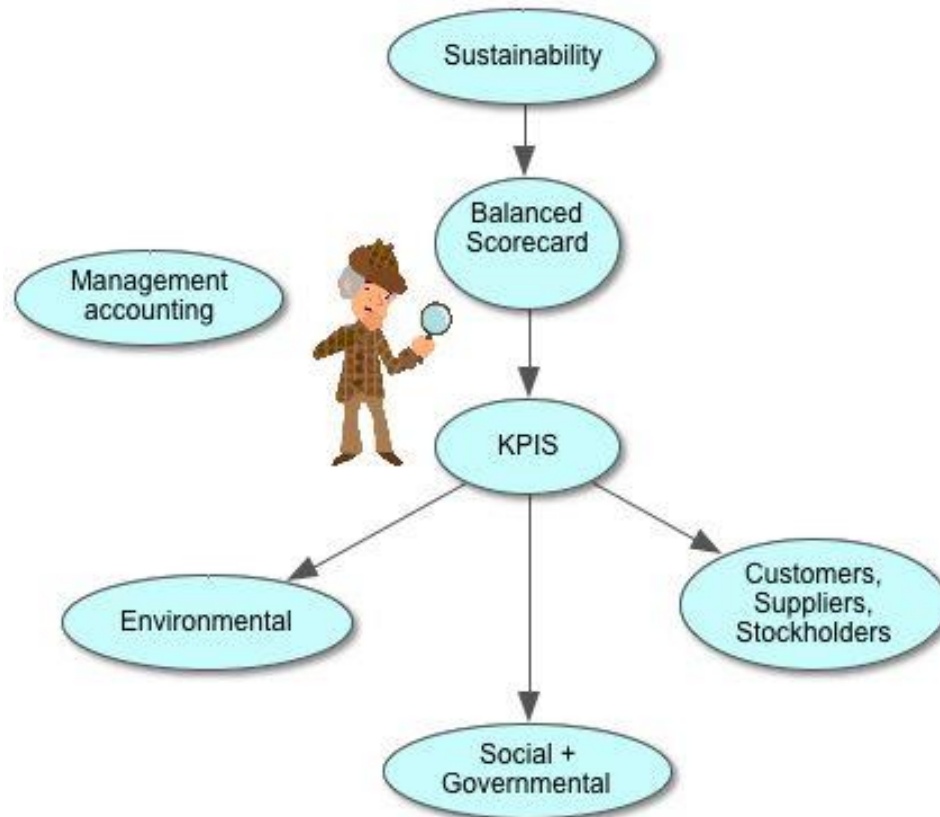
Sustainability is a critical issue for entities to address. The concept of sustainability has been discussed in the profession for many years, and its importance will likely continue to increase. Entities are still looking for ways in which to incorporate sustainability into accounting information. Management accounting can assume a leading role in this.

A major tie-in to management accounting is that sustainability can be framed through the lens of the balanced scorecard. Several KPIs can be developed from this process. Entity can monitor these KPIs as they assesses their ongoing sustainability. Management accounting provides crucial information for this monitoring process, and sustainability is increasingly at the heart of management accounting functions.

Future research may address additional KPIs, including those for specialized industries. The general KPIs in this article can also be made more specific for individual industries. Empirical research can also be conducted, including in experimental settings with managers or other relevant subjects.

Another avenue for future research is how to report sustainability and related KPI information in external financial statements. While many companies do report some sustainability information here, future financial statements may need expanded disclosure. Behavioral research could be conducted to determine the information which is most useful to readers of financial statements.

**Figure**



## References

- Deegan, C. (1999). Implementing triple bottom line performance and reporting mechanisms: business must embrace sustainability issues. *CHARTER-SYDNEY*-, 70, 40-43.
- Deegan, C., & Shelly, M. (2013). Corporate Social Responsibilities: Alternative Perspectives About the Need to Legislate. *Journal of Business Ethics*, 1-28.
- De Soysa, I., & Neumayer, E. (2005). False prophet, or genuine savior? Assessing the effects of economic openness on sustainable development, 1980–99. *International Organization*, 59(03), 731-772.
- Kaplan, R. S. (2008). Conceptual foundations of the balanced scorecard. *Handbooks of Management Accounting Research*, 3, 1253-1269.
- Lodhia, S., & Hess, N. (2014). Sustainability accounting and reporting in the mining industry: current literature and directions for future research. *Journal of Cleaner Production*, 84, 43-50.
- Lutteken, A., & Hagedorn, K. (2008). *Concepts and Issues of Sustainability in Countries in Transition*. Berlin, Germany: Humboldt University of Berlin, Department of Agricultural Economics and Social Sciences.
- Milne, M. J., & Gray, R. (2013). W (h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of business ethics*, 118(1), 13-29.
- Parkin, S., Johnston, A., Buckland, H., Brookes, F., & White, E. (2004). Learning and skills for sustainable development: Guidance for higher education institutions.
- Special Section. In *ICMA Management Perspectives: Sustainability*. 2007. Retrieved from International City/County Management Association Web Site: <http://icma.org/pm/9001/>