

Using Business Excellence Models to Achieve Corporate Sustainability

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Contributor: Yannis Politis, Evangelos Grigoroudis

Sustainability is defined as the assurance that human needs are satisfied today without harming the ability to fulfill the needs of a future generation. 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”. The concept of sustainability includes three pillars: social, economic and environmental. Business Excellence Models (BEMs) are models 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.

Keywords: triple bottom line approach ; corporate sustainability ; business excellence models

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. 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].

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][8][9][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.

2. History

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].

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].

A range of frameworks have been proposed to determine the level of corporate sustainability ^{[4][17][18]}. 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 ^{[19][20][21]}.

3. Milestones

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 ^[22]. 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 ^[23]:

- 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 ^[24]. 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 ^[25].

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 ^[26]. 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 ^[27]. The EFQM model has been acknowledged as a worldwide structure that helps firms manage change and enhance organizational performance since its launch in 1991 ^[28].

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 ^{[26][28]}. The model comprises 7 criteria grouped in three dimensions ^{[29][30]} and 23 sub-criteria:

- 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.

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 ^[31]. 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 ^[32].

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 ^[32]. Systematic processes include "leadership", "strategy", "customer focus", "measurement, analysis, and knowledge management", "workforce focus" and "operations focus" ^{[33][34]}. 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 ^[35]. 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 ^{[36][37]}: 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.

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 ^[32]. 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” ^[23]. 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 ^[38].

4. Current Status

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 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 ^[39] and to track progress toward Sustainable Development (SD) ^[40]. 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 ^[29].

Furthermore, sustainable levels of performance, a sustainable future, and sustainable value are further addressed in many of the EFQM model's criteria. 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 ^[29]. All essential stakeholders, as well as crucial economic, social, and environmental issues, must reach sustainable levels of performance.

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 ^[36].

The “Governance and Societal Contributions” sub-criterion of the model, addresses most of the issues concerning the social pillar of sustainability. According to the subcriterion, 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.).

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. 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.

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 [29]. 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 [27] and will undoubtedly contribute to achieving the SDGs [41]. 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 [42]. However, there is an absence of a recommended shortlist of suitable indicators within the description of results criteria 6 and 7 in the model [29], 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 [32].

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 concept 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.

5. New Concepts

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 1**, can be included, in order to enhance the ability of future versions of BEMs to accommodate the concept of sustainability more systematically.

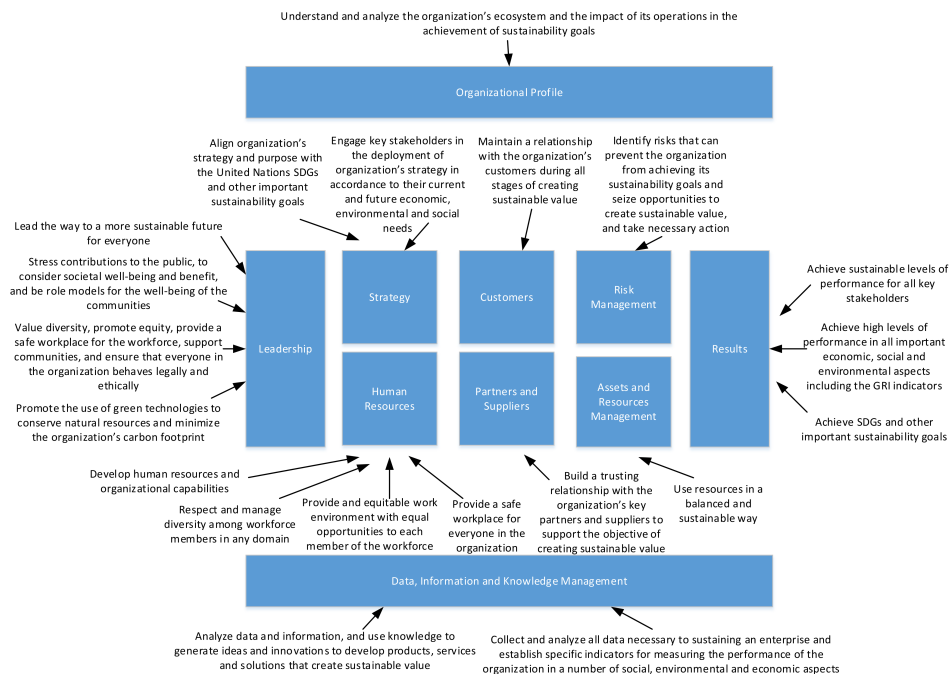


Figure 1. Dimensions of sustainability included in BEMs

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.

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 should be embedded in BEMs to assess the performance of organizations against sustainability goals, such as the ones provided by the United Nations, and the frameworks of BEMs should be adapted accordingly to include a number of important dimensions promoting corporate sustainability.

References

1. Hauber, D.C. A study of the EFQM Model. Financial Results, Sustainability and the Relation with ISO 9001. Master's Thesis, University of Barcelona, Barcelona, Spain, 2020. Available online: http://diposit.ub.edu/dspace/bitstream/2445/172128/1/TFM-INTBUS-Hauber_2020.pdf (accessed on 24 October 2021).
2. Montiel, I.; Delgado-Ceballos, J. Defining and measuring corporate sustainability: Are we there yet? *Organ. Environ.* **2014**, *27*, 113–139. [CrossRef]
3. United Nations. Sustainability Development Goals. Available online: <https://sdgs.un.org/> (accessed on 20 October 2021).
4. Nikolaou, I.E.; Tsalis, T.A.; Evangelinos, K.I. A framework to measure corporate sustainability performance: A strong sustainability-based view of firm. *Sustain. Prod. Consum.* **2019**, *18*, 1–18. [CrossRef]
5. ISO 26000:2010; Guidance on Social Responsibility; International Organization for Standardization: Geneva, Switzerland, 2010.
6. Jankalová, M.; Jankal, R. Sustainability assessment according to the selected business excellence models. *Sustainability* **2018**, *10*, 3784. [CrossRef]
7. Garvare, R.; Isaksson, R. Sustainable development: Extending the scope of business excellence models. *Meas. Bus. Excell.* **2001**, *5*, 11–15. [CrossRef]
8. Garvare, R.; Isaksson, R. Organizational sustainability management through minimized business excellence models. In *Proceedings of the 3rd International Conference on Total Quality Management—Advanced and Intelligence Approaches*, Belgrade, Serbia, 30 May–2 June 2005; pp. 33–40.

9. Isaksson, R. Total quality management for sustainable development. *Bus. Process Manag. J.* 2006, 12, 632–645. [CrossRef]
10. Marrewijk, M.V.; Hardjono, T.W. European corporate sustainability framework for managing complexity and corporate transformation. *J. Bus. Ethics* 2003, 44, 121–132. [CrossRef]
11. Asif, M.; Searcy, C.; Garvare, R.; Ahmad, N. Including sustainability in business excellence models. *Total Qual. Manag. Bus. Excell.* 2011, 22, 773–786. [CrossRef]
12. Jankalová, M.; Jankal, R. The assessment of Corporate Social Responsibility: Approaches analysis. *Entrep. Sustain. Issues* 2017, 4, 441–459. [CrossRef]
13. Jankalova, M. Approaches to the evaluation of Corporate Social Responsibility. *Procedia Econ. Financ.* 2016, 39, 580–587. [CrossRef]
14. World Commission on Environment and Development—WCED. *Our Common Future: The Brundtland Report*; Oxford University Press: Oxford, UK, 1987.
15. Valor, C. Corporate social responsibility and corporate citizenship: Towards corporate accountability. *Bus. Soc. Rev.* 2005, 110, 191–212. [CrossRef]
16. Elkington, J. *Cannibals with Forks*; Capstone Publishing Limited: Oxford, UK, 1997.
17. Searcy, C. Updating corporate sustainability performance measurement systems. *Meas. Bus. Excell.* 2011, 15, 44–56. [CrossRef]
18. Goyal, P.; Rahman, Z.; Kazmi, A.A. Corporate sustainability performance and firm performance research: Literature review and future research agenda. *Manag. Decis.* 2013, 51, 361–379. [CrossRef]
19. Topple, C.; Donovan, J.D.; Masli, E.K.; Borgert, T. Corporate sustainability assessments: MNE engagement with sustainable development and the SDGs. *Transnatl. Corp.* 2017, 24, 61–71. [CrossRef]
20. Tsalis, T.A.; Malamateniou, K.E.; Koulouriotis, D.; Nikolaou, I.E. New challenges for corporate sustainability reporting: United Nations' 2030 Agenda for sustainable development and the sustainable development goals. *Corp. Soc. Responsib. Environ. Manag.* 2020, 27, 1617–1629. [CrossRef]
21. Global Reporting Initiative—GRI. Consolidated set of GRI Sustainability Reporting Standards. 2020. Available online: <https://www.globalreporting.org/standards/> (accessed on 26 October 2021).
22. Porter, L.; Tanner, S. *Assessing Business Excellence*; Butterworth Heinemann: Oxford, UK, 1998.
23. Union of Japanese Scientists and Engineers—JUSE. The Deming Prize. Available online: https://www.juse.or.jp/deming_en/ (accessed on 27 September 2021).
24. Vokurka, R.; Stading, G.L.; Brazeal, J.A. Comparative analysis of national and regional quality awards. *Qual. Prog.* 2000, 33, 41–49.
25. National Institute of Standards and Technology—NIST. Baldrige Performance Excellence Program. Available online: <https://www.nist.gov/> (accessed on 27 November 2021).
26. Bohoris, G.A. A comparative assessment of some major quality awards. *Int. J. Qual. Reliab. Manag.* 1995, 12, 30–43. [CrossRef]
27. European Foundation for Quality Management—EFQM. The EFQM Model. Available online: <https://efqm.org/> (accessed on 7 November 2021).
28. Fonseca, L.; Amaral, A.; Oliveira, J. Quality 4.0: The EFQM 2020 model and Industry 4.0 relationships and implications. *Sustainability* 2021, 13, 3107. [CrossRef]
29. Fonseca, L. The EFQM 2020 model. A theoretical and critical review. *Total Qual. Manag. Bus. Excell.* 2021, 1–28. [CrossRef] *Sustainability* 2022, 14, 8175 20 of 20
30. Nenadál, J. The new EFQM model: What is really new and could be considered as a suitable tool with respect to quality 4.0 concept? *Qual. Innov. Prosper.* 2020, 24, 17–28. [CrossRef]
31. Turisová, R.; Pačaiová, H.; Kotianová, Z.; Nagyová, A.; Hovanec, M.; Korba, P. Evaluation of e-Maintenance Application Based on the New Version of the EFQM Model. *Sustainability* 2021, 13, 3682. [CrossRef]
32. Din, A.M.; Asif, M.; Awan, M.U.; Thomas, G. What makes excellence models excellent: A comparison of the American, European and Japanese models. *TQM J.* 2021, 33, 1143–1162.
33. Purba, H.H. A Systematic Literature Review of Malcolm Baldrige National Quality Award (MBNQA). *J. Technol. Manag. Grow. Econ.* 2021, 12, 1–12.

34. Miranda, R.D.; Reyes-Chua, E. Best Practices in Quality Assurance in Selected Higher Education Institutions (HEIs) in the Philippines in the Light of the Malcolm Baldrige Framework. *WSEAS Trans. Environ. Dev.* 2021, 17, 533–545. [CrossRef]
35. Ford, M.W. Management standards and institutional influence: An exploratory study using the Baldrige criteria. *Qual. Manag. J.* 2022, 29, 18–33. [CrossRef]
36. National Institute of Standards and Technology—NIST. Baldrige Excellence Builder—Key Questions for Improving Your Organization's Performance. Available online: <https://www.nist.gov/baldrige/products-services/baldrige-excellence-builder> (accessed on 27 November 2021).
37. Baldrige Performance Excellence Program. 2021–2022 Framework: Leadership and Management Practices for High Performance; U.S. Department of Commerce: Washington, DC, USA; National Institute of Standards and Technology: Gaithersburg, MD, USA, 2021.
38. Union of Japanese Scientists and Engineers—JUSE. The Application Guide for The Deming Prize and The Deming Grand Prize 2022 For Companies and Organizations Overseas. Available online: https://www.juse.or.jp/upload/files/DP_en_oubo2022v4.pdf (accessed on 2 July 2022).
39. Fonseca, L.; Carvalho, F. The reporting of SDGs by quality, environmental, and occupational health and safety-certified organizations. *Sustainability* 2019, 11, 5797. [CrossRef]
40. Barbier, E.B.; Burgess, J.C. The Sustainable Development Goals and the systems approach to sustainability. *Economics* 2017, 11, 1–23. [CrossRef]
41. Val, P.A.; Regaliza, J.C.P.; Marañón, P.A. Quality in organizations: Its capacity for transformation to create sustainable value. *Econ. Bus. Lett.* 2020, 9, 306–316.
42. Medne, A.; Lapina, I.; Zeps, A. Sustainability of a university's quality system: Adaptation of the EFQM excellence model. *Int. J. Qual. Serv. Sci.* 2020, 12, 29–43. [CrossRef]

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