

Article

Application of the EFQM Model in the Education Institution for Driving Improvement of Processes towards Sustainability

Andrea Sütőová ¹, Katarína Teplická ^{2,*} and Martin Straka ³

¹ Institute of Integrated Management Systems, Faculty of Materials, Metallurgy and Recycling, Technical University of Košice, 040 01 Košice, Slovakia; andrea.sutoova@tuke.sk

² Department of Management of Earth Resources, Faculty of Mining, Ecology, Process Control and Geotechnologies, Technical University of Košice, 040 01 Košice, Slovakia

³ Institute of Logistic and Transport, Faculty of Mining, Ecology, Process Control and Geotechnologies, Technical University of Košice, 040 01 Košice, Slovakia; martin.straka@tuke.sk

* Correspondence: katarina.teplicka@tuke.sk; Tel.: +421-556-022-997

Abstract: Effective process management is a basic prerequisite for increasing the quality and performance of educational organizations. The aim of the paper is to point out the potential for the application of the European Foundation for Quality Management (EFQM) Model 2020 to improve and perfect the processes in a Slovakian vocational school towards sustainability. We used the latest version of the EFQM Model and applied the questionnaire method to conduct a self-assessment. A study of the documentation was also carried out to get more insight into the processes of the school. The application of the EFQM Model 2020 pointed out weaknesses in areas such as those titled Organizational Culture, Driving Performance & Transformation, and Stakeholder Perceptions—namely, the perceptions of employees and partners. Improvements were primarily recommended in the fields of culture management to support changes, motivational processes to support creativity and innovation, human resource planning processes, employee training and development, performance indicators and performance management, and employees' and partners' perception measurement to enhance sustainable value for the students and key stakeholders. The paper contributes to the body of knowledge in the field of quality and performance management of Vocational Education and Training (VET) providers.

Keywords: EFQM Model 2020; self-assessment; process; performance; sustainable value; Vocational Education and Training (VET)



Citation: Sütőová, A.; Teplická, K.; Straka, M. Application of the EFQM Model in the Education Institution for Driving Improvement of Processes towards Sustainability. *Sustainability* **2022**, *14*, 7711. <https://doi.org/10.3390/su14137711>

Academic Editor: Firoz Alam

Received: 3 May 2022

Accepted: 22 June 2022

Published: 24 June 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Quality education is a prerequisite for a country's prosperous economy, and it is the basis of the Strategic Plan 2020–2024 of the European Union for Education. It ensures a highly qualified workforce and flexibility of employees in the labour market. Current trends show that educational organizations are looking for new ways to improve the quality of education by considering new approaches to quality management, integrating the analysis of risks, stakeholders, and processes [1]. Medne, et al. [2] (p. 30) commented that the approach most suitable for an educational organization must be aligned with that organization's strategic objectives, culture, and policies. Literature sources confirm that the organization may integrate sustainable development activities through quality management system models and excellence models such as the EFQM Model. The EFQM Model may provide a valuable framework, and presents a complete overview of an educational organization's weaknesses and strengths. It helps to define necessary improvements and stimulates their implementation on the road to the sustainable development of education. The EFQM Model is a tool designed for a comprehensive assessment of an organization and its performance [3]. The model has a wide range of uses in various organizations, institutions, and production companies. However, its use and implementation differs in

the public sector and the private sector. The model stresses the leadership role, clarity of strategy, leadership involvement, development of employees, provision and efficiency of resource usage, and partnership management as the basic preconditions for the effective and efficient functioning of an organization's core processes.

The main goal of the paper is to point out the potential for the application of the EFQM Model 2020 to improve and perfect the processes in the field of VET towards providing sustainable value for students and other stakeholders. Several sources confirm the benefits of EFQM Model application in higher education institutions in terms of quality improvement and development e.g., [4–7]. However, studies dealing with its application in the field of VET and secondary education are limited. In our study, we used the latest version of the EFQM Model and applied it to a secondary vocational school to identify weaknesses and propose improvements on the road to sustainability.

The paper is structured into five chapters. After the introduction, the second chapter describes the outputs from the literature review; it summarizes the relevant literature sources, focusing on the relevance of the EFQM Model usage in the context of driving sustainability performance, and reviews the state-of-play of its application in education institutions. Chapter three describes the methodology applied within the study in the form of a flowchart and presents the adjusted EFQM Model questionnaire used in the study. Chapter four presents the results of the self-assessment and the results of a correlation analysis focused on the identification of the relationship strengths between individual sub-criteria of the model (Direction and Execution dimensions) and stakeholder perception results. Subsequently, strengths and weaknesses on the basis of the assessment are presented, and improvements are proposed. The last chapter, conclusion, summarizes the results of the study and indicates future research activities.

2. Literature Review

2.1. EFQM Model Characteristics

The purpose of the EFQM Model is to improve processes through an organizational self-assessment approach and to gain an independent view of an organization and its functioning. The outputs of the self-assessment are the basis for internal or external processes to find the “best management practice” [8]. The EFQM Model supports organizations in managing change and has a significant impact on an organization's performance [9]. It promotes organizational development towards excellence and a long-term sustainable future. Nenadál [10] (p. 18) states that organizational excellence means delivering and sustaining the delivery of outstanding value to all key stakeholders. The EFQM Model provides a framework which enables the identification of the current level of organizational excellence and helps target improvements. The model was launched in 1992 as a framework for assessing applications for the European Quality Award. The aim was to boost the competitiveness of European companies. The model has a wide range of uses in various organizations, and has become the basis for a series of National Quality Awards [11]. Since 1992, the model has been revised several times to reflect changes in the global marketplace. The latest version of the model was released in 2019, and is shown in Figure 1.

The fulfillment of the basic assumptions of an organization's development reflected by the first two dimensions of the model—direction and execution—is a necessary condition of efficiency improvement. These assumptions must be fulfilled to achieve the desired results (third dimension of the EFQM Model) [12]. The dimensions of the model are supported by seven criteria. The EFQM Model 2020 enables the assessment and development towards excellence of an organization's management, operational, and support processes [13,14]. It emphasizes the importance of purpose, vision, and agile strategies to organizations, and stresses the formation of innovative, culture-supporting quality beliefs and shared goals, thereby enabling organizations to remain focused on their vision and strategy while creating sustainable value for stakeholders, resulting in the achievement of desired results [15].



Figure 1. The EFQM Model. Reprinted/adapted with permission from Ref. [11].

The maximum achievable score in assessing against the criteria of the EFQM Model is 1000 points. The maximum score for each criterion supporting Direction and Execution is 100, except for the criterion “creating sustainable value”, which has a maximum of 200 points. For each criterion related to Results, the maximum achievable score is 200 points [11]. Direction and Execution account for 60% of the summary score, and Results for 40%. Fonesca [16] (p. 12) commented that results are important, but they only represent what already happened. It is more important to know exactly why the organization exists, who it serves, whether it has a suitable culture for success, and how it creates and delivers value. Organizations achieving greater than 500 points are considered high-performing organizations where change is the standard, and where their practices have been improved to achieve results in line with their strategy [17]. A study by Perianez–Cristobal, et al. [18] (p. 1850) showed that top-scoring companies stand out for their strategic vision, for the effort they make to fulfill the needs of their stakeholders, and for the key role that human resources plays in strategy implementation.

Figure 2 shows the maturity levels and the journey towards advanced excellence through supported activities from the side of the EFQM organization—Training, Assessment, Sharing, Recognition. As can be seen, there are various assessments and diagnostic tools based on the EFQM Model that can be used, from beginner to mature organization, to manage internal and external assessment. From the simple self-assessment questionnaire to the business matrix assessment tool to the full business matrix advanced assessment tool against all the EFQM Model criteria and the associated score of the full RADAR attributes [19].

Improving organizational performance is based on predictive models that need to be implemented in organizations. Predictive methods and tools like the EFQM Model allow for the prediction of the effects of manager decisions on stakeholders, while the overall effect will be reflected by key performance indicators [8,20,21].

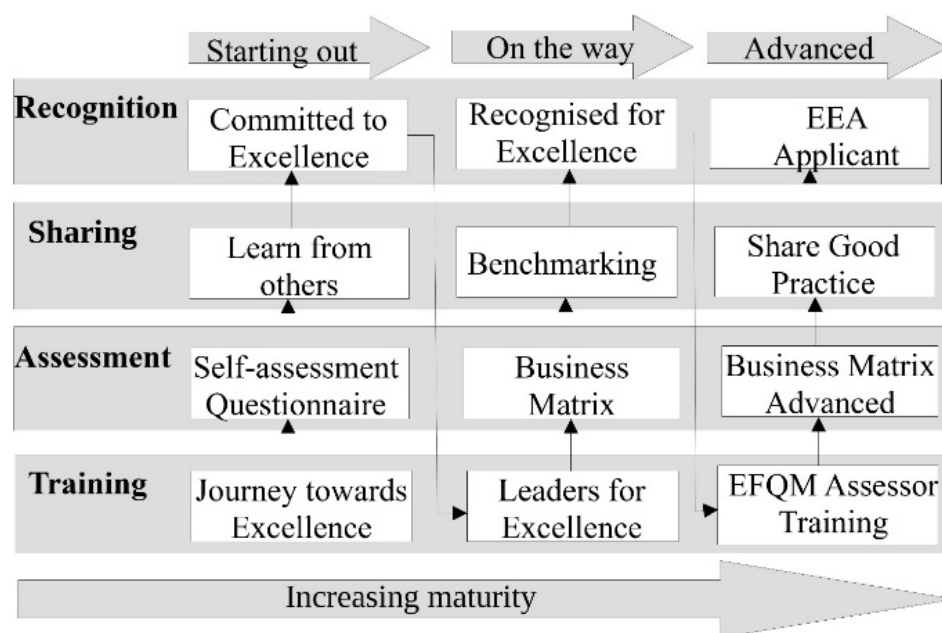


Figure 2. Activities towards advanced excellence. Reprinted/adapted with permission from Ref. [19].

The basic preconditions for the implementation of the EFQM Model in organizations are the motivations and decision-making strategies of those organizations' top managers. This fact is also confirmed in a study by Gómez-López, et al. [9] (p. 1233), which concluded that highly motivated companies implement the EFQM Model because of the decision and belief of the top management team.

The EFQM 2020 model is supported by European values and business ethics, and integrates the Sustainable Development Goals (SDGs). Sustainability is at the core of the EFQM 2020 model [16]. It covers all the three areas of sustainability (social, economic, and environmental). There are several studies confirming that the EFQM Model may guide in setting strategic focus on the sustainable development of organizations e.g., [16,22,23]. The EFQM framework can act as a blueprint to reinforce, and help to respond effectively, to opportunities and threats in a sustainable way [24]. It supports creating and delivering sustainable value [25]. According to the studies conducted by [26] (p. 2) and [27] (pp. 393–394), the EFQM Model is the most suitable approach for sustainability assessments compared to other quality-management models. The study by [24] (pp. 16–19) concluded that there was a positive and significant impact from the EFQM Model enablers on the sustainability results in the three main sustainability areas. According to [28] (p. 1158), a higher commitment to the EFQM Model implies a greater level of corporate social responsibility development (CSR). Several studies also confirmed the positive effect of the EFQM Model on organizations' innovation performance, which can be positively associated with sustainability activities and results. The study by [29] (pp. 25–27) confirmed the positive impact of the EFQM Model on incremental and radical innovations. According to [30] (pp. 253–256), the enablers of the EFQM Model are either directly or indirectly associated with the four types of innovations (product, process, organisation, and marketing). In our research, we used the EFQM to identify and focus on the areas and processes that need to be improved to drive the performance of the selected education institution towards sustainability.

2.2. Use of the EFQM Model in Education Institutions

Quality has become a critical success factor for educational organizations [31]. According to [32] (p. 835), in consideration of the current environment, educational organizations must develop innovative approaches to independently assure the quality of education. Nowadays, the education sector has become more competitive, and success relies on the recognition of stakeholders, along with an organization's capacity to attract funding, to

achieve sustainability [33]. In recent years, many educational institutions have implemented various Quality Management Systems (QMS) [34]. These enable the implementation of improvements based on the results of assessment procedures involving different components of the whole educational organization [35]. In general, Sursock, A. [36] (pp. 46–48) stated that a QMS has the following attributes: it can be tailored to suit an organization's needs without applying any ready-made model; it is organization-specific but follows national quality-assurance frameworks and guidelines; it can be a ready-made model such as the ISO model, EFQM Model, CAF, etc. Regarding the ISO and EFQM models, both can evaluate the critical processes and activities of an organisation [37]. ISO is a quality management system standard that sets requirements and emphasizes auditing, while the EFQM Model and CAF model are assessment tools, not standards, that involve criteria and give direction towards excellence. The CAF model, comparing to EFQM, is designed for public organizations. Rodriguez, et al. [38] (p. 1602) presented a study that analysed the simultaneous effect of a set of predictors of the impact perceived by teachers and managers of two different QMS, the EFQM Model and a QMS following the ISO 9001 standard. The results of the study pointed out that, in the schools applying EFQM Model, the perception of the impact was higher than with the ISO. The EFQM Model may guide an organization to focus strategically on the sustainable development of education [39]. Sciarrelli, et al. [40] (pp. 140–145) studied the effects of quality management practices on innovation in education and concluded that the EFQM Model provides a possible solution that should be considered. The study of Saraiva, et al. [41] (pp. 50–51) focused on the application of the EFQM Model in primary schools, and concluded that the EFQM Model can be easily applied and adapted by educational organizations as a powerful performance-improvement tool. Calvo-Mora, et al. [4] (pp. 120–122), Steed, et al. [7] (pp. 318–319) and Đorđević, A., et al. [42] (pp. 17–18) supported the validity of the EFQM Model as a reference framework for the implementation and improvement of quality in the field of higher education. Boele, et al. [43] (p. 103) presented a positive experience with the EFQM-based programme audit system used for internal quality assurance in higher education. Medne, et al. [2] (p. 37–38) concluded that the EFQM Model may provide a framework for identifying necessary improvements and driving activities on the road to sustainable development in higher education institutions. However, Osseo-Assare & Longbottom [44] (p. 35) pointed out the need for strong leadership commitment in the application of the EFQM Model, without which, it cannot provide the expected benefits. Du, et al. [45] (p. 8209) used the EFQM Model in their study with some constituent elements, such as educational content, responsibility assignment, management style, resource allocation, scientific research results, etc. The study confirmed the practicality of the model in higher education, and verified its ability to give direction and provide action points for educational-system reform. The EFQM Model promotes several principles, though the greatest emphasis is placed on the continuous improvement principle [46,47]. The EFQM Model has been used by education institutions. However, knowledge about its state-of-the-art application is still limited [48].

Regarding the concerns about the quality of VET provided in Europe, the recommendation of the European Parliament and the Council on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) was issued in June 2009 [49]. It aims to recognize the qualifications and competencies received by learners in different countries. VET is defined by the European Commission as the training in skills and teaching of knowledge related to a specific trade, occupation, or vocation in which a student or employee wishes to participate. EQAVET has driven many reforms in national quality-assurance systems. In this context, a new Act no. 61/2015 Coll. on Vocational Education and Training and on amendments and supplements to other laws was published in Slovakia. EQAVET can be used by VET providers and VET systems. It is based on the four-stage framework (Plan-Do-Check-Act), comprising quality assurance and continual improvement [49]. This quality cycle is based on the quality criteria and its related descriptors, and on a set of ten quality indicators [50]. The EFQM Model includes all four stages of the EQAVET quality cycle and can be used to help fulfil the EQAVET

criteria in organizations [51]. Any effort to achieve excellence presupposes the existence of challenging decisions that must be made to define, measure, and improve quality [52]. The three quality management phases are part of the EFQM Model. Nikolovska [53] (p. 41) stated that the EFQM Model has been applied in some VET schools in Turkey to drive improvement processes. A study conducted by Taraza & Anastasiadou [54] in the field of VET confirmed the enabler criteria of the EFQM Model as reliable and valid, having a direct effect on overall perceived quality. According to Inner City Fund International [55] (p. 4), VET providers that use the EFQM Model are known for having an established quality culture. Therefore, national inspectorates or accreditation bodies tend to spend less time quality-assuring those providers. Theocharous [56] (p. 36) commented that EQAVET is “static”, using a set of narrowly defined indicators, whereas EFQM uses the versatile RADAR logic to provide a structured approach analyzing an organization’s performance.

3. Materials and Methods

The research was carried out in a secondary vocational school. The purpose was to improve the processes in the educational organization, focusing not only on educational processes, but also on support and management processes, to enhance the sustainable value provided to students and key stakeholders. The research was carried out in 2021. There were 72 Teaching and Training Staff (TTS) and 9 Management Staff (MS) involved in the study. We applied the EFQM Model 2020 and used the self-assessment questionnaire for the purpose of identifying the current position of the educational organization and areas for improvement. The questionnaire followed the criteria and sub-criteria of the EFQM Model 2020, which are standardized, and questions were adjusted to the specifics of secondary vocational education. A pilot survey was given to a group of 20 employees to identify whether the questions were understandable for the respondents. Some of the questions were subsequently edited. Before the self-assessment, we also studied the documentation of the school to get more information. The whole process took place based on the steps presented in Figure 3.

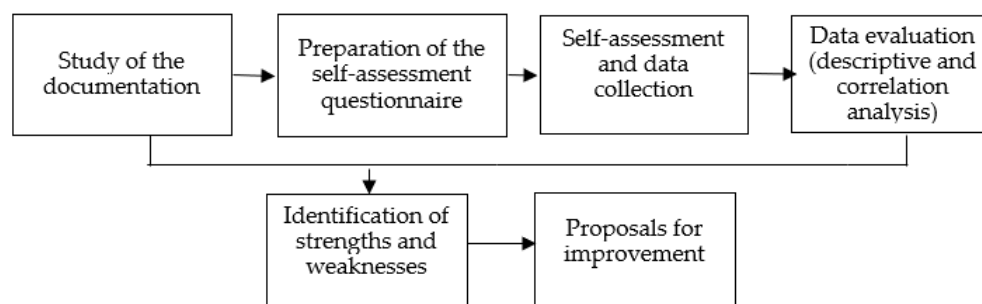


Figure 3. Algorithm of the research.

After the data collection, descriptive statistical analysis was used for data evaluation and correlation analysis to examine relationships between sub-criteria reflecting direction and execution dimensions and stakeholder perception results.

The EFQM Model stresses the stakeholder-centric view. Stakeholders of the vocational school involve groups such as those shown in Figure 4.

The Tables 1–3 present the three main dimensions of the EFQM Model 2020 and the main criteria with the related sub-criteria or items adjusted by us to the specifics of VET, that were used in the questionnaire.



Figure 4. Stakeholders of the vocational school.

Table 1. Items reflecting the criteria of the Direction dimension.

Direction	
1.	Purpose, Vision & Strategy
1.1	Defines purpose that inspires students and key stakeholders.
1.2	Identifies relevant stakeholders and understands their needs.
1.3	Monitors and reviews the ecosystem in which it operates considering the current challenges like digitization and education for sustainable development.
1.4	Develops strategy and transformation initiatives in partnership with relevant stakeholders.
1.5	Applies a performance management system aligned with the strategy and considers relevant challenges. Goals and targets are set, and programs are designed to meet them.
2.	Organization Culture & Leadership
2.1	Steers organizational culture and nurture values embracing diversity.
2.2	Supports change.
2.3	Supports creativity, innovation, and disruptive thinking.
2.4	Unites behind and engages in purpose, vision, and strategy.

Table 2. Items reflecting the criteria of the Execution dimension.

Execution	
3.	Engaging Stakeholders
3.1	Segments students based on appropriate criteria that provide insights into their needs, aspirations, and individual capabilities.
3.2	Engages and develops teaching and training, and non-teaching staff.
3.3	Builds and develops relationships with government bodies and public organizations (regional, local).
3.4	Understands the contribution to society and works with key society stakeholders to achieve mutual benefits.
3.5	Builds and develops relationships with partners and employers, and ensures support for the creation and providing of sustainable education.
4.	Creation Sustainable Value
4.1	Develops education strategies and programs considering the needs of students and relevant stakeholders.
4.2	Effectively communicates the values provided to students and key stakeholders.
4.3	Provides programs that enable students to meet the expected learning outcomes and become involved in the learning process.
4.4	Uses a variety of appropriate assessment tools and approaches to improve the delivery of education.
5.	Driving Performance & Transformation
5.1	Uses performance management system to ensure a coherent link between purpose, strategy, value creation objectives, and results.
5.2	Identifies transformation and change needs and realizes them.
5.3	Provides modern learning technologies and promotes the adoption of innovative classroom practices and digital and technological fluency.
5.4	Leverages the data needed to support transformation plans as well as manages education processes.
5.5	Manages critical resources (including human resources) that are vital for ongoing strategic, performance and transformation needs.

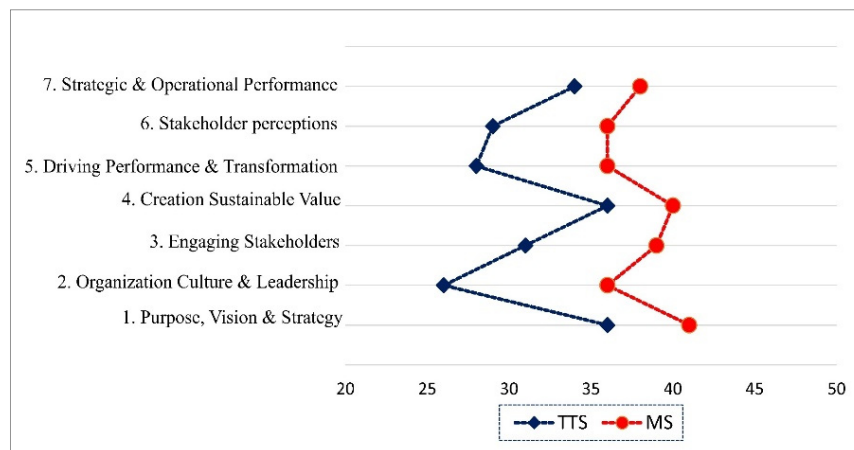
Table 3. Items reflecting the criteria of the Results dimension.

Results	
6.	Stakeholder perceptions
6.1	Identifies, reviews, and improves student perceptions results over time.
6.2	Identifies, reviews, and improves employee perceptions results over time.
6.3	Identifies, reviews, and improves perception results of government bodies and public organizations over time.
6.4	Identifies, reviews, and improves perception results of partners and employers over time.
6.5	Identifies, reviews, and improves society perception results over time.
7.	Strategic & Operational Performance
7.1	Results that link with the purpose and creating value have been identified and these continue to be reviewed and improved over time.
7.2	Positive trends or sustained outstanding performance over the strategic period have been achieved.
7.3	Measures of the impact on the performance of transformation activities indicate positive results.
7.4	Uses data and other insight, to predict future performance

For the assessment of the questionnaire items by the respondents, the percentage scale from 0–100% was used. The anonymous questionnaire was distributed online, while the items were explained to employees to get relevant data. The respondents expressed the level of their agreement with the statements in the questionnaire.

4. Results and Discussion

The number of received questionnaires was 81. The data were assessed by the two groups of employees—TTS and MS. There were seventy-two questionnaires completed by TTS and nine by the MS. The average values of the individual sub-criteria for the two segments are shown in Table A1 in Appendix A. Figure 5 shows the average values of the EFQM Model 2020 criteria based on the assessment of the two segments.

**Figure 5.** Average values of the EFQM Model criteria assessed by TTS and MS.

All of the sub-criteria were rated higher by the MS compared to the TTS. The Organization Culture and Leadership (2) achieved the lowest value in both cases. Subsequently, the lowest-rated criteria are Driving Performance & Transformation (5) and Stakeholders Perception (6). The highest-rated criteria are Strategic & Operational Performance (7) and Purpose, Vision & Strategy (1).

Table 4 includes the average values for the individual criteria assessed by TTS and MS and the differences in the assessments.

Table 4. Average values of the EFQM Model criteria assessed by the TTS and MS and differences.

Criteria	TTS (%)	MS (%)	(TTS – MS)	Average (%)	Weigh	Score
1.	36	41	–5	39	1	39
2.	26	36	–10	31	1	31
3.	32	39	–7	36	1	36
4.	36	40	–4	38	2	76
5.	28	36	–8	32	1	32
6.	29	36	–7	33	2	66
7.	34	38	–4	36	2	72
Σ	212	260	–48	237	10	352

The greatest difference is in the assessments of Organization Culture & Leadership (2), where all sub-criteria are low-rated by the teaching and training staff. This area can be considered as a weakness, where appropriate actions need to be taken. Criterion Driving Performance & Transformation (5) are low-rated, and a greater difference in the assessments of the two groups can be seen as well. The difference in the Engaging Stakeholders (3) criteria is mainly caused by the sub-criterion engagement and development of the teaching and training staff, where the teaching staff rated this area much lower than did management. Results point out the need for the regular employee and partners perception measurements followed by improvement activities on the basis of the results, as these sub-criteria were low-rated within the Stakeholders Perception Criterion (6). Table 4 shows the total score (352 points) achieved according to the weight of the individual EFQM Model criteria. The total score was calculated on the basis of the assessments of both groups of employees (average values of the criteria).

Sub-criteria of the individual criteria reflecting the Direction and Execution dimensions were analysed in relation to the Stakeholder perceptions criteria. Correlation analysis showed the strength of relationships between analyzed sub-criteria and Stakeholder perceptions (students; employees; government bodies and public organizations; partner organizations and employers; and society). Table 5 shows the results of the correlation analysis and highlights significant correlations.

Table 5. Correlation matrix.

Sub–Criteria	6.1	6.2	6.3	6.4	6.5
1.1	0.124	0.075	0.107	0.227	0.203
1.2	0.311 *	0.146	0.296 *	0.482 *	0.168
1.3	0.263 *	0.333 *	0.217	0.293 *	0.287 *
1.4	0.216	–0.008	0.233	0.063	0.216
1.5	0.129	0.347 *	0.072	0.142	0.072
2.1	0.153	0.233	0.082	–0.014	0.081
2.2	0.399 *	–0.012	0.292 *	0.103	0.239
2.3	0.228	0.452 *	0.196	0.206	0.314 *
2.4	0.009	0.288 *	–0.089	0.072	0.106
3.1	0.274 *	0.202	0.389 *	0.231	0.009
3.2	0.422 *	0.486 *	0.223	0.014	0.015
3.3	0.052	0.107	0.099	0.073	0.217 *
3.4	0.221	0.241	0.183	0.356 *	0.298 *
3.5	0.193	0.082	0.126	0.521 *	0.274 *
4.1	0.457 *	0.193	0.149	0.392 *	0.395 *
4.2	0.216	0.236	0.182	0.209	0.277
4.3	0.239	0.281	0.450 *	0.276 *	0.362 *
4.4	0.228	0.218	0.328 *	0.054	0.139
5.1	0.032	0.314 *	–0.012	0.108	0.039
5.2	0.294 *	0.214	0.193	0.211	0.283 *
5.3	0.409 *	–0.058	0.326 *	–0.186	0.329 *
5.4	0.190	0.149	0.086	0.071	0.105
5.5	0.216	0.427 *	0.239 *	0.006	0.003

* $p \leq 0.05$.

The results show that Students' perception (6.1) mainly correlate with the involvement of stakeholders in educational strategies and program development (0.457), the engagement and development of the staff (0.422), the modernization of learning technologies (0.409), and the support of change (0.399). Employees' perception (6.2) mostly relates to the engagement and development of the staff (0.486), the support of creativity and innovation (0.412), and the management of critical resources (0.427). The perception of government bodies and regional authorities (6.3) is associated with the realization of education programs (0.450) and the segmentation of students (0.389). In the case of the perceptions of partner organizations and employers (6.4), there is greatest correlation with the development of the relationship between those two groups (0.521), the identification and understanding of the needs of stakeholders (0.482), and the development of education strategies and programs that consider stakeholders' needs (0.392). Society perception results (6.5) are mostly related to the development of education strategies and programs that consider stakeholders needs (0.395), and the providing of programs that enable adequate learning outcomes (0.362).

The lowest-rated criteria by the respondents are Organization Culture & Leadership (2) and Driving Performance & Transformation, (5) as can be seen in Figure 5. Within Organization Culture & Leadership, there are two sub-criteria identified as having a significant relationship with students' and employees' perception results, which achieves correlation over 0.350—supporting change and motivation for creativity and innovation. Within Driving Performance & Transformation (5), significant correlations achieving values over 0.350 in relation to students' and employees' perception are modernization of learning technologies and managing critical resources (competencies). These areas should be the primary interest of the school.

Based on the results from the self-assessment and the study of the school's documentation the following strengths and weaknesses were identified, shown in Table 6.

Table 6. Analysis of strengths and weaknesses.

Criteria	Strengths	Weaknesses
1. Purpose, Vision & Strategy	- Existence of purpose and inspiring vision - Stakeholders are identified - Goals are stated (national and regional policies reflected) - Programs and strategic plans and assigned resources	- Process of systematic monitoring of stakeholders' needs - Process of ecosystem monitoring - Process of performance management and indicator setting - Stakeholders' involvement with planned activities
2. Organization Culture & Leadership	- Existence of code of conduct	- Motivation processes supporting creativity and innovation - Internal communication on quality and innovation issues - Regular meetings of teaching and training staff with the management
3. Engaging Stakeholders	- Cooperation with national and regional authorities - Segmentation of students on the basis of their special needs	- Cooperation and systematic communication with partner companies, employers and society - Training and development of the staff beyond legal requirements
4. Creation Sustainable Value	- Communication of provided values - Learning outcomes - Assessment processes of achieving learning outcomes	- Involvement of stakeholders in the development of educational strategies and programs - Procedures for the delivery of education
5. Driving Performance & Transformation	- Action plans on the base of external evaluations	- Regular and coherent data collection (indicators/metrics) at different levels - Procedures of initiation and management of change - Human resource planning (age and competence structure) - Investments in modern learning technologies and classrooms
6. Stakeholder perceptions	- Regular monitoring of students' perception and taking action based on the results - Positive trends in perception of national and regional authorities	- Monitoring of partner companies' and employers' perception - Action plans based on the employees' perception measurements - Monitoring society perception
7. Strategic & Operational Performance	- Positive results of operational measures	- Benchmarking measures and predictive data monitoring - Strategic results - Impact of transformation initiatives on performance

Taking into account the above presented results and study of the school's documentation, the following improvement actions were suggested:

1. Purpose, Vision & Strategy
 - development of the processes of monitoring stakeholders' needs,
 - development of the processes of reviewing ecosystem challenges (labour market needs, changes in technology, sustainability issues . . .),
 - creation of a system of indicators reflecting the purpose and strategy.
2. Organization Culture & Leadership
 - improvement of motivation processes to support creativity and innovation in the organization,
 - development and implementation of communication processes focused on quality and innovation issues,
 - implementation of regular meetings between staff and management to communicate values, goals, and strategies.
3. Engaging Stakeholders
 - involvement of representatives of partners' organizations and employers in strategic planning and development,
 - planning and execution of training activities for teaching and training staff.
4. Creation Sustainable Value
 - involvement of partner organizations' representatives and employers in the development of educational strategies and programs; development of appropriate communication processes,
 - development of procedures for the realization of teaching and training processes.
5. Driving Performance & Transition
 - implementation of regular data collection of performance metrics,
 - development and implementation of a change-management process,
 - investment in modern-learning technologies and classrooms,
 - identification of the needs of future competencies and development of a human resource provision plan.
6. Stakeholder perceptions
 - taking actions based on the results of employees' perception measurements,
 - implementation of a process to monitor the perception of society,
 - implementation of regular measurement processes of partner organizations' and employers' perceptions.
7. Strategic & Operational Performance
 - implementation of benchmarking measures and predictive data monitoring.

As mentioned above, in connection with the results of the self-assessment and correlation analysis, the school should primarily focus on creating a suitable culture supporting change, the improvement of motivation processes helping to support creativity and innovation, and the implementation of modern learning technologies. The management of critical resources, namely competencies, should also be a priority, and plans for human resource provisions should be developed in alignment with the strategy of the school.

5. Conclusions

The study showed the differences in the assessment of individual EFQM Model 2020 criteria by the two groups, with management staff rating the individual criteria higher. Results indicate the lowest score for Organization Culture & Leadership, Stakeholder Perception (employees, partners, and society perception), and Driving Performance & Transition. Correlation analysis helped to identify the significant relations of the individual sub-criteria of the EFQM Model (Direction and Execution) with the Stakeholder perception results. On the basis of the results, strengths and weaknesses were identified,

and corrective actions were suggested. Recommended improvements were proposed in the fields of suitable culture development aligned with purpose and values supporting change, improvement of motivation processes towards creativity and innovation, managing competencies and planning human resources), development of teaching and training staff, relevant performance indicators setting and performance measurement, internal and external communication processes, and employees and partners perception measurements. The proposed actions may bring positive benefits in the future. All corrective actions are linked to the use of effective tools that are in synergy with process management. The strategy of the education institutions must be based on making changes in all processes (not only core processes) to achieve the desired outcome.

The paper contributes to the body of knowledge in the field of quality and performance management of VET providers, where studies dealing with the EFQM Model in VET are limited and mostly focused on the EQAVET criteria. The application of the EFQM Model can help to fulfil the EQAVET criteria. The EFQM Model helps to focus on strategic areas and future challenges, and guides organizations to develop strategies that incorporate sustainability issues and take all relevant stakeholders into account. It may help to increase the ability of VET providers to respond in an agile, effective, and efficient manner to opportunities and threats, and help them to provide long-term value for students and key stakeholders.

As the school is at the starting point in terms of excellence-building, we used a simple questionnaire which helps less-mature organizations identify their current state and determine potential improvement opportunities. In the future, RADAR logic will enable the delivery of more robust and detailed analyses, as its elements are broken into several attributes that guide an organization's focus. It will be applied after learning and implementing improvements on the way towards achieving advanced "organizational excellence".

Author Contributions: Conceptualization, methodology, original draft preparation, A.S.; investigation, data curation, visualization, K.T.; writing—review and editing and funding acquisition, M.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the project KEGA 016TUKÉ-4/2020 "Projects of application research as instrument for new model development of education in study program Industry logistic" and the project VEGA 1/0317/19 "Research and development of new smart solutions based on the principles of Industry 4.0. logistics, 3D modelling and simulation for streamlining production in the mining and building industry".

Institutional Review Board Statement: Non applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Average values of individual sub-criteria assessed by TTS and MS.

Sub-Criteria	TTS	MS	Average	Sub-Criteria	TS	MS	Average
1.1	39	46	43	4.3	35	40	38
1.2	37	44	41	4.4	35	37	36
1.3	36	42	39	5.1	26	34	30
1.4	37	39	38	5.2	27	36	32
1.5	30	34	32	5.3	31	39	35
2.1	25	35	30	5.4	26	35	31
2.2	27	34	31	5.5	28	36	32
2.3	26	36	31	6.1	34	36	35
2.4	26	38	32	6.2	23	38	31
3.1	37	39	38	6.3	30	36	33
3.2	21	36	29	6.4	26	33	30
3.3	35	41	38	6.5	33	37	35
3.4	35	39	37	7.1	35	39	37
3.5	33	40	37	7.2	36	39	38
4.1	35	37	36	7.3	36	38	37
4.2	35	37	36	7.4	33	35	34

References

- Algheriani, N.M.; Majstorovic, V.D.; Kirin, S.; Spasojevic Brkic, V. Risk Model for Integrated Management System. *Teh. Vjesn.* **2019**, *26*, 1833–1840.
- 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. [\[CrossRef\]](#)
- Gomez, G.J.; Martinez, C.M.; Martinez, L.A. A critical evaluation of the EFQM model. *Int. J. Qual. Reliab. Manag.* **2011**, *28*, 484–502. [\[CrossRef\]](#)
- Calvo-Mora, A.; Leal, A.; Roldán, J.L. Using enablers of the EFQM model to manage institutions of higher education. *Qual. Assur. Educ.* **2006**, *14*, 99–122. [\[CrossRef\]](#)
- Osseo-Asare, A.E.; Longbottom, D.; Murphy, W.D. Leadership best practices for sustaining quality in UK higher education from the perspective of the EFQM Excellence Model. *Qual. Assur. Educ.* **2005**, *13*, 148–170. [\[CrossRef\]](#)
- Ramune, K. Application of ISO 9001 and EFQM Excellence Model within Higher Education Institutions: Practical Experiences Analysis. *Soc. Transform. Contemp. Soc.* **2013**, *1*, 82–85.
- Steed, C.; Maslow, D.; Mazaletskaya, A. The EFQM Excellence Model for Deploying Quality Management: A British-Russian Journey. *High. Educ. Eur.* **2005**, *30*, 307–319. [\[CrossRef\]](#)
- Calvo-Mora, A.; Blanco-Oliver, A.; Roldán, J.L.; Perianez-Cristobal, R. TQM factors and organisational results in the EFQM excellence model framework: An explanatory and predictive analysis. *Ind. Manag. Data Syst.* **2019**, *120*, 2297–2317. [\[CrossRef\]](#)
- Gómez-López, R.; Serrano-Bedia, A.M.; López-Fernández, C.M. Motivations for implementing TQM through the EFQM model in Spain. *Total Qual. Manag. Bus. Excell.* **2016**, *27*, 1224–1245. [\[CrossRef\]](#)
- 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. [\[CrossRef\]](#)
- EFQM Model. Available online: <https://efqm.org/efqm-model> (accessed on 12 December 2021).
- Turisová, R.; Pačaiová, H.; Kotianová, Z.; Nagyová, A.; Hovanec, M.; Korba, P. Evaluation of eMaintenance Application Based on the New Version of the EFQM Model. *Sustainability* **2021**, *13*, 3682. [\[CrossRef\]](#)
- Jaeger, A.; Matyas, K. Transformation of the EFQM approach from business towards operations excellence. *Prod. Eng.* **2016**, *10*, 277–291. [\[CrossRef\]](#)
- Suaréz, E.; Roldán, J.L.; Calvo-Mora, A. A structural analysis of the EFQM model: An assessment of the mediating role of process management. *J. Bus. Econ. Manag.* **2012**, *15*, 862–885. [\[CrossRef\]](#)
- Filho, W.L.; Rankenberger, F.; Salvia, A.L.; Azeiteiro, U.; Alves, F.; Castro, P.; Will, M.; Platje, J.; Lovren, V.O.; Brandli, L.; et al. A framework for the implementation of the Sustainable Development Goals in university programmes. *J. Clean. Prod.* **2021**, *299*, 126915. [\[CrossRef\]](#)
- Fonesca, L.; Amaral, A.; Oliveira, J. Quality 4.0: The EFQM 2020 Model and Industry 4.0 Relationships and Implications. *Sustainability* **2021**, *13*, 3107. [\[CrossRef\]](#)
- Escrig, A.B.; Menezes, L.M. What characterizes leading companies within business excellence models? An analysis of “EFQM Recognized for Excellence” recipients in Spain. *Int. J. Prod. Econ.* **2015**, *169*, 362–375. [\[CrossRef\]](#)
- Perianez-Cristobal, R.; Calvo-Mora, A.; Rey-Moreno, M. Organisational profiles: Key factors and results from the EFQM model perspective. *Total Qual. Manag. Bus. Excell.* **2020**, *32*, 1850–1873. [\[CrossRef\]](#)

19. EFQM Assess Base. Available online: <https://assessbase.digitalefqm.com/> (accessed on 11 November 2021).
20. Paulikova, A.; Škurková, K.L.; Kopilčáková, L.; Kopilčáková-Stoyanová, A.; Kirechev, D. Innovative approaches to model visualization for integrated management systems. *Sustainability* **2021**, *13*, 8812. [\[CrossRef\]](#)
21. Adámek, P.; Bauerová, R.; Zapletalová, Š. A Research Agenda of “EFQM Recognized for Excellence” recipients in the Czech Republic: The Case Study of Application of Business Excellence Model. *Glob. J. Bus. Econ. Manag.* **2020**, *10*, 161–175. [\[CrossRef\]](#)
22. De Menezes, L.M.; Escrig-Tena, A.B.; Bou-Llusar, J.C. Sustainability and Quality Management: Has EFQM fostered a sustainability orientation that delivers to stakeholders? *Int. J. Oper. Prod. Manag.* **2022**. [\[CrossRef\]](#)
23. Manresa, A.; Rivera, D.E. Excellence in Sustainable Management in a Changing Environment. *Sustainability* **2021**, *13*, 2296. [\[CrossRef\]](#)
24. Kaplani, G.; Zafiroopoulos, K.; Orlando, B. A model of quality assurance in primary education management. *Case Greece. Cogent Bus. Manag.* **2022**, *9*, 2016555. [\[CrossRef\]](#)
25. Arranz Val, P.; Puche Regaliza, J.C.; Antón Marañá, P. Quality in organizations: Its capacity for transformation to create sustainable value. *Econ. Bus. Lett.* **2020**, *9*, 306–316. [\[CrossRef\]](#)
26. Jankalová, M.; Jankal, R. Sustainability Assessment According to the Selected Business Excellence Models. *Sustainability* **2018**, *10*, 3784. [\[CrossRef\]](#)
27. Adamek, P. An Investigation of Interconnection between Business Excellence Models and Corporate Sustainability Approach. *Eur. J. Sustain. Dev.* **2018**, *7*, 381–394. [\[CrossRef\]](#)
28. Martín-Gaitero, J.P.; Escrig-Tena, A.B. The relationship between EFQM levels of excellence and CSR development. *Int. J. Qual. Reliab. Manag.* **2018**, *35*, 1158–1176. [\[CrossRef\]](#)
29. Jurado-Salgado, J.I.; Naranjo-Valencia, J.C.; Osorio-Londoño, A.A. Incidence of exploration and exploitation capabilities in innovation: The role of cultural factors. *Innovation* **2022**, *7–8*, 1–27. [\[CrossRef\]](#)
30. Kafetzopoulos, D.; Gotzamani, K. Investigating the role of EFQM enablers in innovation performance. *TQM J.* **2019**, *31*, 239–256. [\[CrossRef\]](#)
31. Vykydal, D.; Foltá, M.; Nenadál, J. A Study of Quality Assessment in Higher Education within the Context of Sustainable Development: A Case Study from Czech Republic. *Sustainability* **2020**, *12*, 4769. [\[CrossRef\]](#)
32. Nabi, Y.; Shaprova, G.; Bugarova, S.; Suleimenova, K.; Toktarkozha, G.; Kobenkulova, Z.; Zhekseminova, A.; Sekenova, A. The validity of a design technology for a higher education quality assurance system based on the EFQM model. *Eurasia J. Math. Sci. Technol. Educ.* **2018**, *14*, 831–847.
33. Santos, R.; Abreu, A.J. EFQM model implementation in a Portuguese Higher education institution. *Open Eng.* **2019**, *9*, 99–108. [\[CrossRef\]](#)
34. Zgodavová, K.; Urbančíková, N.; Kisela, M. Enhancement of the Quality Assurance Model at the Slovak University: A Case Study. *Qual. Innov. Prosper.* **2015**, *19*, 1–17. [\[CrossRef\]](#)
35. Diez, F.; Iraurgi, I.; Villa, A. Quality management in schools: Analysis of mediating factors. *S. Afr. J. Educ.* **2018**, *38*, 1–8.
36. Sursock, A. *Examining Quality Culture Part II: Processes and Tools—Participation, Ownership and Bureaucracy*, 1st ed.; European University Association: Brussels, Belgium, 2011; pp. 46–48.
37. Campatelli, G.; Citti, P.; Meneghin, A. Development of a simplified approach based on the EFQM model and Six Sigma for the implementation of TQM principles in a university administration. *Total Qual. Manag. Bus. Excell.* **2011**, *22*, 691–704. [\[CrossRef\]](#)
38. Rodriguez-Mantilla, J.; Fernandez-Cruz, F.; Fernandez-Diaz, M. Factors associated with the impact of implementing quality management systems at schools: A multilevel analysis. *Total Qual. Manag. Bus. Excell.* **2018**, *31*, 1588–1604. [\[CrossRef\]](#)
39. Laurett, R.; Mendes, L. EFQM model’s application in the context of higher education: A systematic review of the literature and agenda for future research. *Int. J. Qual. Reliab. Manag.* **2019**, *36*, 257–285. [\[CrossRef\]](#)
40. Sciarelli, M.G.; Sciarelli, M.; Gheith, M.H.; Tani, M. The relationship between quality management practices, organizational innovation, and technical innovation in higher education. *Qual. Assur. Educ.* **2020**, *28*, 137–150. [\[CrossRef\]](#)
41. Saraiva, P.M.; Rosa, M.J.; d’Orey, J.L. Applying an Excellence Model to Schools. *Qual. Prog.* **2003**, *11*, 46–51.
42. Đorđević, A.; Klochov, Y.; Arsovski, S.; Stefanović, N.; Shamina, L.; Pavlovič, A. The Impact of ICT Support and the EFQM Criteria on Sustainable Business Excellence in Higher Education Institutions. *Sustainability* **2021**, *13*, 7523. [\[CrossRef\]](#)
43. Boele, B.B.; Burgler, H.; Kuiper, H. Using EFQM in higher education: Ten years of experience with auditing at Hanzehogeschool Groningen. *Beiträge Zur Hochschulforschung* **2008**, *30*, 94–110.
44. Osseo-Asare, A.E.; Longbottom, D. The need for education and training in the use of EFQM model for quality management in UK higher education institutions. *Qual. Assur. Educ.* **2002**, *10*, 26–36. [\[CrossRef\]](#)
45. Du, G.; Yuan, J.; Miao, F.; Wei, P. Effectiveness of design process of education quality assurance system based on EFQM model. *Eurasia J. Math. Sci. Technol. Educ.* **2017**, *13*, 8205–8211.
46. Titko, J.; Bierne, J. Competence development of young entrepreneurs through educational innovations. *Mark. Manag. Innov.* **2019**, *3*, 255–264. [\[CrossRef\]](#)
47. Rivera, D.E.; Terradellas Piferrer, M.R.; Benito Mundet, M.H. Measuring Territorial Social Responsibility and Sustainability Using the EFQM Excellence Model. *Sustainability* **2021**, *13*, 2153. [\[CrossRef\]](#)
48. Markulík, Š.; Sinay, J.; Pačaiová, H. Quality assurance in the automotive industry and industry 4.0. In *Smart Technology Trends in Industrial and Business Management*, 1st ed.; Cagáňová, D., Balog, M., Knapčíková, L., Soviar, J., Mezarcios, S., Eds.; Springer: Cham, Switzerland, 2019; pp. 217–225.

49. EQAVET. Available online: <https://ec.europa.eu/social/main.jsp?catId=1536&langId=en> (accessed on 11 December 2021).
50. Sokovic, M.; Pavletic, D.; Pipan, K.K. Quality Improvement Methodologies—PDCA Cycle, RADAR Matrix, DMAIC and DFSS. *J. Achiev. Mater. Manuf. Eng.* **2010**, *41*, 476–483.
51. Ulicna, D.; Curth, A. *The Quality Cycle of the EQAVET: Study on Quality Assurance in Continuous VET and on Future Development of EQAVET*, 1st ed.; ICF: Brussels, Belgium, 2013; pp. 1–8.
52. Galvao, M.E. The Making the Case for Vocational Education and Training Improvement: Issues and Challenges. In *Quality Assurance of Vocational Education and Training*; European Training Foundation: Turin, Italy, 2014; pp. 5–16.
53. Nikolovska, M. The Quality Approach in Vocation Education and Training in South-Eastern Europe and Turkey: Building the Torino Process Findings. In *Quality Assurance of Vocational Education and Training*; European Training Foundation: Turin, Italy, 2014; pp. 35–46.
54. Taraza, E.; Anastasiadou, S. EFQM Excellence Model in Vocational Lyceum: Reliability and Validity of EFQM Instrument. In *Proceedings of the 13th International Technology, Education and Development Conference, INTED2019 Proceedings*, Valencia, Spain, 11–13 March 2019; Chova, L.G., Martínez, A.L., Torres, I.C., Eds.; IATED: Valencia, Spain, 2019; pp. 2273–2285.
55. Inner City Fund International. *EQAVET PLA: 'Quality Assurance in Continuing Vocational Education and Training': Flash Report*; ICF: Brussels, Belgium, 2021; pp. 1–4.
56. Theocharous, A. *Management Quality Systems: The European Quality Assurance in VET: Study Case of Cyprus Initial VET*. Ph.D. Dissertation, European University Cyprus, Nicosia, Cyprus, 2019.