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# European Foundation for Quality Management: A Systematic Review

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# EUROPEAN FOUNDATION FOR QUALITY MANAGEMENT: A SYSTEMATIC REVIEW

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**Abstract.** *The European Foundation for Quality Management (EFQM) excellence model, designed for the first time at the beginning of the Nineties and formalized in 2013, was recently updated in the new version of 2020. Although the foundations of the model remained unchanged, relevant modifications in the model's framework are destined to impact the future empirical and theoretical debate. Therefore, there is a need for review work that can represent reference points for future development of the topic. In this paper, we present a systematic literature review concerning the works published in the top journal of the ABS list on the EFQM excellence model. In particular, we focused on theoretical and empirical articles, giving a descriptive and thematic picture of the literature, and reflecting on the future research opportunities.*

**Keywords:** EFQM, European Foundation for Quality Management, European Quality Award; European Excellence Award, European Excellence Model; Systematic Literature Review, Grounded theory, Grounded approach, Grounded Analysis.

## 1 Introduction

In all organizations, there is tension towards excellence. Some of them result from a permanent and lasting effort, while for others, the commitment and the results are only temporary. Sometimes the efforts are not sufficient to achieve the purpose. Organizations' excellence is the “set of principles and approaches that produce the best overall results and support a sustainable future for organizations” (Escrib & de Menezes, 2016). It is firmly dependent on their ability to identify the strengths and weaknesses of their processes, enhancing the former and improving the latter (Liu et al., 2021). Moreover, the growing concerns of customers about the quality of their purchase choices have been increasing firms' research, development, and investment in Total Quality Management, which is a holistic perspective of the performance formation process and systematic quality improvement that can be defined as “integrative management philosophy that aims for continuous improvement in the quality of products and services within an organization” (Schoten et al., 2015: 902).

To achieve the best and most sustainable performance, firms often use frameworks and models to assess their management processes since identifying critical performance elements is one of the most complicated issues, especially for small and medium enterprises (Liu et al., 2021). The European Foundation of Quality Management (EFQM) excellence model (2013) and the EFQM model (2020) are two of the most employed tools for the self-assessment concerning the organizational success. Achieving and maintaining sustainable excellence is a goal of the EFQM foundation established to recognize and promote success and guide organizations toward that goal.

“Excellence means to focus every action on its objectives in a sustainable way, with and for its stakeholders, and giving value to every resource” (EFQM, 2021) through the constant involvement and commitment of all organization members. The EFQM model represents an answer to this challenge through a holistic observation perspective. In particular, “the strategic nature of the EFQM model, combined with its focus on operational performance and focus on results, makes it the ideal framework for verifying the consistency and alignment of an organization’s ambitions for the future, concerning its current ways of working and its responses to challenges and criticalities” (EFQM, 2019).

The model allows firms to self-assess, evaluate the total quality of their processes, and participate in the European Quality Award, the prize assigned by the Foundation to the best firms in terms of performance achieved in the three key sections of the EFQM excellence model, i.e., direction, results, and execution.

In general, the EFQM excellence framework is considered the foundation for effective management of quality systems since it improves the implementation of strategies and the firms’ impact on stakeholders (e.g., Calvo-Mora et al., 2014a). The model “sets up a structured and systematic ordering of the critical factors for the functioning of the whole organization” (Calvo-Mora et al., 2014a:134). Its enablers and results allow firms to identify critical factors that demonstrate synergies and connections for their success. Therefore, both the model and critical elements for excellence affect organizations only if they are not considered isolated components.

The EFQM model finds growing acceptance and diffusion among organizations in its evolutions, constituting a reference for improvement, innovation, and sustainable development. Research has also grown over time, offering a perspective of observation of the model in its evolutions, application forms, and different contexts. The considerable relevance of the EFQM excellence model is demonstrated through its use as synonymous with Total Quality Management (Liu et al., 2021), and it is considered a substantial precondition for obtaining the certification ISO 9001 (Eriksson et al., 2016), although some evidence found EFQM to be more advanced compared to the ISO 9001 in the impact in the employment of flexible work practices (Bayo-Moriones et al., 2011). In fact, despite EFQM is often criticized for its excessive general levels of analysis, there is a consensus in the literature on the advantages originated by the employment of the model for a considerable number of elements connected to the firms’ performance, e.g., implementation of strategies (e.g., Benavent & Canet-Giner, 2011) and increasing of stakeholders considered and the impact of related capital (Magnaghi, 2017). Moreover, the employment of EFQM showed a relevant practice for enhancing

the firms' ability to adapt their processes to dynamic and changing environments (Fonseca, 2021). In fact, this aspect was criticized in the previous version of the model (Benavent & Canet-Giner, 2011), while in the 2020 version, this limitation seems to be overcome (Fonseca, 2021). Therefore, evidence demonstrates a direct relationship between the use of EFQM and firms' performance.

Several attempts were performed to review the literature on the EFQM excellence model. In particular, the articles focused on the empirical literature (e.g., Suárez et al., 2017) or on a specific sector like higher education (Laurett and Mendes, 2019). Nevertheless, we found a lack in these works because of the exclusion of theoretical papers. Although the number of articles is imbalanced, since empirical papers are more numerous concerning theoretical, we argue that the scientific discussion on the conceptual basis and the possible expansions on the model are equally relevant for the future development of the topic. Therefore, we chose to perform a systematic literature review to include the results of theoretical and empirical papers in the discussion.

The paper is structured as follows. In the following paragraph, we describe the EFQM excellence framework, highlighting its fundamentals and development over time. In the third paragraph, we gather the previous literature reviews, describing the researcher's results so far. The fourth paragraph is devoted to a detailed description of the methodology. Then, we show the descriptive and content analysis of the selected papers. Finally, we present a brief discussion of our findings and some suggestions for further development.

## 2 The EFQM model

The EFQM excellence model has always been a reference for developing the culture of improvement and innovation for European and extra European organizations. Although the model has experienced many evolutions through the years, it remains a framework with a global relevance for change management and for the improvement of performance in all organizations that strive for a sustainable future in the long run (EFQM, 2019). The EFQM, at its foundation in 1990, differentiated from the Baldrige Excellence Framework (Malcolm Baldrige Award) just for the number of criteria – nine instead of seven – which were only partially dissimilar. In 1991, in its definitive formulation, the EFQM excellence model showed substantial novelties, which also impacted the next evolution of the America model.

The aim of the model could be summarized in Deming's words: "excellence is not mandatory. However, it is a certain moral duty of every manager to do everything to ensure their company's survival, made more and more problematic by the constant change in competitive scenarios. You have to do something, but before you do, stop for a moment and try to understand what alternatives you have in front of you and what your real possibilities are. Then take action. Without a conscious quality strategy and the determination to pursue it, your company's survival is certainly at stake." (Conti, 2004).

After nearly 20 years, the EFQM excellence model updated the European model for excellence (EFQM, 2012; Oakland, 2014; Kanji, 2015), that in 2013 was presented as

a holistic model that is adequate to the new competitive challenges for all organizations (independently on the sector, dimensions, and maturity) that deal with their path toward the excellence in a global, evolving, and demanding market.

The model has three critical aspects: the fundamental concepts of excellence, the EFQM model for excellence, and the RADAR logic. The fundamental concepts of excellence represent the foundation organizations need for their profitable commitment toward sustainable excellence. Such concepts represent the foundation for the EFQM excellence model. They are applied in all the organizations, are correlated for the criteria and sub-criteria, and are mutually influenced. The EFQM excellence model represents a "reference framework" able to support organizations in the concrete application of fundamental concepts of RADAR logic. The RADAR logic represents a critical managerial instrument and a dynamic reference for the evaluation. In particular, the RADAR logic allows computing the maturity level (overall organization excellence) and orienting the improvement. The model allows the evaluation (through a scoring system) of the organizational situation of a firm and the corrective actions adopted for achieving excellent performances.

The nine criteria are divided into enablers (leadership, strategies, personnel, partnership and resources, processes, products, and services) and results (personnel, clients, society, and performance). They respectively allow evaluating the impact on the organizational and managerial leverages and the results achieved by organizations.

Considering such aspects in an integrated way allows organizations to undertake a profitable path toward a culture of quality and excellence, making more coherent their management style and fostering innovation and performance improvement. The changes in the EFQM model are still not settled, and in the new version of 2020, modifications have been substantial, although the elements that represent the basis for an effective managerial development have been confirmed and enhanced. In particular, the landmark is the attention of customers, the stakeholders-oriented long-run vision, and the continuum improvement guided by cause-effect relationships (i.e., the motivation for an organization to do something, how to do it, and what it obtains as a consequence of its actions) (EFQM, 2019).

Although the evolutions of the models changed their graphic representation and contents, their fundamental principles remained stable. The word "excellence" (Fonseca, 2021) is no longer explicitly stated, and it has been replaced by the word "outstanding" (i.e., "the best it can be"). The relevant aspects of the model are represented by (AICQ, 2021):

- the importance of the ecosystem in which organizations operate, within developing collaborations for value creation;
- a different leadership style, less hierarchical and more collaborative, aimed at developing creativity and innovation;
- the enhancement of diversity;
- the simultaneous management of change and daily operations;
- an open mind to creativity, innovation, and disruptive thinking;
- the identification and agile response to the opportunities and threats inherent in the ecosystem with a constant orientation to the future.

Moreover, three pillars should support effective managerial management (Mulè, 2020):

- direction (why). The precise direction of the organization (i.e., the link between the organization's purpose and strategy), supported by a culture capable of stimulating innovation and whose focus is the creation of value;
- execution (how). An implementation that involves key stakeholders (for the creation of sustainable value through performance management);
- results (what). The results achieved by the organization (stakeholder perception, strategic and operational performance).

Figure 1 shows the EFQM excellence model logic that answers three critical questions (EFQM, 2019): "Why" does this organization exist? What purpose does it fulfill? Why this particular Strategy" (Direction); "How" does it intend to deliver on its Purpose and its Strategy" (Execution); "What" has it achieved to date? "What" does it intend to achieve tomorrow" (Results).



**Fig. 1.** *EFQM excellence model*

Logical connections exist between these parts (Figure 1), making the model simple and easy to understand and apply. The model is today less prescriptive compared to the previous version. It includes seven criteria under the three dimensions, supported by 23 criteria parts, two results criteria, 112 guidance points, and the RADAR assessment tool (Fonseca, 2021). Therefore, the model pass from nine to seven criteria, from 32 to 25 sub-criteria. Compared to such criteria, the concepts of change, agility, and long-term vision are emphasized. The diagnostic tool of the model (i.e., RADAR) remained unchanged, and it is focused on Deming's Plan-Do-Check-Act logic. Some researchers (Narasimha Murthy et al., 2021) highlighted how the EFQM model moves toward a generic model. The focus is not simply on an excellence model of firm excellence or an instrument for achieving the quality award but is focused on the futuristic requisites

of the organizations. The new model has passed from a simple assessment instrument to an instrument that offers a critical framework and a methodology for helping individuals and organizations succeed in challenging changes and disruptive solicitations in the context of operations.

### **3 Previous reviews and conceptual papers**

We found several attempts to perform literature reviews and conceptual papers on the employment of the EFQM excellence model. In particular, they can be grouped into three categories: some papers try to gather and analyze papers from a generic viewpoint; others attempt to review specific aspects and aims of the EFQM; finally, a group of papers considers the effect of the application of EFQM in specific fields.

A remarkable literature review published by Fonseca (2021) tried to identify the EFQM 2020 theoretical foundation and synthesize the most significant change made from the previous version of the EFQM (2013). The research identified the ability of the new framework (EFQM 2020) to embed two critical aspects of excellence: the ability of firms to recognize and implement the excellence principles in the long term and the capabilities of firms to adapt to dynamic and changing environments. According to the authors, the new EFQM excellence model represents a bigger group of stakeholders, including academics and businesses. Its ability to connect purpose and strategy makes this instrument an excellent framework for achieving sustainable value and considering dynamic changes and transformations. Nevertheless, the research highlighted its general nature as a limitation to be overcome through the practical design of specific layers.

A literature review on the quantitative research performed on the EFQM excellence model from 1991 to 2015 was published by Suárez et al. (2017), who highlighted three main results. First, they found that EFQM ensures good quality and adaptability in its predictive power. Second, the agent criteria were perceived by firms as the most important among the criteria included in the model. In fact, firms with high scores in these criteria obtained higher results. Third, significant research tries to expand the model, increasing the number of dimensions and giving more importance to clients, markets, strategies, alliances, and resources. In general, there is evidence of a direct relationship between firms' performance and their employment of EFQM. Implementing the model improves firms' image, commitment, and customer and employee satisfaction. Yousaf and Bris (2020) performed a similar systematic literature review. They found that a considerable number of publications were focused on Spanish environments. Moreover, they highlighted that the most common sectors in which EFQM was considered for the research were education and health.

Previous literature reviews and conceptual papers often concentrate on specific aspects of the EFQM excellence model. For example, Benavent and Canet-Giner (2011) performed an in-depth analysis of the strategy formation process in the framework. Their work highlighted the consensus in the scientific debate about the ability of EFQM in the implementation process of strategies, especially from an integrative perspective. Nevertheless, questions arose on the model's effectiveness from a dynamic viewpoint. In fact, the research emphasized the existence of possible issues related to the ability of

the model to allow firms to answer to the environmental changes rapidly. In particular, the fact that firms decide their objectives and vision before applying the model seems to limit its effectiveness in challenging dynamic changes.

Other research tried to evaluate the usefulness of EFQM with specific aims. For example, Trébuc and Magnaghi (2017) considered the EFQM excellence model for integrated reporting using elaborative coding. In particular, the article highlighted the positive effects of using EFQM in evaluating several typologies of intangibles and the connections among them within organizations. Moreover, the research emphasizes the role of capital inputs and outputs in relations among stakeholders, the process related to the management activities, and the dependence on non-human resources.

Some research was performed to understand the existing parallelism between many different concepts. For example, the extensive literature review published by Tari and Molina-Azorin (2010) tried to conceptualize the EFQM as a possible bridge between quality management and environmental management. In particular, they found a possible integration between the two frameworks in the dimensions of leadership, strategy, people, partnership and resources, and processes. The EFQM framework could help reduce costs, increase differentiation, and create competitive advantages, achieving a considerable impact on firms' performance.

Another example is the literature review performed by Bolboli and Reiche (2015), in which they attempt to show the relations between RADAR logic and the EFQM excellence model to achieve a new conceptualization of efficient design. The final result was a new approach for designing excellence measures composed of three steps: (1) employment of RADAR logic for deriving measures from EFQM; (2) assessing the prevailing organizational culture and selecting its correct measures; and (3) assessing the maturity level of an organization and selecting its correct measures.

Laurett and Mendes (2019) performed a systematic literature review to understand the use of EFQM in higher education. The analysis of 25 articles published on the theme highlighted that the excellence model's employment could result in numerous benefits, including higher customer focus, higher staff involvement and commitment, and cultural shift. Moreover, they identified some critical factors that managers should consider to overcome barriers to the sustainable implementation of the excellence model, e.g., motivation and commitment of top management and staff training and development.

In summary, literature reviews and conceptual papers published for achieving an overall comprehension of the use of EFQM were focused on specific aspects of the model and specific sectors and fields, or they were limited to the empirical analyses performed in the past. Therefore, we chose to perform our review, including conceptual and empirical papers published in the top journal of the ABS list. In the following section, we show the methodology applied for our analysis.

## 4 Methodology

We chose to perform a systematic literature review to achieve the highest objectivity in our analysis. In particular, this method ensures a comprehensive limitation in the biases

of the study during the process of selecting the articles (Denyer & Tranfield 2009; Post et al. 2020). Moreover, we decided to apply the protocol suggested by Wolfswinkel et al. (2013), who included the concept of grounded theory for the contents analysis of the selected articles.

To the best of our knowledge, the application of this protocol has not been included in research devoted to the review of the literature on EFQM and related subjects. Applying grounded theory concepts allowed us to start the contents analysis without any prejudice and background (Corbin & Strauss, 1990; Strauss & Corbin, 1997).

The protocol suggested by Wolfswinkel et al. (2013) involves five steps (Figure 2), from the definition of the research to the presentation of results. We used the SCOPUS database to extract the relevant articles for our analysis. We employed the following formula for the first search: TITLE-ABS-KEY("European Foundation for Quality Management" OR EFQM), obtaining 1000 results. Following Vrontis and Christofi (2019), we limited our results to the articles written in English and published in peer-reviewed journals. After that, we performed a further limitation on the journals published in the ABS list and ranked 3, 4, and 4\*. The sample of articles resulting from these limitations was 25. Finally, we eliminated one false positive and obtained a final sample of 24 articles. Table 1 shows the bibliographical data of the selected articles. In particular, we attributed a univocal identification (ID) to make interpreting the following tables easier.

**Table 1.** Bibliographical data of the extracted articles

ID	Authors	Title	Year	Journal
1	Liu Y.-L., Pen-Fa K., Chiang J.-T., Shyr W.-J.	Should the EFQM Excellence Model be Adapted for Specific Industries? A Restaurant Sector Example	2021	International Journal of Hospitality Management
2	Paraschi E.P., Georgopoulos A., Kaldis P.	Airport Business Excellence Model: A holistic performance management system	2019	Tourism Management
3	van Schoten S., de Blok C., Spreeuwenberg P., Groenewegen P., Wagener C.	The EFQM Model as a framework for total quality management in healthcare: Results of a longitudinal quantitative study	2016	International Journal of Operations and Production Management
4	Escrig A.B., de Menezes L.M.	What is the effect of size on the use of the EFQM excellence model?	2016	International Journal of Operations and Production Management
5	Eriksson H., Gremyr I., Bergquist B., Garvare R., Fundin A., Wiklund H., Wester M., Sörqvist L.	Exploring quality challenges and the validity of excellence models	2016	International Journal of Operations and Production Management
6	Suarez E., Calvo-Mora A., Roldán J.L.	The role of strategic planning in excellence management systems	2016	European Journal of Operational Research
7	Escrig A.B., De Menezes L.M.	What characterizes leading companies within business excellence models? An analysis of "eFQM Recognized for Excellence" recipients in Spain	2015	International Journal of Production Economics
8	Calvo-Mora A., Picón-Berjoto A., Ruiz-Moreno C., Cauzo-Bottala L.	Contextual and mediation analysis between TQM critical factors and organisational results in the EFQM Excellence Model framework	2015	International Journal of Production Research

9	Calvo-Mora A., Ruiz-Moreno C., Picón-Berjoto A., Cauzo-Bottala L.	Mediation effect of TQM technical factors in excellence management systems	2014	Journal of Business Research
10	Calvo-Mora A., Picón A., Ruiz C., Cauzo L.	The relationships between soft-hard TQM factors and key business results	2014	International Journal of Operations and Production Management
11	Tari J.J., Madeleine C.	Preparing Jordanian University services to implement a quality Self-Assessment methodology	2011	International Review of Administrative Sciences
12	Bayo-Moriones A., Merino-Díaz-De-Cerio J., Antonio Escamilla-De-León S., Mary Selvam R.	The impact of ISO 9000 and EFQM on the use of flexible work practices	2011	International Journal of Production Economics
13	Kim D.Y., Kumar V., Kumar U.	Performance assessment framework for supply chain partnership	2010	Supply Chain Management: An International Journal
14	Bou-Lluisar J.C., Escrig-Tena A.B., Roca-Puig V., Beltrán-Martín I.	An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model	2009	Journal of Operations Management
15	Barad M., Dror S.	Strategy maps as improvement paths of enterprises	2008	International Journal of Production Research
16	Tari J.J.	Self-assessment exercises: A comparison between a private sector organisation and higher education institutions	2008	International Journal of Production Economics
17	Soltani E., Van Meer R.D., Williams T.M.	A contrast of HRM and TQM approaches to performance management: Some evidence	2005	British Journal of Management
18	Mackerron G.C., Masson R., Meglynn M.	Self assessment: Use at operational level to promote continuous improvement	2003	Production Planning and Control
19	Johnston R., Brignall S., Fitzgerald L.	Good enough performance measurement: A trade-off between activity and action	2002	Journal of the Operational Research Society
20	Yang J.B., Dale B.G., Siow C.H.R.	Self-assessment of excellence: An application of the evidential reasoning approach	2001	International Journal of Production Research
21	Herk R.V., Klazinga N.S., Schepers R.M.J., Casparie A.F.	Medical audit: Threat or opportunity for the medical profession. A comparative study of medical audit among medical specialists in general hospitals in the Netherlands and England, 1970-1999	2001	Social Science and Medicine
22	Go F.M., Govers R.	Integrated quality management for tourist destinations: A European perspective on achieving competitiveness	2000	Tourism Management
23	Wilkinson G., Dale B.G.	Models of management system standards: A review of the integration issues	1999	International Journal of Management Reviews
24	Camisón C.	Total quality management in hospitality: An application of the EFQM model	1996	Tourism Management

The most relevant innovation of Wolfswinkel et al. (2013) is the employment of grounded analysis for extracting themes and subthemes from the selected papers. In particular, the protocol consists of open, axial, and selective coding. Open coding is the first step of the analysis. It allows to identify and order the first relevant data, abandon prejudice and preconceived notions, and ensure that the following analysis steps lead to relevant results. With the axial coding, we looked for connections among codes identified in the previous steps of the analysis. In doing that, codes are organized into distinct categories that can include one or more codes. Therefore, in this part, themes and

subthemes emerged from the analysis. Finally, with selective coding, different categories are organized under one or more superordinate structures, which allow researchers to define a unified theory based on the evolution of the related categories.

Given the evidence included in the extracted sample, we divided our analysis into two main parts: a descriptive and content analysis. Table 2 and Table 3 include all the relevant data we extracted from the selected papers to perform these analyses.

## 5 Descriptive analysis

This section provides the results of the descriptive analysis of the selected articles. The objective is to build a descriptive framework for understanding the years in which top journals showed more interest in the topic and to capture the international nature of the scientific debate. For this reason, the section includes the number and typology of papers, the authors' productivity, and their provenience and international collaborations.

**Table 2.** Bibliographical data of the selected paper – Part A

ID	Number of authors	Authors' provenience	ABS field	Ranking ABS	Paper typology
1	4	Taiwan	SECTOR	3	E
2	3	Greece	SECTOR	4	E
3	5	Netherlands	OPS&TECH	4	E
4	2	Spain UK	OPS&TECH	4	E
5	8	Sweden	OPS&TECH	4	E
6	3	Spain	OR&MANSCI	4	E
7	2	Spain UK	OPS&TECH	3	E
8	4	Spain	OPS&TECH	3	E
9	4	Spain	ETHICS-CSR-MAN	3	E
10	4	Spain	OPS&TECH	4	E
11	2	Spain	PUB SEC	3	E
12	4	Spain	OPS&TECH	3	E
13	3	USA Canada Canada	OPS&TECH	3	T
14	4	Spain	OPS&TECH	4*	E
15	2	Israel	OPS&TECH	3	E
16	1	Spain	OPS&TECH	3	E
17	3	UK	ETHICS-CSR-MAN	4	E
18	3	UK	OPS&TECH	3	T
19	3	UK	OR&MANSCI	3	E
20	3	UK	OPS&TECH	3	T
21	4	Belgium	SOC SCI	4	LR
22	2	Netherlands	SECTOR	4	E
23	2	UK USA	ETHICS-CSR-MAN	3	LR
24	1	Spain	SECTOR	4	E

**Table 3.** Bibliographical data of the selected paper – Part B

ID	Methods	Sampling numerosity	Statistical units typology	Statistical units provenience
1	Multi-method approach: five-step model development procedure 1) Selection of experts 2) Design of the questionnaire 3) Examination of intergroup consistency 4) Examination of interexpert reliability 5) Attribute and sub-attribute weighting	18 experts divided into three sub-groups 1) 6 top managers 2) 6 academics 3) 6 customers	Top managers Academics Restaurant customer	Taiwan
2	Airport Business Excellence Model (ABEM) Survey	143	Senior airport executives	World
3	Survey	398	Hospital population	Netherlands
4	Analysis of variance, factor and structural equations models. Nine criteria and 32 sub-criteria.  Two-stage procedure was undertaken to assess the potential effect of the size: 1) $\chi^2$ tests of independence 2) $\chi^2$ tests and parameters' standard errors	216	Organizations (The majority are schools, universities, healthcare, non-profit and public administration)	Spain
5	Pilot: Delphi (Questionnaire) Study: Delphi (Questionnaire)	Pilot: 12 Study: 188	Pilot: researchers Study: Experts representing private sector (111) and public sectors (77)	Sweden
6	Scores: RADAR logic Analysis: Variance-based structural equation modelling	225	Organizations	Spain
7	3-stages analysis: 1) analysis of statistical distribution and correlations 2) measuring the level of excellence (5-star VS non 5-star) 3) regression model	216	Organizations	Spain
8	Scores: RADAR logic Analysis: Variance-based structural equation modelling	284	Private organizations	Spain
9	Scores: RADAR logic Analysis: Variance-based structural equation modelling	116	Private organizations	Spain
10	Scores: RADAR logic Factorial analysis and structural equations (partial least squares)	116	Private organizations	Spain
11	Case study (interviews, direct observation, organization documents)	8	Administrative services provided by a public university	Spain
12	Survey	665	General managers	Spain
14	Survey	446	CEOs Quality managers	Spain
15	Quality Function Deployment	First case: 3 Second case: 3	First case: managers Second case: managers	Israel

16	Case study (questionnaires, interviews, surveys, direct observation, organization documents and feedback from one private SME and five administrative services in HEIs)	6	Private organizations	Spain
17	Two methods 1) questionnaire survey 2) semi-structured interview survey	10	Senior TQM or HRM specialists	Scotland
19	Interpretative, grounded theory approach based on case studies	6	Organizations	UK
22	Case study (interviews; Content analysis of documents)	8	European urban as well as coastal tourist destinations involved in quality management	Netherlands (2) Belgium (1) Ireland (1) UK (4)
24	Two 'partially independent' empirical investigations 1) Questionnaire for the management of the business 2) Questionnaire for the external customers of the said hotels	38 (hotels) 250 (customers)	Hotel managers Hotel customers	Spain

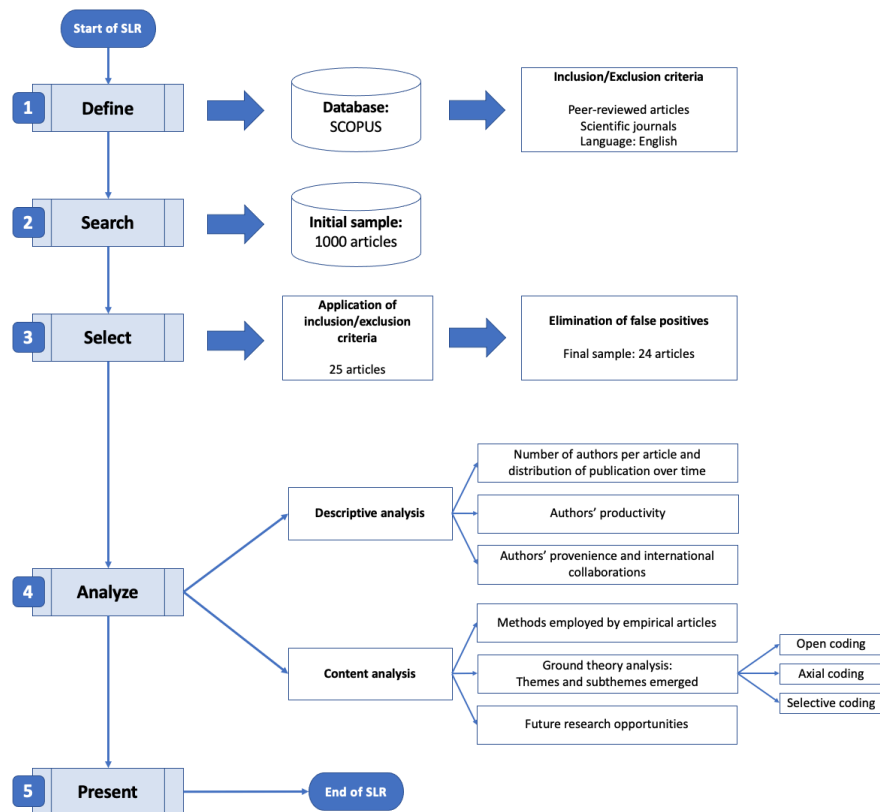


Fig. 2. Wolfswinkel et al.'s (2013) protocol employed in our SLR

### 5.1 Number of authors per article, distribution and typology of publications over time

Figures 3 and 4 represent the number of authors per document and the number of papers per year. Most of the articles were written by 2, 3, or 4 authors. In particular, six articles (25%) were published by two authors, and seven articles (29.17%) by three and four authors.

Moreover, five articles were empirical, and 19 were theoretical. Specifically, among the five theoretical articles, we found two reviews and three conceptual papers. Finally, remarkable is the presence of one article resulting from the collaboration of eight Swedish authors (Eriksson et al., 2016) who used the Delphi method for discussing the quality and validity of excellence models.

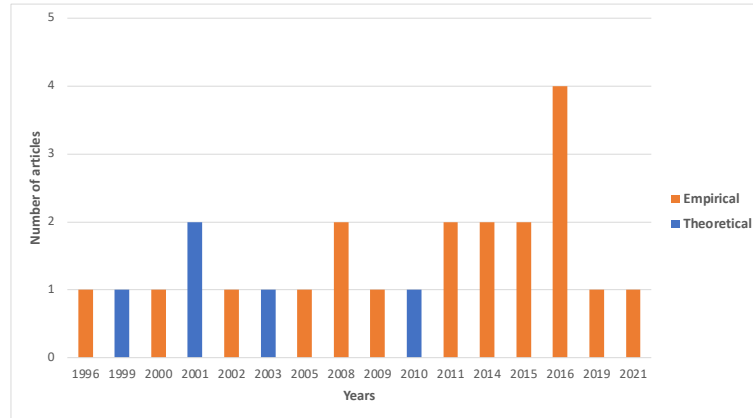
The articles are well-distributed over the time range 1996-2021. We found two articles before 2000, seven articles between 2001 and 2009, and 7 articles between 2010 and 2021. There was a single peak during 2016, in which four articles were published (16.67%).

### 5.2 Authors' productivity

The dataset was composed of 24 papers written by 62 authors. Most of the writers contributed to the sample with one paper. Nevertheless, some authors published more articles. In particular, Arturo Calvo-Mora, from Spain, published four empirical articles that employed similar methodology approaches (RADAR logic and variance-based structural equation modeling) to analyze the role of total quality management critical factors in the context of EFQM (e.g., Calvo-Mora et al., 2014a; 2015). From Spain, Araceli Picón-Berjoyo and Lourdes Cauzo-Bottala collaborated on three of those four papers.

Juan José Tarí published two case studies (Tarí, 2008; Tarí & Madeleine, 2011) involving the analysis of self-assessment in higher education institutions. Ana B. Escrig, from Spain, and Liliand de Menezes, from the United Kingdom, published two articles in the dataset (Escrig & de Menezes, 2015; 2016) focused on the characteristics that affect firms in their research of excellence. Moreover, Ana B. Escrig-Tena published another paper (Bou-Llusar et al., 2009) empirically testing the EFQM framework through a survey.

Barrie Dale published one review (Wilkinson & Dale, 1999) on the overcoming of limitations related to the standard models of management systems standards allowed by the integration of EFQM and one conceptual paper (Yang et al., 2001) on the self-assessment process employing evidential reasoning approach and multiple attribute decision-making.



**Fig. 3.** Number of authors per article

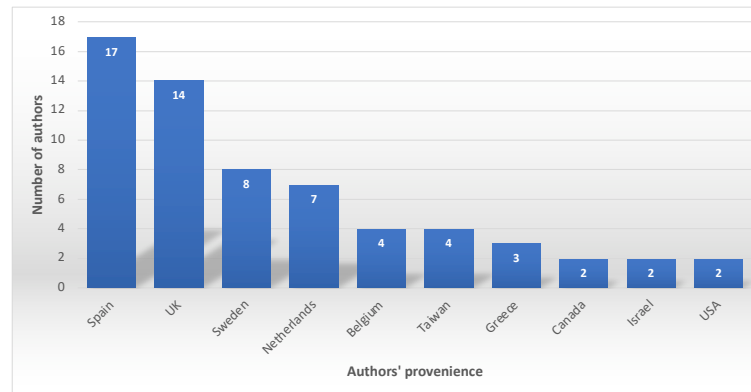


**Fig. 4.** Number of articles per year

### 5.3 Authors' provenience and international collaborations

Figure 5 shows the authors' provenience. The number of authors is 63 because, in one case, a double affiliation was identified. Most of the contributors come from European Countries (53 on 63, 84.13%), especially from Spain (17, 26.98%) and the UK (14, 22.22%). Nort-American Countries contributed with four papers (6.35%), while Asian Countries published six articles (9.52%).

A relevant feature of the sample is the collaboration rate, computed as the ratio between multiple Country papers and single Country papers. In fact, only three articles were written by researchers from different countries, and the international collaboration ratio was 14.29%. Therefore, international collaboration is not common in this field.



**Fig. 5.** Authors' provenience

## 6 Content analysis

This paragraph presents the content analysis of the selected papers in three steps. In particular, the section is ordered for helping researcher understanding the typology of instruments used for discussing the most frequent themes emerged in the literature. First, we show the different methods that have been employed to test hypotheses in empirical papers, the typology of statistical units involved in the analysis, and their provenience. Second, we present the result of our grounded analysis, i.e., themes that emerged from the scientific debate. Third, we list the future research suggestions proposed by selected articles' authors.

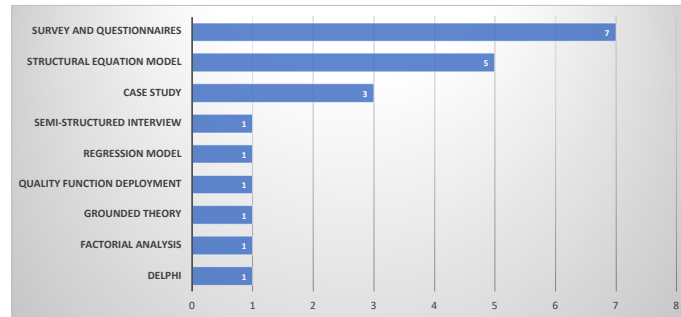
### 6.1 Methods employed, statistical units typology and provenience

Figure 6 shows the different methodologies employed by the empirical articles in our dataset. Although there were 19 empirical papers, several articles employed more than one method. For example, Calvo-Mora et al. (2014) employed RADAR logic, factorial analysis, and structural equations (partial least squares) to answer their research questions. Therefore, the total number of methods displayed in the graph is greater than the number of empirical papers. The most used methods are the surveys and questionnaires employed by seven articles (36.84%). The second position is occupied by the variance-based structural equation modeling, employed by five articles in the dataset (15.79%).

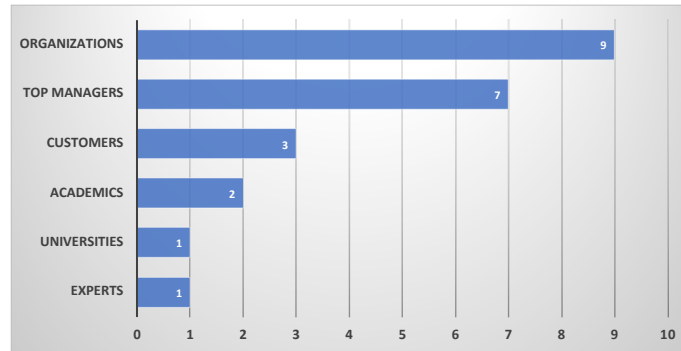
Figures 7 and 8 show the typologies and origins of statistical units considered in the selected articles. Organizations are the most employed statistical units (64.28%) and are mostly considered in quantitative articles debating the role of specific characteristics in measuring system excellence (e.g., Calvo-Mora et al., 2015). Nevertheless, they are also considered in case studies that investigate self-assessment in universities. (e.g., Tari & Madeleine, 2011).

Top managers and executives are frequently used as statistical units to understand the effect of excellence models like EFQM within specific firms, e.g., restaurants (Liu et al., 2021) or airports (Paraschi et al., 2019). Customers are also employed in the

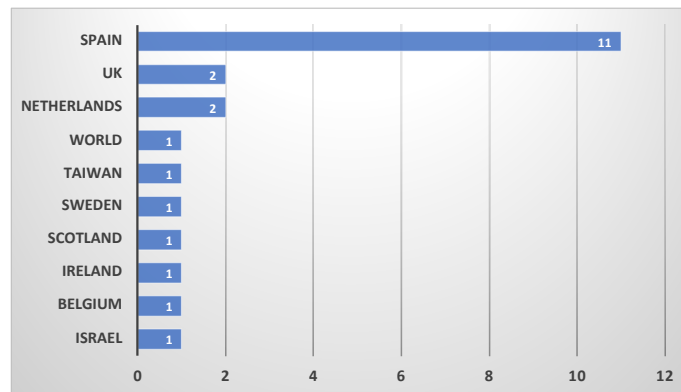
sample to test the EFQM excellence model's adaptation to specific industries, e.g., hospitality (Camisón, 1996).



**Fig. 6.** Methods employed in the selected papers



**Fig. 7.** Typology of statistical unit considered in the selected articles



**Fig. 8.** Statistical units provenience

## 6.2 Themes emerged in the selected articles

This paragraph presents the thematic analysis results performed through the grounded approach explained in the methodological section. The analyzed literature demonstrates the efficiency and limitations of EFQM Excellence Framework. For improving the readability of results, figure 9 shows a conceptual map developed according to Gioia (2004).

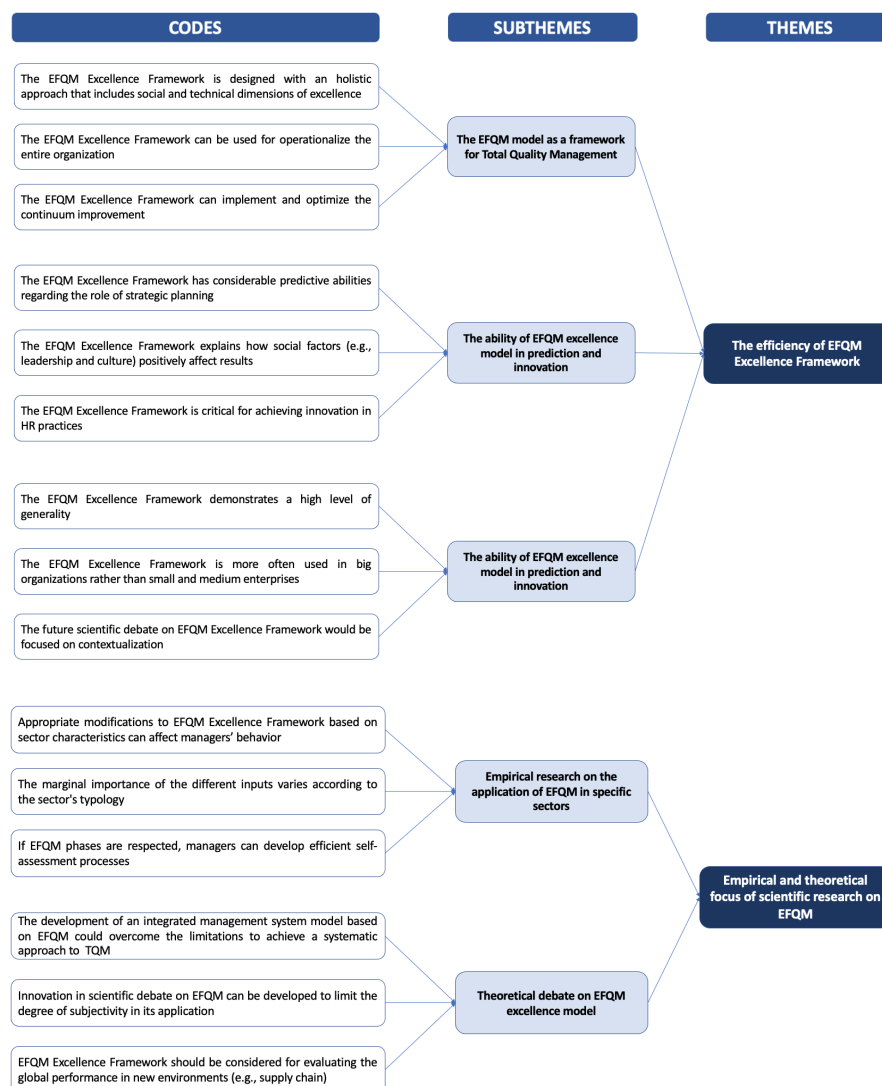


Fig. 9. Conceptual map of codes, subthemes, and themes

*Theme 1: The efficiency of EFQM Excellence Framework*

*Subtheme 1: The EFQM model as a framework for Total Quality Management*

There is a broad consensus that the EFQM excellence model should be considered a framework for Total Quality Management. In general, the model can catch the holistic nature of Total Quality Management, stimulating the continuum improvement in the processes and ensuring the exploitation of the connections between the social and technical dimensions needed for achieving sustainable performance.

Bou-Llusar et al. (2009) analyzed the model in-depth, verifying three prerequisites they suggested for a framework for Total Quality Management: social and technical dimensions, their related interrelations, and their influences on the results. Their analyses suggested that already at the time, the model was able to consider both the social and technical dimensions. Moreover, the model's holistic approach, together with the influences of the two dimensions on the results, were confirmed in their empirical study.

Calvo-Mora et al. (2014a) confirmed this vision, demonstrating that the EFQM excellence model was able to systematically order the critical factors for the success of the organizations. In particular, they highlighted the holistic nature of the model since the impact of all its elements should be considered to operationalize the entire organization and achieve a successful performance level. Therefore, the Total Quality Management logic was perfectly respected by the EFQM excellence model because its application can implement and optimize the connections and the interrelations among the critical elements of the continuum improvement.

Such reflections on the nature of EFQM have also been considered in specific sectors. For example, van Schoten et al. (2016) evaluated the opportunity of interpreting EFQM as a framework for Total Quality Management in the health sector. Besides having confirmed their research questions, they found a further validation in the effects of the lower results in the scores obtained by firms in the results criteria of the model. Lower scores stimulated the organizations to improve their processes, ensuring a continuum improvement of their performance.

*Subtheme 2: The ability of EFQM excellence model in prediction and innovation*

The advantages of EFQM have also been demonstrated concerning its predictive abilities (e.g., Calvo-Mora et al., 2014c; Calvo-Mora et al., 2014a), especially regarding the role of strategic planning, which is a mediator for efficient resource management, effective relationships with partners and suppliers (Calvo-Mora et al., 2014a; Suarez et al., 2016). In fact, firms that obtain better scores in strategic planning, according to the directive of EFQM, demonstrate higher ability in managing processes, resources, and alliances. Moreover, empirical evidence showed that EFQM is predictive of how social factors like leadership, flexible culture, and human resources, positively affect the results. Therefore, specific cultural values like continuum improvement and orientation

toward the stakeholders are critical for developing practical abilities in resources management (Calvo-Mora et al., 2014c). Moreover, the management and employees' commitment to implementing the logic of continuous improvement is equally critical for the success of quality management (Calvo-Mora et al., 2014a; Tari & Madeleine, 2011).

Firms that employ the EFQM model achieve excellent results in implementing flexible work practices, demonstrating that an excellence model is an advanced tool for implementing innovation in HR management (Bayo-Moriones et al., 2011).

### *Subtheme 3: The problem of EFQM's generality*

The EFQM is a general excellence model that does not differentiate between Total Quality Management social and technical factors (Calvo-Mora et al., 2014a). Unfortunately, one of the most common critiques made of the framework of EFQM is based on its high level of generality. Despite there is evidence demonstrating that some parts of the EFQM can be used independently on the characteristics of the firms or sector (e.g., Escrig & de Menezes, 2016), there are evidence of more practical use in big organizations rather than small and medium enterprises (Calvo-Mora et al., 2014a). Therefore, many studies state that if the model is applied without adjustments based on its employed sector, its results can be questionable.

For example, evidence has emerged in a work published by Liu et al. (2021) considering restaurants. In fact, results that emerged from the application of EFQM showed the need to generate a new model, adapting the excellence framework to the specific characteristics of the sector.

Escrig and de Menezes (2016) analyzed the possibility of contextualizing the EFQM excellence model, studying the effects of size on its results. They clarified that some aspects of the EFQM are used by firms regardless of their size. In fact, such elements are common preconditions of quality management, like good leadership, strategy, and communication, that are fundamental for problem-solving and workgroup performance (Bayo-Moriones et al., 2011). The size effect was found in practices like rewards, partnership management, resources management, and commercialization and customization of products. In general, firms' size showed to be a moderator of the association between enablers and results (Escrig & de Menezes, 2016).

Nevertheless, the problem of the contextualization needed in employing the EFQM excellence model is not considered critical for future organizational challenges by all the researchers debating this topic. Eriksson et al. (2016) deeply reflected the effects of contextualization in the quality management models. They identified 49 future issues that will be challenging the quality management research and practice and showed that contextual factors would not significantly affect the future development of quality management. In particular, in a globalized and international environment, challenges related to change management and adaptation will assume the highest level of relevance in the future of quality management.

*Theme 2: Empirical and theoretical focus of scientific research on EFQM*

*Subtheme 1: Empirical research on the application of EFQM in specific sectors*

The application of the EFQM excellence framework demonstrated a considerable number of advantages. In particular, empirical research focused on testing the model's effectiveness in specific contexts, sectors, and industries. Even if the use of the original model is generally appreciated as a framework for the Total Quality Management (e.g., Calvo-Mora et al., 2014a; van Schoten et al., 2016), different researchers debated the opportunity to operationalize more effectively the model adapting its elements to the specific characteristics of the sector involved in the analysis.

In the context of restaurants, Liu et al. (2021) found that an appropriate modification of the EFQM based on the sector's specific characteristics can contribute to identifying the correct results that have to be considered by managers for improving performance. In particular, evidence showed that restaurant managers should concentrate their attention on the results related to processes and customers. Moreover, they should focus on solving problems connected to clients and services, which should be considered fundamental drivers for organizations' success.

Similar results were shown in the sophisticated model published by Paraschi et al. (2019) for the airport context. As in the EFQM excellence model, they distinguished between enablers and results. In particular, they identified primary results (employee, operational, and quality) and secondary results (customer, society, and financial). Further, they identified strategic enablers (leadership and strategy), human enablers (HRM, suppliers & resources, and partners & customers), and operational enablers (process, products, and services). They showed that the marginal importance of the different inputs varies according to the sector's typology. In the case of airports, the most important priorities are operational efficiency and general efficacy that trained and professional employees can ensure. Therefore, in this sector, human enablers are the most critical factor.

The EFQM excellence model has also been verified in higher education institutions. In particular, Tari and Madeleine (2011) tested the model for the self-assessment of universities, highlighting its potential in planning actions for improving performance. In particular, the model demonstrated to be effective for universities in different countries, despite the need to implement some adaptations. Moreover, Tari (2008) confirmed that higher education institutions could develop efficient self-assessment processes if the EFQM phases are respected, although the managerial practices should be adapted to the universities' context.

*Subtheme 2: Theoretical debate on EFQM excellence model*

The theoretical debate on EFQM, in our sample, started in 1999. The article published by Wilkinson and Dale (1999) discussed the issues related to integrated management systems. In particular, it analyzed the different integration models, discussing the opportunity to achieve a single standard. The paper is particularly interesting for the comparison studied among the models ISO 9001/14001 Matrix, integrated and aligned

approaches, interlinked systems, and EFQM excellence model. The comparative analysis showed that the strength of the EFQM model is to deal with the problem of organizational culture, and it facilitates the improvement of performance. Although it could not be considered a substitute for ISO 9001 and 14001, the authors stated that developing an integrated management system model based on the EFQM framework could overcome the limitations to achieve a systematic approach to Total Quality Management.

In 2001 Yang et al. discussed the opportunity to overcome the considerable degree of subjectivity in the EFQM application. In particular, they used the evidential reasoning approach from multiple attribute decision-making for developing a new model for self-assessment, in which the main limitations of the EFQM's method of scoring: (1) the opportunity to process and store a large amount of data; (2) a business background is no more needed; and (3) reducing the number of different interpretations of criteria and the concept of excellence.

MacKerron et al. (2003) studied the 2000 EFQM framework to develop a generic process for overcoming the limitation of generality implicit in the excellence model. In particular, they built an adaptable process to embrace the diverse operational needs of firms' departments. The process allows firms to choose criteria related to their self-assessment depending on their specific requisites, achieving a more holistic approach to continuum improvement at a strategic and operational level.

The EFQM excellence model was also used to design a framework for evaluating the global performance of supply chains (Kim et al., 2010). By analyzing key success factors for supply chains and using EFQM's enablers and results, they developed a balanced model between its factors and included numerous assessment dimensions.

In conclusion, the theoretical debate on the EFQM framework discussed the opportunity to create an integrating system for self-evaluation, reduce the objectivity of the appraiser, and limit the generality of the model. Moreover, it discussed the opportunity to apply the excellence framework to new environments, like supply chain management. Nevertheless, no research tried to modify the internal components of the model, confirming its effectiveness and flexibility.

### 6.3 Future research opportunities

Table 4 shows the future research opportunities that the authors of the selected papers have suggested. The research questions we found in the articles could be divided into four main sections. The first is the call to contextualize the EFQM excellence model and related research. The second relates to relationships, connections, and integration that authors have suggested analyzing in-depth. The third is composed of the numerous calls for longitudinal replications of the studies. Finally, the fourth relates to work-related issues, like HR management, culture, roles, and responsibilities in applying the EFQM excellence framework. Moreover, the four sections were grouped in superordinate categories depending on their objectives: improving performance, quality management, comparison among businesses, requests for performing research in larger samples, other cultures, and longitudinal logics.

**Table 4.** Future research opportunities

Objective	Section	Research questions	ID article
Improving performance	Contextualization	What are the results that SMEs could achieve in terms of improving performance measurement systems in light of the interpretation of the EFQM model based on available resources?	4
		How will organizations know when they have achieved these objectives and how do they measure these achievements?	23
		What results would be obtained from a test on the conceptual framework of the performance assessment framework for supply chain partnership developed by this study?	13
		Which key performance indicators matter most in the key performance areas during the application of the airport business excellence model?	2
	Relationships, connections, and integration	What are the mediators that impact on the indirect influence paths between the key performance areas?	2
		What are the interactions between real and declared strategy, customer requirements in relation to the segment, perceived performance and organizational barriers?	15
		How do different types of practices introduced in the enabling criteria affect the results?	7
		What additional success factors need to be explored in order to achieve a more complete understanding of the relationship between organizational efforts and supply chain partnership?	13
		What is hindering/preventing or assisting integration?	23
	HR, culture, roles and responsibilities	Can flexible work practices play the role of mediating the impact of quality management on employees?	12
Quality management	Relationships, connections, and integration	What do organizations expect to achieve from integration of models of management system standards?	23
		What are the contributions of customers and stakeholders in terms of the connection between quality management and sustainability?	5
	HR, culture, roles and responsibilities	What are the effects of applying the ISO9001 and EFQM logics to HR practices other than work organization, such as selection and training?	12
	HR, culture, roles and responsibilities	What degree of culture change has already been brought about by the introduction of ISO 9001, ISO 14001 and other systems or quality initiatives?	23
		What is the best way to distribute roles and responsibilities among quality managers?	5
Comparison among businesses	Contextualization	What results would be obtained if the proposed performance assessment framework and performance pyramid were tested in other businesses?	2
		How can Quality Management evolve if applied in contexts of different natures?	5
		What would be the results of applying the model developed in the study to data from non-manufacturing industries?	14
		Can the EFQM identify the differences in the way public and private organizations are managed?	10
		What are the effects of comparing the way self-assessment processes in a wide range of public and private institutions?	16
		What would be the results of a research on trade-offs between activities and actions comparing successful and less successful companies?	19
		Do the organizations have differences in the scope of their systems hindered integration?	23
	Relationships, connections, and integration	Can the causal relationships and the criteria of the airport business excellence model be different according to the category of the airport or according to the region?	2

Larger samples	Contextualization	What would be the results of studies on large samples of SMEs in which the EFQM is applied according to the specific characteristics of the enterprises?	4
		What would be the results of studies on large samples of higher education institutes in relation to self-assessment activities, possibly including quality initiatives implemented in developing countries?	11
	Relationships, connections, and integration	What would be the results of studies on synergies and non-linear relationships between enabling criteria and results in large samples and through additional controls and also taking contingent factors into account?	7
		Do the correlations between enabling factors vary according to the sample size?	7
Other culture	Contextualization	What would be the results of applying the study also in contexts of organizations with EFQM recognition outside Spain?	7
		What are the differences between countries in the results of excellence in relation to the application of the EFQM?	14
	Relationships, connections, and integration	Are there differences in culture within the organization hindering integration?	23
Longitudinal studies		What would be the results of applying the EFQM in longitudinal-type studies?	3
		What would be the effects of longitudinal studies on the pathways to business excellence?	4
		What would be the results of a longitudinal study on the beneficial effects of management and continuous quality improvement in the long term?	6
		What would be the results of applying a longitudinal logic to the study of the effects of the ISO9001 and EFQM logic on the organization of flexible work?	12

## 7 Conclusions

This systematic literature review considers the publications debating the EFQM excellence model (2013) and the EFQM model (2020). In particular, we considered both theoretical and empirical articles published in the top journals of the ABS 2021 list. We described the dataset and performed a thematic analysis that showed the strong and weak points of the model. In particular, we highlighted the consensus in the literature for considering the EFQM (in all its versions) a framework for Total Quality Management, the flexibility of the model which is applied to several kinds of business (e.g., higher education, health systems, airports), its reliable predictive power, and the problem related to its excessive generality. Moreover, we discussed the theoretical debate on the model, highlighting how scientific research tends to overcome its limitation of subjectivity and generality without questioning its foundations, confirming its considerable effectiveness and flexibility.

Nevertheless, we identified some limitations in our work. First, by restricting the publications to the ABS top journal, we discussed a small and effective set of papers, but the opportunity to expand the sample by looking to a more significant sample could improve discussions and results.

Second, the systematic literature review does not allow a quantitative summary of the empirical results achieved in the literature. Since the new version of the model will undoubtedly generate new empirical papers, a meta-analysis of empirical results based

on the old version could help researchers compare their new insights with the previous results.

Finally, there is a need for more theoretical research in the field. Specifically, we call authors to challenge the internal elements of the framework to stimulate scientific debate on the opportunity to improve its predictive power. At the moment, and given the limitations, we applied to the selection of articles in our dataset, there are no theoretical articles that debate the structure of the EFQM model in the new version of 2020. Therefore, we call researchers to engage in a debate on the philosophical foundations of the model. In fact, even if the theoretical debate on the previous version did not let emerge issues on the solidity of its foundations, the changes promoted in the new version of the model could stimulate new scientific discussions and innovations. Further, we call on scientific journals to accept this discussion and promote the publication of conceptual debate around the new version of the EFQM model.

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