

## Article

# Incorporating the Sustainability Concept in the Major Business Excellence Models

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**Abstract:** The concept of sustainability has gained importance over the last years and organizations worldwide are trying to adapt their strategies and their economic, environmental, and social goals in order to achieve what is called corporate sustainability. Despite its importance to organizations, there is no universally accepted approach for implementing and measuring corporate sustainability. Business Excellence Models (BEMs) are widely used all over the world as a means of achieving and sustaining outstanding levels of organizational performance by improving the quality and management of their operations, and have been regarded to promote sustainable development. However, they have often been criticized for focusing more on business and financial results, questioning the extent to which they can adequately promote corporate sustainability. The aim of this paper is to explore the adequacy of the latest versions of three major BEMs to address corporate sustainability, by analyzing their criteria, their core values, and the overall approach of these models. Although the latest versions of these BEMs have been evolved to take into account the growing importance of corporate sustainability, the extent to which this is achieved varies among them, and cannot yet be considered as standardized models for its implementation and measurement. BEMs should provide an extensive list of sustainability indicators, such as the ones described in the Global Reporting Initiative (GRI) standards, if they are to be regarded as frameworks that adequately address corporate sustainability.

**Keywords:** triple bottom line approach; corporate sustainability; business excellence models; EFQM model; MBNQA; Deming Prize; Global Reporting Initiative (GRI); United Nations Sustainable Development Goals



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## 1. Introduction

The concept of sustainability has become increasingly important to society in recent years [1], and organizations all over the world incorporate strategies into their everyday activities to achieve sustainable development [2]. Organizations nowadays not only focus on financial results but they also try to manage the impact of their activities on the environment and the society on equal terms. The concept of sustainable development has recently been enriched by the 17 Sustainable Development Goals (SDGs) [3] established after the United Nations conference in New York in September 2015 for adopting the 2030 Agenda on Sustainable Development (Figure 1). Corporations all over the world need to align their strategies and operations with these universal goals and take actions that advance sustainability.

Despite the growing importance given to the implementation of business strategies aiming to achieve corporate sustainability, a universally accepted or standardized method to implement and measure corporate sustainability does not exist [2] and the frameworks proposed in the literature to determine the level of corporate sustainability suffer from the lack of generally accepted principles in selecting sustainability indicators [4]. In this context,

several standards can guide business organizations to align their management subsystems towards sustainable development. For example, ISO 26000:2010 provides guidelines for social responsibility [5]. On the other hand, other frameworks, such as the Global Reporting Initiative (GRI), can also help organizations, however, they only provide a starting point for addressing the complex issues of corporate sustainability. Given the absence or the narrow focus of existing standards, the literature emphasizes the need for a more structured approach to integrate sustainability into their core business processes [6].



Figure 1. Sustainable Development Goals [3].

In an effort to apply sustainable practices in a systematic way, Business Excellence Models (BEMs) have been discussed by a number of scholars as a means of sustainable development (see for example [7–10]). It should be noted that the primary focus of BEMs is the improvement of quality and operations management, however, they have recently broadened their focus, accommodating several social and environmental issues [11]. Asif et al. [11] and Jankalová and Jankal [6] provide a number of reasons why the use of BEMs as a tool for assessing and improving sustainability improvement is considered appropriate, including their widespread use in achieving and sustaining outstanding levels of organizational performance and the systematic approach they use to meet the demands of different stakeholders. As the requirements of these stakeholders have changed in recent years, BEMs are constantly being revised to be more suitable for evaluating and implementing activities that improve corporate sustainability [12].

Few studies have investigated how BEMs contribute to corporate sustainability (e.g., [11,12]) and how BEMs relate to existing sustainability initiatives such as the Global Reporting Initiative (GRI). While many of them support that the best approach to assess sustainability is through the implementation of BEMs (e.g., [12,13]), the findings of these studies are often contradictory as to the extent to which BEMs promote corporate sustainability. Since most of these studies are related to previous versions of BEMs, it would be interesting to explore how the evolution of these BEMs also took into account the growing importance of corporate sustainability and how the latest versions of BEMs can be used to support the implementation of sustainability in organizations. Therefore, the aim of this paper is to explore the adequacy of the latest versions of three major BEMs to address corporate sustainability, by analyzing their criteria, their core values, and the overall approach of these models. Suggestions as to how these models can better contribute to corporate sustainability are also provided.

This paper is organized in 6 sections. Section 2 analyses the concept of sustainability presenting the most known frameworks used to assess the level of corporate sustainability

and provides a literature review of studies that have examined the linkage between the concept of sustainability and previous versions of BEMs. Section 3 describes the methodological approach and presents the latest versions of the three major BEMs (i.e., the EFQM model, the MBNQA, and the Deming Prize). The extent to which sustainability issues are embedded into the core values and/or criteria frameworks of the BEMs is analyzed in Section 4. Finally, Section 5 discusses the main findings, while Section 6 summarizes the concluding remarks and provides directions for further research.

## 2. Theoretical Background

This section discusses the definition of corporate sustainability and presents the frameworks used to determine the level of corporate sustainability. The dimensions of corporate sustainability are discussed and examples of sustainability indicators are provided. Extensive literature review, including research publications, research studies and documents concerning previous attempts to investigate how BEMs contribute to corporate sustainability is also conducted in order to support the findings of this study.

### 2.1. Sustainability

There is no generally accepted definition for corporate sustainability and there is no clarity on what it means to different business scholars [2,4]. In general, sustainability was defined by the Brundtland Commission as “the assurance that human needs are satisfied today without harming the ability to fulfil the needs of a future generation” [14]. In a similar vein, corporate sustainability can be defined as “the ability of firms to address the needs of the current generation without compromising the ability of future generations to meet their needs” [15].

The notion of business sustainability is sometimes referred to as a Triple Bottom Line (TBL), which includes the three pillars of sustainability: social, economic, and environmental [16]. Through public health, information, and education, the social pillar symbolizes social capital. The earnings of capital, which comprises physical, financial, and human capital, are referred to as the economic pillar. The natural capital, as well as renewable, exchangeable natural resources, are represented by the environmental pillar [1]. As a result, in order for businesses to achieve corporate sustainability, they must also attain [17]:

1. A cash flow viability to finance day-to-day operations and provide acceptable returns to shareholders;
2. A raw material consumption rate that is lower than the rate of natural resource production;
3. A good impact on society and its stakeholders.

According to Nikolaou et al. [4], these three pillars of sustainability appear in most definitions of corporate sustainability. After reviewing the literature, they provided a definition of the term and suggested that “sustainable firms invest effectively and responsibly their financial capital and simultaneously achieve certain environmental and social goals which assure the protection of the natural environment and social justice” [4].

In an attempt to operationalize the implementation of the concept of sustainable development for businesses, the Circular Economy (CE) concept has received increasing attention worldwide and has become an important field to both scholars and practitioners with a large increase in the number of articles and journals covering the topic during the last years (e.g., [18–20]). Although there is no generally accepted definition for the concept of Circular Economy, Kirchherr et al. [19] describe it as “an economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations”. Similarly, Geissdoerfer et al. [18] define CE as “a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recy-

cling". Circular Economy is seen as a business model that can lead to more sustainable development and a harmonious society [21] contributing to all the three pillars of sustainable development. According to Korhonen et al. [22], the environmental goal of CE is to minimize the production-consumption system's virgin material and energy inputs, as well as waste and emissions outputs, through the use of material cycles and renewables-based energy cascades. CE's economic goal is to lower the costs of raw materials, energy, waste management, and emissions control in the economic production-consumption system, as well as to reduce the risks of (environmental) legislation/taxation and public perception, as well as to develop new product designs and market opportunities for businesses. The sharing economy, increased employment, participatory democratic decision-making, and more efficient use of existing physical material capacity through a cooperative and community user (user groups using the value, service, and function) culture, rather than a consumer (individuals consuming physical products) culture, are the social objectives of CE [22].

Despite the popularity of the CE concept, it seems that it is still just a collection of vague and separate ideas from several fields [22] and is far from being considered an implementable model for sustainable development [19].

On the other hand, a range of frameworks have been proposed to determine the level of corporate sustainability [4,23,24]. The most known rating frameworks include the Kinder, Lydenberg and Domini (KLD) indices, the Global Reporting Initiative (GRI), and the Dow Jones Sustainability Index (DJSI). KLD provides a rating system that evaluates the sustainability performance of companies using the following evaluation dimensions: corporate governance, product quality and safety, employee relations, diversity, human rights, community relations, and environment. The KLD index is based on a TBL approach that may be used to assess the linkages between social and financial performance [2]. On the other hand, the DJSI is a family of sustainability indices used to measure corporate sustainability performance covering long-term economic, environmental, and social aspects. The DJSI focuses on stock performance and aims to provide a benchmark for sustainable investments. Different weighting schemes are used according to the examined industries. Criticism, however, emphasizes the data collection is heavily based on self-reported data.

The GRI Sustainability Reporting Initiative is the most frequently used framework for reporting on economic, environmental, social, and governance performance [6,12]. GRI is a non-profit organization whose mission is to help businesses create standardized sustainability reports and to make sustainability reporting commonplace. Economic (e.g., economic performance, market presence, indirect economic impacts, etc.), environmental (e.g., materials, energy, water and effluents, biodiversity, emissions, waste, etc.) and social (e.g., employment, labor/management relations, occupational health and safety, training and education, etc.) issues are all covered in great detail by the GRI. The GRI is a reporting framework that implements a set of sustainability reporting standards to produce a broad range of sustainability indicators. However, due to the aforementioned lack of a standard to implement and assess sustainability, it may complement organizations support their sustainability programs and achieve their goals of sustainability development more successfully [25–27].

## 2.2. International Business Excellence Models and Sustainability

There are few studies that have examined the linkage between BEMs and the concept of sustainability and the extent to which BEMs can assist in the advancement of corporate sustainability. Among the most known BEMs, most of the studies concern the examination of previous versions of the EFQM model, fewer of the MBNQA and much fewer of the Deming Award.

The Union of Japanese Scientists and Engineers founded the Deming Prize in 1951 to acknowledge Dr. Edwards Deming's contribution to Japanese business and to support the further development of quality control in Japan [28]. It is the first quality award in a national/international level used for the promotion of Total Quality Management (TQM).

Recipients are business organizations that are recognized for their excellence in applying the TQM principles. The categories of the Deming Prize are [29]:

- The Deming Prize for Individuals: Given to those who have made outstanding contributions to the study of TQM or those who have made outstanding contributions in the dissemination of TQM;
- The Deming Distinguished Service Award for Dissemination and Promotion (Overseas): Given to individuals who have made outstanding contributions in the dissemination and promotion of TQM;
- The Deming Prize: Given annually to organizations that have implemented TQM suitable for their management philosophy, scope/type/scale of business, and management environment;
- The Deming Grand Prize: Given annually to organizations that had maintained and further enhanced the level of TQM for more than three years after the winning of the Deming Prize or the Deming Grand Prize.

The US government established the Malcolm Baldrige National Quality Award (MBNQA) in 1987 as a declaration of national will to offer quality leadership and increase the competitiveness of US businesses. The National Institute of Standards and Technology (NIST) presently administers it, with the American Society of Quality aiding with the application evaluation process, award document creation, and other administrative functions [30]. The award is given to companies and organizations that excel in quality management practice and performance on a yearly basis. Each year, up to 18 awards are granted in six categories: manufacturing, service, small business, education, health care, and nonprofit [31].

The EFQM was created in 1988 by 14 of the most prominent Western European enterprises, when many of Europe's largest corporations understood that the only way to stay in business was to pay significantly more attention to quality [32]. A quality award procedure was developed in 1991 with the help of the European Organization for Quality and the European Commission to recognize accomplishment as a part of the EFQM's strategy [33]. The EFQM model has been acknowledged as a worldwide structure that helps firms manage change and enhance organizational performance since its launch in 1991 [34].

Already from the previous versions of the BEMs, studies have suggested that BEMs can support corporate sustainability at some point. For example, Al-Tabbaa, et al. [35] studied how the adoption of the EFQM model can help not-for-profit organizations to improve their sustainability. In general, previous studies show that higher commitment to the EFQM model is associated with higher involvement in sustainability by business organizations [36]. This linkage is stronger regarding corporate social sustainability [37,38]. On the other hand, Jankalová and Jankal [12] note that corporate social responsibility is a critical element of the MBNQA model since 1988. However, the focus has been revised over the years. For example, public responsibility was initially related to external communication in the 1988 set of criteria (i.e., how information regarding corporate support of quality assurance or improvement activities were communicated outside the organization). This, however, has been expanded over the years, covering different aspects of quality leadership to the external community. In this framework, businesses need now explain to their external communications how their quality policies and operations combine public health, safety, environmental protection, and ethical business practices. This core principle was significantly revised in 2000, with the organization's leadership emphasizing the organization's responsibility to the public and emphasizing the need of practicing good citizenship. These obligations referred to the organization's basic expectations in terms of corporate ethics and public health, safety, and the environment. Although the wording remained mostly intact, the fundamental principle was renamed "Social Responsibility" in 2003. Three of the 11 basic values and ideas in the most recent editions of the MBNQA are very strongly linked to corporate social responsibility principles [12]. Taking into account that BEMs are periodically revised in order to keep up with current trends and business



needs, it can be assumed that the latest versions of the three most known international BEMs can also be used as models for promoting sustainable development, as stated in Proposition 1.

**Proposition 1.** *The current versions of the three most known BEMs can be used as tools that promote corporate sustainability.*

In contrast, Asif et al. [11] found that while TBL considerations were addressed to some extent in the studied BEMs, both 2010 versions of the EFQM and the MBNQA models do not provide comprehensive frameworks for sustainability, nor do they provide a systematic approach to implementing and assessing corporate sustainability. In general, the MBNQA addressed all three TBL topics. However, the amount to which issues were handled varied greatly, with the emphasis mostly on improving economic performance. Environmental factors were acknowledged as part of the “social responsibility” core value, but they were not a necessity. Economic and environmental problems were also discussed implicitly or openly throughout the EFQM. They stated that the EFQM model went beyond the MBNQA in the social and environmental domains, despite the fact that environmental factors were given a low profile in the EFQM framework and were not expressly examined in their own category. It did not, however, give any instructions for establishing and applying sustainability indicators, as did the MBNQA. The authors suggested that future revisions of both models include an explicit and increased focus on social and environmental considerations in order to more effectively address the multiple bottom-line issues, as well as a number of improvement suggestions for each model, including the need to incorporate sustainability indicators, such as those provided in the GRI framework, into the BEMs.

The 2013 version of the EFQM model, according to Aryanasl et al. [39], was only partially committed to sustainability and needed to be updated in order for a company to be sustainable after using the model. Most EFQM criteria do not promote sustainability, according to Palentová and Laichová [40], and the approach is more market orientated. Adamek [41] stated that there is no clear link between the EFQM model and corporate sustainability, and that the model promotes the environmental rather than the social or economic pillars of sustainability. In this context, it would be interesting to investigate whether the current versions of the major BEMs still address corporate sustainability in different ways and if they can adequately promote corporate sustainability, as stated in Propositions 2 and 3.

**Proposition 2.** *The current versions of the major BEMs address corporate sustainability to different extent.*

**Proposition 3.** *The current structure of the major BEMs should be modified in order to be considered corporate sustainability frameworks.*

### 3. Materials and Methods

The core values, criteria frameworks, and structure of the three BEMs were examined in order to investigate the above-mentioned claims. A qualitative examination of the BEMs’ frameworks was carried out in order to find possible connections between them and corporate sustainability dimensions. In order to highlight the way in which each one of the models contributes to corporate sustainability, the points where sustainability is referred or implied in core values, criteria frameworks and/or structure of the BEMs, as considered in any of the three pillars of sustainability (social, economic and environmental), were identified. The extent to which each BEM addresses corporate sustainability, as described by the three pillars of corporate sustainability, was determined, potentially leading to model improvements. To support the research findings, a detailed examination of the limited literature was conducted, which included an analysis of the most recent BEM versions.

All three BEMs have been recently revised in an attempt to catch up with the current trends of good governance. The EFQM model was revised in 2019 leading to the EFQM 2020 model. The model recognizes the role that organizations can play in supporting the United Nations Sustainable Development Goals (SDGs) and incorporates them, as well as a set of European values that support business ethics, into its construction [34,42]. The model comprises 7 criteria grouped in three dimensions [42,43] and 23 sub-criteria (see Figure 2 and Table 1):

- The Direction that responds to the Why. Excellent companies, according to the model, determine their course in terms of purpose, stakeholder identification, strategy and governance, and performance systems.
- The Execution that responds to the How. The model's "execution" section converts specified directives into outcomes through organizational changes that include stakeholder involvement, long-term value creation for stakeholders, and performance and transformation.
- The Results that solve the question of What. The "results" section assesses how well businesses are meeting key stakeholder expectations and achieving strategic and operational performance goals.



**Figure 2.** The EFQM 2020 model. Reprinted with permission from [33]. ©EFQM 2021. The EFQM Model is a registered trademark of EFQM.

**Table 1.** The criteria of the EFQM model. Reprinted with permission from [33]. ©EFQM 2021. The EFQM Model is a registered trademark of EFQM.

Criteria and Sub-Criteria	Weight
<b>Purpose, Vision &amp; Strategy</b>	<b>100 points</b>
1.1 Define Purpose & Vision	20 points
1.2 Identify & Understand Stakeholders Needs	20 points
1.3 Understand the Ecosystem, Own Capabilities & Major Challenges	20 points
1.4 Develop Strategy	20 points
1.5 Design & Implement a Governance & Performance Management System	20 points
<b>Organisational Culture &amp; Leadership</b>	<b>100 points</b>
2.1 Steer the Organisation's Culture and Nurture Values	25 points
2.2 Create the Conditions for Realising Change	25 points
2.3 Enable Creativity & Innovation	25 points
2.4 Unite Behind & Engage in Purpose, Vision & Strategy	25 points
<b>Engaging Stakeholders</b>	<b>100 points<sup>1</sup></b>
3.1 Customers: Build Sustainable Relationships	20 points
3.2 People: Attract, Engage, Develop & Retain	20 points
3.3 Business & Governing Stakeholders: Secure & Sustain Ongoing Support	20 points
3.4 Society: Contribute to Development, Well-Being & Prosperity	20 points
3.5 Partners & Suppliers: Build Relationships & Ensure Support for Creating Sustainable Value	20 points
<b>Creating Sustainable Value</b>	<b>200 points</b>
4.1 Design the Value & How it is Created	50 points
4.2 Communicate & Sell the Value	50 points
4.3 Deliver the Value	50 points
4.4 Define & Implement the Overall Experience	50 points
<b>Driving Performance &amp; Transformation</b>	<b>100 points</b>
5.1 Driver Performance & Manage Risk	20 points
5.2 Transform the Organisation for the Future	20 points
5.3 Drive Innovation & utilise Technology	20 points
5.4 Leverage Data, Information & Knowledge	20 points
5.5 Manage Assets & Resources	20 points
<b>Stakeholder Perceptions</b>	<b>100 points<sup>1</sup></b>
6.1 Customer Perception Results	20 points
6.2 People Perception Results	20 points
6.3 Business & Governing Stakeholders Perception Results	20 points
6.4 Society Perception Results	20 points
6.5 Partners & Suppliers Perception Results	20 points
<b>Strategic &amp; Operational Performance</b>	<b>200 points</b>

<sup>1</sup> The points of this criterion can be distributed differently according to the importance of each group of stakeholders for different organizations.

The first five criteria of the model describe and evaluate what the organization is doing and how it is doing it while the remaining two criteria evaluate the obtained results [44]. The “enablers” criteria (20 percent direction and 40 percent execution) have a 60 percent distribution, whereas the “results” criteria have a 40 percent distribution. The EFQM methodology does not directly supply fundamental values. The model may, however, infer some key principles such as sustainability, stakeholder involvement, systems viewpoint, and growing organizational competence. As the model demands developing the value, governance system, and performance management system to match with the principles of sustainable development, “design thinking” is a distinctive implicit core value [45].

The latest version of the MBNQA, released in 2021, consists of seven assessment categories, six of which are “systematic processes” and the seventh is performance results [45] (see Figure 3). Systematic processes include “leadership”, “strategy”, “customer focus”, “measurement, analysis, and knowledge management”, “workforce focus” and “operations focus” [46,47]. The implementation of these systematic processes leads to “performance results”. Each one of the seven categories consists of several items that enumerate the requirements proposed to constitute effective practice. The number of items has been

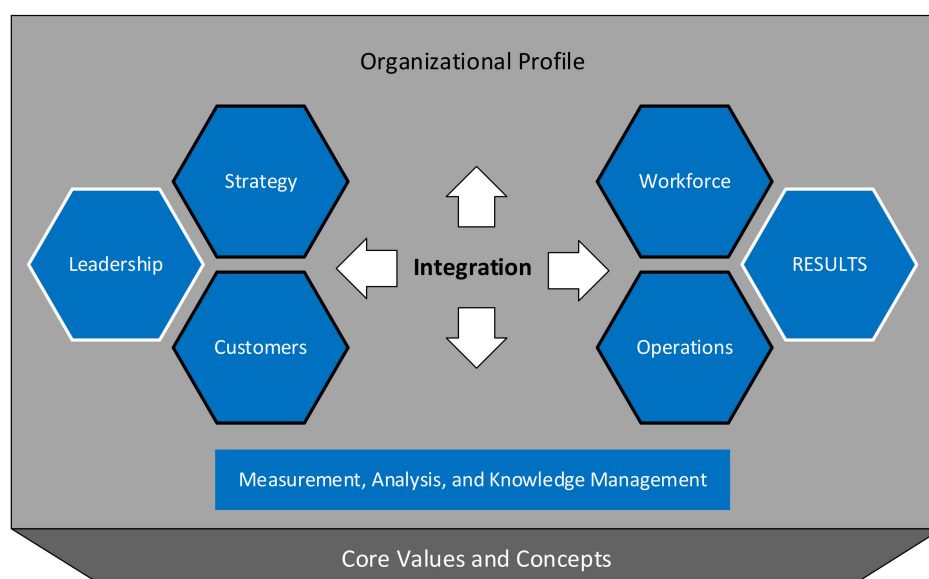


consolidated over the years, falling from 42 in the original 1988 version of the criteria to 17 in 2021 [48]. A scoring system assigns 1000 points to the seven categories, with 55% points allocated to processes and 45% to results.

The MBNQA builds upon 11 core values, which are [49,50]: 1. Systems perspective, 2. Visionary leadership, 3. Customer-focused excellence, 4. Valuing people, 5. Agility and resilience, 6. Organizational learning, 7. Focus on success and innovation, 8. Management by fact, 9. Societal contributions, 10. Ethics and transparency, 11. Delivering value and results. Table 2 presents the dimensions included in the criteria of the Baldrige performance excellence framework.

**Table 2.** The criteria of the Baldrige Performance Excellence Framework. Reprinted with permission from [50]. Baldrige Performance Excellence Program. 2021.

Criteria	Sub-Criteria
Organizational Profile	P.1 Organizational Description P.2 Organizational Situation
1 Leadership	1.1 Senior Leadership 1.2 Governance and Societal Contributions
2 Strategy	2.1 Strategy Development 2.2 Strategy Implementation
3 Customers	3.1 Customer Expectations 3.2 Customer Engagement
4 Measurement, Analysis, and Knowledge Management	4.1 Measurement, Analysis, and Improvement of Organizational Performance 4.2 Information and Knowledge Management
5 Workforce	5.1 Workforce Environment 5.2 Workforce Engagement
6 Operations	6.1 Work Processes 6.2 Operational Effectiveness
7 Results	7.1 Product and Process Results 7.2 Customer Results 7.3 Workforce Results 7.4 Leadership and Governance Results 7.5 Financial, Market, and Strategy Results



**Figure 3.** The MBNQA 2021–2022. Reprinted with permission from [50]. Baldrige Performance Excellence Program. 2021.

The latest version of the Deming Prize, released in 2019, has a three-pronged approach. The establishment of customer-driven business objectives and strategies with a social responsibility perspective is the first main requirement. At the same time, the Deming Prize requires organizations to effectively achieve specific objectives in the context of their TQM implementation. Finally, business organizations, should acquire a capability for future growth, as a result of the previous requirements [45]. Thus, the first category of evaluation criteria consists of “Establishment of business objectives and strategies and top management’s leadership”, the second is about “Suitable utilization and implementation of TQM”, and the third is about “Effects of TQM” [29]. Each of the previous three categories is assigned a score of 100 points, thus, the overall potential score has a total of 300 points. The Deming Prize is quite demanding, giving that a minimum of 70 points in each category is necessary for applicant organizations to qualify for the award. Table 3 presents the dimensions and the scoring points of the evaluation criteria.

**Table 3.** Evaluation items of the Deming Prize. Reprinted with permission from [51].

Evaluation Items	Points	Passing Points
<b>A. Establishment of business objectives and strategies and top management’s leadership</b>		
I. Establishment of proactive customer-oriented business objectives and strategies	100	70 or above
II. Role of top management and its fulfillment		
<b>B. Suitable utilization and implementation of TQM</b>		
III. Suitable utilization and implementation of TQM for the realization of business objectives and strategies	100	70 or above
1. Organizational deployment of business objectives and strategies	(15)	
2. Creation of new values based on understanding of customer and social needs and innovation of technology and business model	(15)	
3. Management and improvement of quality of products and services and/or work process	(15)	
4. Establishment and operation of cross-functional management systems such as quality, quantity, delivery, cost, safety, environment, etc. across the supply chain	(15)	
5. Collection and analysis of information and accumulation and utilization of knowledge	(15)	
6. Development and active utilization of human resource and organizational capability	(15)	
7. Initiatives for social responsibility of the organization	(10)	
<b>C. Effects of TQM</b>		
IV. Effects obtained regarding business objectives and strategies through utilization and implementation of TQM	100	70 or above
V. Outstanding TQM activities and acquisition of organizational capabilities		

#### 4. Results

Regarding the EFQM model, “Creating Sustainable Value” is a new criterion with a weight of 20% and can be assumed that the concept of sustainability can be found to a greater amount in the latest version of the model compared to the previous ones [1]. The EFQM 2020 model now includes a framework that connects the organization’s mission and strategy while also guaranteeing alignment with the United Nations Sustainable Development Goals (SDGs). The Sustainable Development Goals (SDGs) are a worldwide statement of stakeholder demands to assure simultaneous economic, social, and environmental development [52] and to track progress toward Sustainable Development (SD) [53]. Organizations need to understand the ecosystem in which they operate and the consequences of their operations in achieving the SDGs. Key stakeholders should be engaged in the deployment of organizations’ strategy drawing inspiration from the United Nations SDGs and their perceptions of the degree to which the organization contributes

successfully to one or more of the United Nations SDGs should also be considered. Through the SDGs organizations worldwide can operationalize and integrate sustainability and address current and future stakeholder needs, contributing to an enduring economic, social, and environmental development [42].

Furthermore, sustainable levels of performance, a sustainable future, and sustainable value are further addressed in many of the EFQM model's criteria (see Table 4). There is a connection between an organization's purpose and strategy, and how that connection is leveraged to produce long-term value for important stakeholders and accomplish amazing outcomes. At all levels of the company, leadership must be successful. Culture must inspire individuals, encourage change, and add value [42]. All essential stakeholders, as well as crucial economic, social, and environmental issues, must reach sustainable levels of performance.

**Table 4.** Sustainability in the EFQM model criteria and sub-criteria.

Criteria/Sub-Criteria	Content
1.1 Define Purpose & Vision	... Identifies areas in which outstanding and <b>sustainable levels of performance</b> must be achieved to fulfil the Vision.
1.2 Identify & Understand Stakeholders Needs	The purpose sets the scene for it to create and deliver <b>sustained value for its stakeholders</b> . ... Researches and understands the ecosystem, including Megatrends, and the consequences on it of the <b>UN's Sustainable Development Goals</b> . Assesses and evaluates the data, information and knowledge gathered from across its ecosystem to understand the major challenges for today and in the future.
1.3 Understand the Ecosystem, Own Capabilities & Major Challenges	Identifies, recognizes and promotes other role models from within its ecosystem that are leading the way to a more <b>sustainable future</b> for everyone Involves Key Stakeholders in deploying its Strategy and <b>Creating Sustainable Value</b> and recognizes the contributions they make. Works with its Key Stakeholders to develop a common understanding and focus on how, through co-development, it can contribute to, and draw inspiration from, the <b>UN's Sustainable Development Goals and Global Compact ambitions</b> . Evaluates its performance in relation to Key Stakeholders needs and decides on the appropriate actions to be taken to help secure its future, as perceived by these Key Stakeholders.
2.1 Steer the Organization's Culture and Nurture Values	Maintains a relationship with its customers during all stages of <b>creating Sustainable Value</b> .
3. Engaging Stakeholders	Builds a trusting relationship with its Key Partners and Suppliers to support the objective of <b>Creating Sustainable Value</b> .
3.1 Customers: Build Sustainable Relationships	The organization's clearly defined Purpose, enriched by the Strategy, defines for whom the organization should be <b>Creating Sustainable Value</b> . In most cases, customers, segmented appropriately, are the target group for <b>Creating Sustainable Value</b> , although some organizations might also focus on selected Key Stakeholders within its Society or Business & Governing Stakeholder segments.
3.5 Partners & Suppliers: Build Relationships & Ensure Support for Creating Sustainable Value	Delivers <b>sustainable value</b> ...
4. Creating Sustainable Value	
4.3 Deliver the Value	

Table 4. Cont.

Criteria/Sub-Criteria	Content
5. Driving Performance & Transformation	The combination of Driving Performance & Transformation confirms the necessity for the organization to <b>deliver for today while preparing for the future</b> .
5.1 Driver Performance & Manage Risk	Uses the performance management system to ensure a coherent link between its Purpose, Strategy, <b>Sustainable Value creation</b> objectives and results.
5.2 Transform the Organization for the Future	Identifies the transformation and change needs, considering its Purpose, Strategy, <b>Sustainable Value creation</b> objectives and Results and scanning its ecosystem to forecast the main challenges and opportunities for the future.
5.4 Leverage Data, Information & Knowledge	Converts data into information and knowledge ... <b>for creating further sustainable value</b> ... Makes use of the knowledge held by key stakeholders to generate ideas and innovations, including the potential for working together, to develop products, services, and solutions that <b>create sustainable value</b> .
5.5 Manage Assets & Resources	Uses financial resources in a balanced and <b>sustainable way</b> ...
6. Stakeholder Perceptions	In addition to the perceptions that a Key Stakeholder may have of an organization based on personal experiences, perceptions may also be shaped by the environmental and social impact reputation of the organization. For instance, the degree to which the organization is perceived by its Key Stakeholders as contributing successfully to one or more of the <b>UN's Nations Sustainable Development Goals and Global Compact ambitions</b> . The usage of technology by the organization to help deliver <b>sustainable value</b> ...
7. Strategic & Operational Performance	... Achievements in delivering its Purpose and <b>creating Sustainable Value</b> ...

The obvious focus on sustainability and the SDGs answers the concerns of academics like Asif et al. [11], who argue that sustainability has not been included in the purview of major excellence awards.

Although the MBNQA does not expressly address sustainability, the model's basic principles, criteria, and criterion recommendations integrate elements from the three pillars of sustainability. One of the model's basic principles, in particular, requires leaders to emphasize contributions to the public, to consider societal well-being and benefit, and to be role models for community well-being. Furthermore, in all stakeholder transactions and interactions, firms should emphasize ethical behavior by all workforce members, and top executives should be role models for ethical behavior. Organizations should choose and assess outcomes that will assist them provide and balance value for their major stakeholders, such as financial, environmental, and social performance results [49].

The "Governance and Societal Contributions" sub-criterion of the model, addresses most of the issues concerning the social pillar of sustainability. According to the sub-criterion (see Table 5), this is achieved through appropriate leadership, which values diversity, promotes equity, provides a safe workplace for the workforce, supports communities, and ensures that everyone in the organization behaves legally and ethically. The model's criteria address environmental issues as well, by asking organizations to conserve natural resources and consider the environmental impact of the organization's work processes. Finally, the model requires organizations to collect and analyze all results necessary to sustaining an enterprise, including financial results, customer results, leadership and governance results, and results concerning their environmental performance (e.g., carbon footprint, energy consumption, emission levels, etc.).

**Table 5.** Sustainability in the criteria of the Baldrige Performance Excellence Framework.

Criteria/Sub-Criteria	Content
1.1 Senior Leadership	<p>This item asks about the key aspects of the senior leaders' responsibilities, with the aim of creating an organization that is successful now and in the future. Senior leaders play a central role in setting values and directions . . . and focus on <b>organizational sustainability</b>.</p> <p>Role-model senior leaders model the <b>valuing of diversity, and promote equity (fair treatment)</b> and inclusion (intentional engagement) for all people associated with the organization, creating a sense of belonging.</p> <p>This item asks how the organization ensures that everyone in the organization <b>behaves legally and ethically</b>, how it <b>fulfills its societal contributions</b>, and how it <b>supports its key communities</b>. Role-model organizations look for opportunities to excel in areas of <b>legal and ethical behavior</b>.</p> <p>This item asks organizations to <b>anticipate public concerns</b>, to <b>conserve natural resources</b> through the use of "green" technologies, reduction of their carbon footprint, replacement of hazardous chemicals with water-based chemicals, energy conservation, use of cleaner energy sources, or recycling of by-products or wastes, to <b>consider their societal contributions</b> by seeking opportunities to <b>contribute to the well-being of environmental, social, and economic systems and opportunities to support key communities</b>.</p>
1.2 Governance and Societal Contributions	<p>Organizations benefit from a diverse workforce that reflects the changing marketplace. Diversity encompasses personal differences among workforce members in many domains, such as race, religion, color, gender, national origin, disability, sexual orientation, age and generation, education, and perspectives. <b>Diversity of thinking</b> enhances innovation and problem solving, and helps anticipate risks.</p> <p><b>An equitable (fair)</b> and inclusive work environment enhances workforce satisfaction and engagement, and maximizes the benefits to organizational performance that are gained from a diverse workforce.</p>
5.1 Workforce Environment	<p>This item asks organizations to consider factors in work process design such as <b>safety, long-term performance, environmental impact, organization's carbon footprint and "green" manufacturing . . .</b></p>
5.2 Workforce Engagement	<p>All organizations, regardless of size, are required to meet minimum regulatory standards for workplace and <b>workforce safety</b>.</p>
6.1 Work Processes	<p>This category provides a system's focus that encompasses all results necessary to <b>sustaining</b> an enterprise. Measures and indicators of process effectiveness and efficiency might include the following:</p>
6.2 Operational Effectiveness	<ul style="list-style-type: none"> <li>• Work system performance that demonstrates improved cost savings or <b>higher productivity</b> by using internal and/or external resources</li> <li>• <b>Reduced emission levels, carbon footprint, or energy consumption</b></li> <li>• <b>Waste-stream reductions, by-product use, and recycling...</b></li> </ul>
7 Results	
7.1 Product and Process Results	



Table 5. Cont.

Criteria/Sub-Criteria	Content
7.2 Customer Results	This item places an emphasis on customer-focused results that go beyond satisfaction measurements, because customer engagement and relationships are better indicators and measures of <b>future success</b> in the marketplace and of <b>organizational sustainability</b> .
7.4 Leadership and Governance Results	This item asks organizations to provide results about <b>environmental, legal, and regulatory compliance issues</b> ; results of oversight audits by government or funding agencies; noteworthy achievements in these areas, as appropriate; <b>organizational contributions to societal well-being and support for key communities</b> .
7.5 Financial, Market, and Strategy Results	This item asks about organizations' key financial and market results, which demonstrate their <b>financial sustainability</b> and their marketplace achievements.

In terms of the Deming Prize, the most recent iteration of the model demands businesses to develop a set of proactive customer-oriented business objectives and plans that take social responsibility into consideration (see Table 6). Top management's job is to improve the organization's skills, human resource development, and corporate social responsibility while focusing on long-term success and social sustainability. The organization must be aware of its role and responsibilities as a member of society and establish specific indicators for measuring its performance in a number of social aspects, such as environmental preservation, regional contribution, fair operating practices, respect for human rights, and so on, in order to effectively use and implement TQM and achieve business objectives and strategies. Finally, evaluating the effects from the implementation of TQM, the model stresses out that an important factor for the organization's future sustainable growth is the acquirement of the necessary organizational capabilities.

Table 6. Sustainability in the Deming Prize criteria.

Evaluation Items	Content
I. Establishment of proactive customer-oriented business objectives and strategies	Under clear management belief, proactive customer-oriented business objectives and strategies has been established according to the management philosophy, industry, scale and environment, <b>taking into account social responsibility of the organization</b> .
II. Role of top management and its fulfillment	Top management is exhibiting leadership in formulation of proactive customer-oriented business objectives and strategies and implementation of TQM. It has insight concerning business objectives, strategies and environmental change and <b>understands the importance of enhancement of organizational capabilities, human resource development and corporate social responsibility</b> .
III. Suitable utilization and implementation of TQM for the realization of business objectives and strategies	
6. Development and active utilization of human resource and organizational capability	<b>Development of human resource and organizational capabilities</b> is being carried out in a planned manner and it is useful in realization of business objectives and strategies and implementation of TQM, and activation of people and organization that supports them.

Table 6. Cont.

Evaluation Items	Content
7. Initiatives for social responsibility of the organization	The organization is <b>aware of its role and responsibilities as a member of the society and has established specific indicators in this regard</b> and is adopting initiatives proactively (for instance, <b>environmental preservation, regional contribution, fair operating practices, respect for human rights, information security</b> , etc.) according to its management philosophy, type of industry, business scale and business environment.
V. Outstanding TQM activities and acquisition of organizational capabilities	The organization has obtained effects in the core areas for the realization of business objectives and strategies based on outstanding TQM activities regarding content and/or application of TQM and has acquired organizational capabilities necessary <b>for its future sustainable growth</b> .

## 5. Discussion

Comparing the last versions of the three BEMs, it is obvious that, although they cannot be considered as sustainability frameworks, sustainability factors are integrated into all models, at different levels, however.

Especially for the EFQM model, it has clearly shifted from a Quality Award to Business Excellence to a Business model that aims for outstanding results and corporate sustainability [42]. The model provides a method for organizations to measure their progress towards embedding the United Nations SDGs and associated targets into their way of working [33] and will undoubtedly contribute to achieving the SDGs [54]. The EFQM model's inferred value of sustainability is expressed in the three primary sections of the criteria, namely direction, execution, and outcomes. The EFQM model emphasizes a broader approach to sustainability in the direction section, which begins with an understanding of the ecosystem in which the firm operates, understanding their own capabilities and major challenges, and then developing strategy, governance, and performance management systems in accordance. "Creating sustainable value" receives 200 out of 400 points in the execution section. Similarly, "results of society perception" is a separate category in the results. Overall, the EFQM model has a conspicuous focus on sustainability and social responsibility and emphasizes the need to be addressed systematically, and can support an organization on its way to sustainable development by implementing helpful activities [55]. However, there is an absence of a recommended shortlist of suitable indicators within the description of results criteria 6 and 7 in the model [42], therefore of sustainability indicators as well.

The MBNQA does not explicitly address the issue of sustainability, unlike the EFQM paradigm. Many of its aspects, however, are mentioned in the model's basic ideals and requirements. As a function of leadership and as a result of leadership, societal responsibility is considered. "Social well-being" and "community support" are examples of social contribution as a leadership role. The "Governance and Societal Contributions" sub-criterion expressly addresses societal contribution, sustainability, and social responsibility, although they are also visible in other criteria. In comparison to the EFQM model, the MBNQA presents examples of economic, environmental, and social indicators that are critical for a company's long-term success.

Compared to the other two models, the Deming Prize addresses sustainability in a more general and less detailed way, while it remains a TQM model which supports that corporate sustainability can be achieved with the proper adoption of TQM principles. The model focuses mainly on social issues while environmental and economic issues are covered to a lesser extent. Concerning social responsibility, it is discussed in three points within the Deming Prize model. First, the model necessitates consideration of the organization's social responsibility while developing customer-related objectives and initiatives. Second, the model expects senior management to gain social responsibility insights in their capacity as

top management. Finally, the model involves adopting “initiatives for organizational social responsibility,” which is a separate category worth 10% of the weight in the utilization and implementation category. As a result, the Deming Prize model includes a considerable amount of social responsibility [45].

In summary, it can be concluded that the EFQM model has taken more important steps towards becoming a framework to support corporate sustainability by integrating SDGs and addressing sustainability in almost all its criteria. On the other hand, the Deming Prize still focuses mainly on the implementation of the TQM principles and remains rather a quality award model. However, none of the models can be used as a standardized method for implementing and measuring corporate sustainability. Although many of its concepts are addressed in one way or another, they are generally criticized for not providing an extensive list of sustainability indicators. Business excellence models can take advantage of their popularity and worldwide acceptance and extend their applicability by incorporating sustainability indicators, such as the ones provided in the GRI framework. Sustainability goals, such as the ones provided by The United Nations, should be set and aligned with the organizations’ strategies and purposes and BEMs should facilitate and support the achievement of these goals. Sustainability indicators, such as the ones provided by the GRI framework, should be explicitly defined and analyzed in order to measure the performance of the organizations and the extent to which they have achieved their sustainability goals. Table 7 presents an attempt of Tsalis et al. [26] to assess the achievement of the United Nations SDGs through the implementation of the GRI standards and can be considered as a good example of how appropriate indicators can be integrated into the BEMs as a means to achieve corporate sustainability. According to Table 7, each one of the United Nations SDGs can be assessed by a number of GRI indicators, which can be embedded in BEMs and assist organizations to better monitor and analyze their performance against sustainability goals and adjust their operations and strategies accordingly so as to be in line with the requirements of SDGs.

**Table 7.** Assessing the achievement of UN\_SDGs through the GRI standards. Reprinted with permission form [26].

UN_SDGs	GRI Standards
UN_SDG_1	201-1, 201-3, 202-1, 202-2, 203-2, 413-2
UN_SDG_2	201-1, 203-1, 203-2, 206-1, 411-1, 413-2, 416-1, 416-2
UN_SDG_3	203-2, 305-1, 305-2, 305-3, 305-6, 305-7, 306-1, 306-2, 306-3, 306-4, 401-2, 403-2, 403-3
UN_SDG_4	205-2, 404-1, 404-2, 404-3, 410-1, 412-2
UN_SDG_5	201-1, 202-1, 203-1, 401-1, 401-2, 401-3, 404-1, 404-3, 405-1, 405-2, 406-1, 414-1, 414-2
UN_SDG_6	303-1, 303-2, 303-3, 304-1, 304-2, 304-3, 304-4, 306-1, 306-2, 306-3, 306-5
UN_SDG_7	201-1, 203-1, 302-1, 302-2, 302-3, 302-4, 302-5
UN_SDG_8	201-1, 201-3, 202-1, 202-2, 203-2, 204-1, 301-1, 301-2, 301-3, 302-1, 302-2, 302-3, 302-4, 302-5, 303-3, 401-1, 401-2, 401-3, 402-1, 403-1, 403-2, 403-3, 403-4, 404-1, 404-2, 404-3, 405-1, 405-2, 406-1, 407-1, 408-1, 409-1, 414-1, 414-2
UN_SDG_9	201-1, 203-1
UN_SDG_10	201-1, 202-1, 203-1, 203-2, 204-1, 205-1, 205-3, 401-1, 404-1, 404-3, 405-2, 406-1, 412-3
UN_SDG_11	203-1, 413-1, 413-2
UN_SDG_12	204-1, 301-1, 301-2, 301-3, 302-1, 302-2, 302-3, 302-4, 302-5, 303-3, 305-1, 305-2, 305-3, 305-4, 305-6, 305-7, 306-1, 306-2, 306-3, 306-4, 308-1, 308-2, 417-1
UN_SDG_13	201-2, 302-1, 302-2, 302-3, 302-4, 302-5, 305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 305-7
UN_SDG_14	304-1, 304-2, 304-3, 304-4, 305-1, 305-2, 305-3, 305-4, 305-5, 305-7, 306-1, 306-3, 306-5

Table 7. Cont.

UN_SDGs	GRI Standards
UN_SDG_15	303-1, 303-2, 304-1, 304-2, 304-3, 304-4, 305-1, 305-2, 305-3, 305-4, 305-5, 305-7, 306-1, 306-2, 306-3, 306-5
UN_SDG_16	205-1, 205-2, 205-3, 206-1, 307-1, 406-1, 408-1, 410-1, 411-1, 412-1, 412-2, 412-3, 414-1, 414-2, 415-1, 416-2, 417-1, 417-2, 417-3, 418-1, 419-1
UN_SDG_17	201-1, 203-1, 203-2, 413-1, 413-2

Taking into account the analysis of the previous sections and the limitations and different ways in which the analyzed BEMs deal with corporate sustainability, a number of dimensions, such as those presented in Figure 4, are proposed, in order to enhance the ability of future versions of BEMs to accommodate the concept of sustainability more systematically.

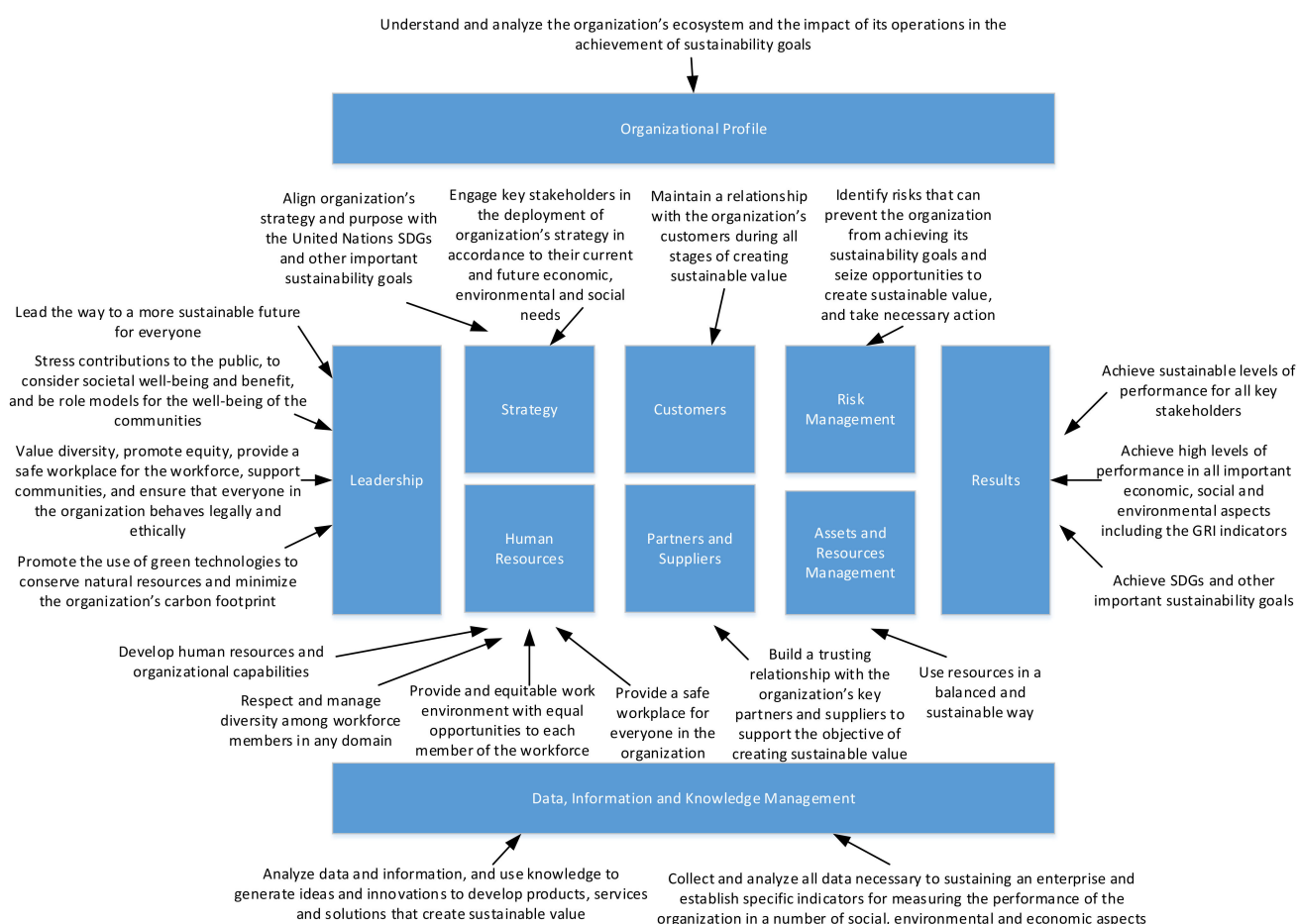


Figure 4. Dimensions of sustainability included in BEMs. Source: Authors' elaboration.

## 6. Conclusions

Future success of organizations cannot be reflected only in financial terms. The impact of organizations' operations on the environment and their contribution to society have also become increasingly important. Despite the growing importance for organizations to achieve so-called corporate sustainability, there is still no standard framework for measuring and promoting it. BEMs, as widely used models to help organizations achieve excellent performance, have been proposed as appropriate tools to promote corporate sustainability in a structured way by many researchers, with contradictory, however, results.

Considering that research in the literature on whether BEMs contribute to the achievement of corporate sustainability mainly concerns previous versions of the BEMs, this study

investigates the extent to which the latest versions of three major BEMs have integrated sustainability into their principles. After a thorough analysis of the core values and criteria of the EFQM model, the MBNQA and the Deming Prize, it is obvious that the concept of corporate sustainability to some extent is embedded into their structure and can be promoted through the implementation of BEMs. These conclusions are similar to the findings of Asif et al. [11] and Jankalová and Jankal [12] for the previous versions of the BEMs. However, the current versions of the three major BEMs address corporate sustainability to different extent. Among the three BEMs, the EFQM model has taken more steps to become a framework that supports corporate sustainability.

Despite the effort of the recent revisions of the three BEMs to include into their structure the concept of corporate sustainability, none of the models can be considered a sustainability framework, mainly because they are too generic in the use of performance indicators, and especially of sustainability indicators. Modifications to their structure are necessary if they are to be regarded as frameworks that can adequately promote corporate sustainability.

BEMs can benefit from their widespread use as structured models for achieving excellent levels of organizational performance and go a step further to become standard models for promoting corporate sustainability by integrating sustainability indicators, such as the ones provided in the GRI reporting framework. GRI indicators can be embedded in BEMs to assess the performance of organizations against sustainability goals, such as the ones provided by the United Nations, and a number of important dimensions promoting corporate sustainability, such as the ones proposed in this study, should be included in their structure. Future versions of BEMs can take advantage of the findings of this study and adapt their frameworks accordingly.

Considering that the findings of this study are mainly based on a thorough analysis of the core values and criteria of the three BEMs and the fact that the latest versions of the models have not yet been adequately explored or implemented, future research could include surveys that analyze managers' perceptions of the extent to which they believe that the implementation of a specific BEM has contributed to the achievement of corporate sustainability.

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