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Can Organisations in the Service Industry achieve sustainability development based on Quality Management?

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Abstract

Purpose: In recent years, there has been an increasing interest in sustainability inside the quality field, but so far, the research has been primarily focused on the relationship between sustainability and quality in the manufacturing sector, leaving a gap in the service sector. This research project seeks to bridge this gap.

Methodology: A systematic literature review (SLR) focusing on quality management and sustainability in the service sector, was conducted using two databases, namely Scopus and Web of Science. A total sample of 32 articles were analysed using descriptive statistics and thematic analysis. The findings were grouped into four themes.

Findings: The study showed that there is a positive relationship in the service sector between quality initiatives and the three pillars of sustainability; economic, social, and environmental. Regarding the success factors and barriers to sustainability, top management and employee commitment, organizational culture and stakeholder support were identified as the most influential factors to sustainability.

Research limitations/implications: The results are limited to the categories of service sectors identified in the sample and for the inclusion and exclusion criteria of the sample of articles, which might exclude possible relevant articles to the topic that did not comply with this criterion. The findings and recommendation of the research can be used as a baseline for service industries to drive service quality and sustainability across the sector.

Originality/Value: The findings from this study contribute to the literature of sustainability and quality by providing new insights about the relationship between these two concepts in the service industry and fill the existing gap in the literature about this relationship in services.

Keywords: Sustainability, Quality Management, Service Sector, Critical Success Factors, Barriers.

Paper type: Literature Review

1. Introduction

Companies have been showing interest in developing environmentally friendly activities due to the increased awareness of sustainability among stakeholders. The deterioration of natural resources and the significant attention of environmentalist campaigns (Zhao et al. 2022), the shift of customer's preferences towards sustainability and the regulations of the environment protection are forcing organizations to apply environmental practices (Abbas, 2020).

In 1987, the World Commission on Environment and Development of the United Nations (UN) published the Brundtland Report, which provided the most remarkable definition of sustainable development: 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (UN, 1987). Sustainability involves three interconnected pillars; economic, social, and environmental, which means that these aspects should be integrated to achieve sustainability in all dimensions (UN, 2012). Over the last decades, sustainability has become a concern in societies, companies, and individuals. The negative consequences in the environment by the global unsustainable level of consumption have driven customers to change their ways of consumption and behaviour (Jaiswal and Kant, 2018). Consequently, these companies are experiencing increasing pressure to enhance quality, effectiveness, sustainability, and efficiency of their services (Caiado et al., 2018). In 2022, the service sector accounted for 79% of GDP in the UK (Brien, 2023). Because of the significant representation of this sector in a country's GDP and its expected growth and its significant contribution to the environment, it is necessary to improve the sustainability in those organizations (Shrake et al., 2012).

There has been an increasing interest in sustainability inside the quality field (Svensson, 2006). Some authors have recognized the impact of quality management on sustainability. For instance, Vandenbrande (2021) stated that quality management not only contributes on the financial pillar by increasing the profitability through achieving customer satisfaction and process efficiency, but also impacts the environment. Similarly, Chugani et al. (2017) posit that Lean, Six Sigma and LSS contribute to the conservation of resources by reducing waste and energy. However, there is a lack of research about the impact of quality management and continuous improvement initiatives on the service sector. Caiado et al. (2018) stated that there are not enough studies about ways to achieve sustainable development through continuous improvement methodologies. The service and manufacturing sectors are very different, and these differences might influence the relationship of quality management and sustainability on services. Due to the differences between these sectors, there is a need to verify if the relationship between quality management and sustainability also exists in services. It is this gap that this research project aims to fill.

Therefore, the following research questions have been developed:

RQ1. How do quality management tools and methods impact the sustainability of services?

RQ2. What are the critical success factors and barriers for sustainability in services?

This study comprises the following sections. A description of the method in the next section, the findings on the third section, followed by the analysis and discussion of these findings on the following section. Finally, the last section included conclusions and final recommendations.

2. Method

A Systematic Literature Review (SLR) was selected as the research strategy for the current study. A SLR involves identifying, selecting, analysing, and synthesizing existing research on a specific subject, and presenting the findings in a coherent manner to consolidate the existing knowledge of the topic (Denyer and Tranfield, 2009). According to Tranfield et al. (2003), the stages to perform a SLR are the following:

2.1 Stage 1: Planning the review.

The need for the current research was identified after reviewing several studies in the quality management and sustainability field. The problem emerges from the studies that highlighted the lack of research into the relationship between quality initiatives and sustainability in services, such as Caiado et al. (2018) and Cherrafi et al. (2016). The present study concentrates on investigating the role of quality initiatives, tools, and techniques in the sustainability of services organizations.

To guarantee the high quality of the research, the current study limited its scope by considering only publishers of peer-reviewed academic articles within Business, Management and Accounting and Social Science in the English language. Many recent articles on the quality management field have used only peer-reviewed articles since this criterion is a quality indicator of the study (Dimitrantzou et al. 2020; Caiado et al. 2018; Manatos et al. 2017). The research is not limited to specific journals, and online databases are going to be used to identify relevant studies and avoid missing literature. The online databases selected for the current study are Scopus and Web of Science. Scopus and Web of Science are the two largest online databases in engineering-based publications (Siva et al. 2016). The articles are going to be limited by the year of publication, from 2012 to 2023.

The relevant keywords used to locate articles include Quality Management, TQM, Lean, Lean Six Sigma, Six Sigma, ISO 9001, as these are quality management initiatives. Additionally, the terms Sustainability, Sustainable Development, Critical Success Factors (CSFs), Barriers and Service are going to be combined with the previous keywords to identify relevant articles. The exclusion and inclusion criteria are summarized in Table 1 below:

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> ○ Journal articles in Scopus and Web of Science databases. ○ Peer reviewed articles, books, and conference papers. ○ Articles studying the relationship between quality initiatives, tools, or techniques and sustainability in services. ○ Articles related to sustainability in services. ○ Articles written in the English language. ○ Articles published from 2012 to 2023. ○ Articles within Business, Management and Accounting and Social Science. 	<ul style="list-style-type: none"> ○ Articles in other academic databases. ○ No peer-reviewed articles, books, conferences, web pages, thesis, dissertations, etc. ○ Articles only related to the manufacturing sector. ○ Articles written in any other language than English. ○ Articles published before 2012. ○ Articles out with Business, Management and Accounting and Social Sciences

Table 1. Inclusion and exclusion criteria for the current study.

2.2 Stage 2: Conducting the review.

Using the keywords identified during the planning phase, the next step was to create a set of search strings to identify significant articles and generate the sample of articles. To obtain relevant studies to examine the relationship between quality initiatives and sustainability in services, the following search string was used: (Quality Management) OR (TQM) OR (Lean) OR (Lean Six Sigma) OR (Six Sigma) OR (ISO 9001) AND (Sustainability) OR (Sustainable development) AND (Service). In addition, to explore the CSFs and barriers to achieve sustainable development on service organisations, the search string used was the following: (critical success factor) OR (barriers) AND (Sustainability) OR (Sustainable development) AND (Service).

A screening process was applied based on the inclusion and exclusion criteria shown in *Table 1* above to identify the relevant articles for the study. Using the information provided in their abstract, title and keywords, the articles were filtered and evaluated to determine if they aligned with the focus of the study. Besides this screening process, few articles were excluded due to restrained access to them. Consequently, a total of 32 articles were selected to include in the review (see annexes). The three phases of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for new SLR; identification, screening and included (Page et al. 2021) were adapted to this study to illustrate the process taken to define the list of articles selected for the study following the inclusion and exclusion criteria showed in *Table 1*. This diagram is shown next:

Identification of studies via Scopus and Web of Science

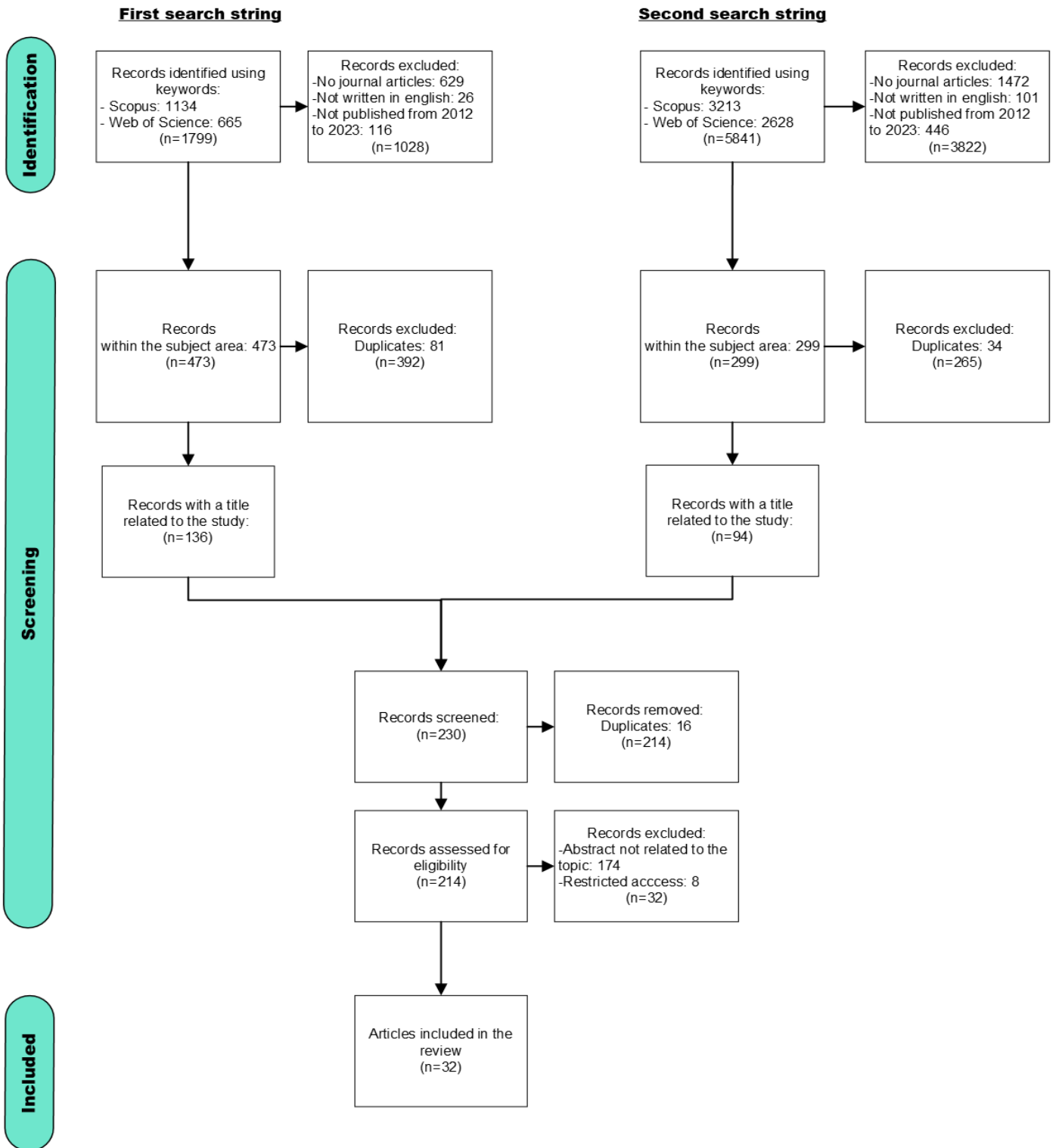


Figure 1. Flow diagram of the process to select the articles for the SLR.

2.3 Stage 3: Reporting the review.

A report consisting of two stages is going to be presented as the systematic literature review (Tranfield et al. 2003). The first stage consisted in a descriptive analysis report, using the data collected from the extraction forms. For instance, the number of articles per service sector (healthcare, education, etc), the number of articles per year of publication, contributions per country or continent and so on. Lastly, the second stage consisted in a thematic analysis report, when the findings were categorized and presented into themes.

3. Findings

3.1 Descriptive analysis

3.1.1 Publisher Journal

The sample articles have been published in a diverse range of journals, indicating the multidisciplinary nature of this topic – see Table 2 below. In terms of publishers, Figure 2 shows the publishers of the various papers.

Publisher and Journals	Number of articles	Percent
<i>Emerald</i>	<u>12</u>	<u>37.5%</u>
Benchmarking: An international Journal	1	3.1%
Corporate governance	1	3.1%
International Journal of Contemporary Hospitality Management	2	6.3%
International Journal of Lean Six Sigma	1	3.1%
International Journal of Productivity and Performance Management	1	3.1%
International Journal of Quality and Reliability Management	1	3.1%
International Journal of Quality and Service Sciences	2	6.3%
Sustainability Accounting, Management and Policy Journal	1	3.1%
TQM Journal	1	3.1%
Worldwide Hospitality and Tourism Themes	1	3.1%
<i>Elsevier</i>	<u>7</u>	<u>21.9%</u>
International Journal of Production Economics	1	3.1%
Journal of Cleaner Production	6	18.8%
<i>Taylor and Francis</i>	<u>4</u>	<u>12.5%</u>
Economic research	1	3.1%
Supply Chain Forum	1	3.1%
Tertiary Education and Management	1	3.1%
Total Quality Management & Business Excellence	1	3.1%
<i>MDPI</i>	<u>3</u>	<u>9.4%</u>
International Journal of Environmental Research and Public Health	1	3.1%
Sustainability	2	6.3%
<i>Faculty of Tourism and Hospitality Management</i>	<u>1</u>	<u>3.1%</u>
Tourism and Hospitality Management	1	3.1%

<i>IEEE publications</i>	<u>1</u>	<u>3.1%</u>
IEEE Transactions on Engineering Management	1	3.1%
<i>Online Academic Press</i>	<u>1</u>	<u>3.1%</u>
International Journal of Applied Economics, Finance and Accounting	1	3.1%
<i>Sage publications</i>	<u>1</u>	<u>3.1%</u>
Organization and Environment	1	3.1%
<i>Springer</i>	<u>1</u>	<u>3.1%</u>
Journal of Business Ethics	1	3.1%
<i>Wiley</i>	<u>1</u>	<u>3.1%</u>
Business Strategy and the Environment	1	3.1%

Table 2. Distribution of articles by publishers and journals.

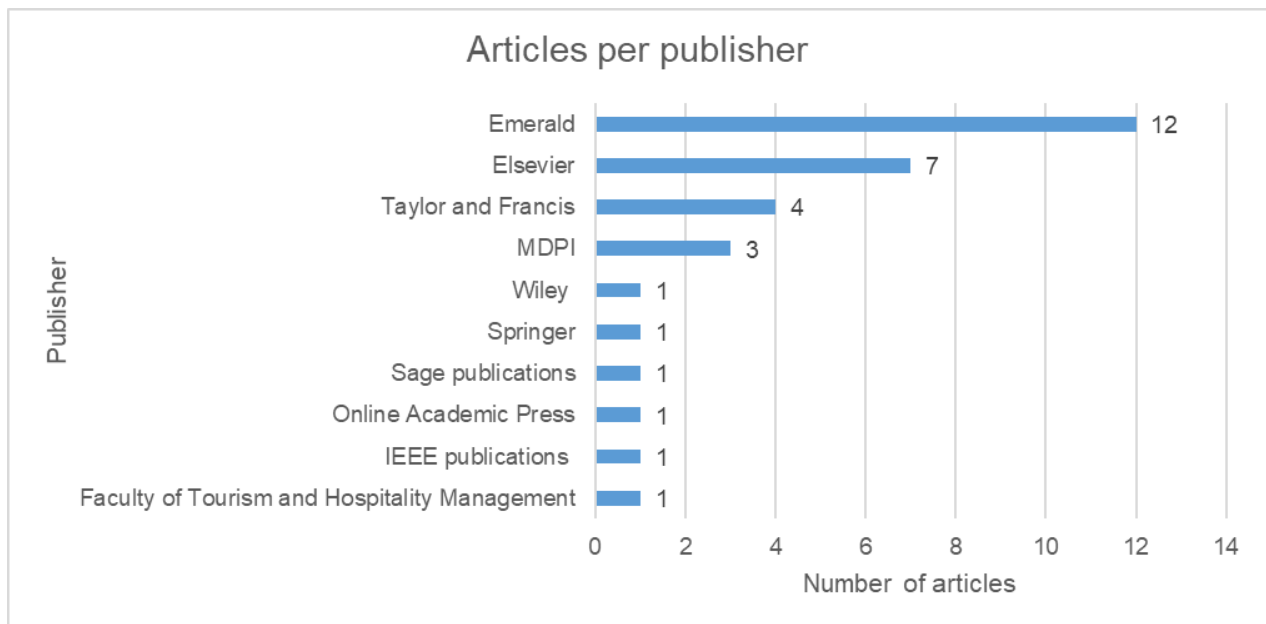


Figure 2. Articles per publisher.

3.1.2 Year of publication

The sample was categorized based on their publication year to detect patterns or trends on the time frame selected as inclusion criteria, from 2012 to 2023. *Figure 3* below presents the distribution of the sample of articles per year during this period. Overall, the number of published articles has been increasing over the years, with the highest publications in 2022.

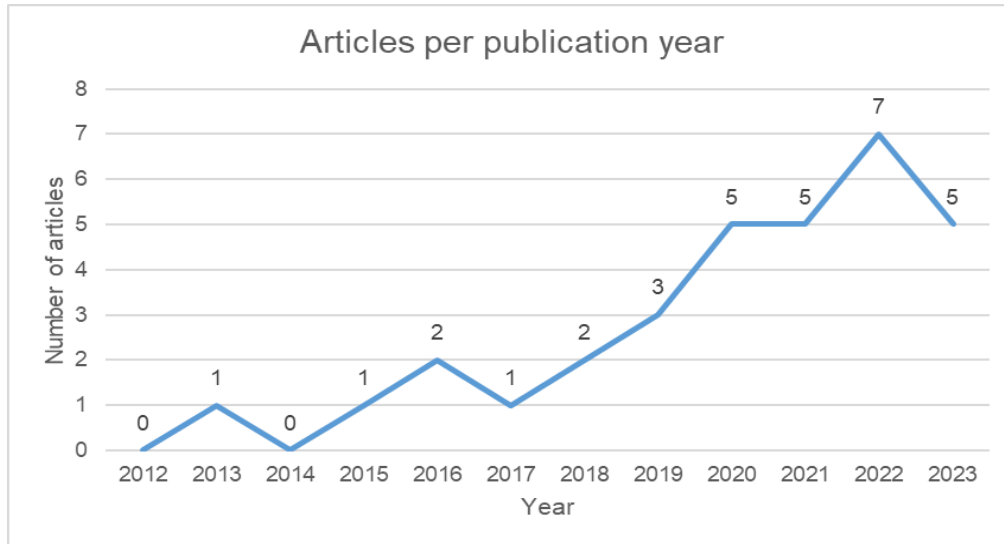


Figure 3. Articles per publication year.

3.1.3 Article type

To analyse the sample of articles by their type, the articles were classified in four categories: literature review, case study, research paper and viewpoint, in accordance with the categorization detected on the articles published by *Emerald*. *Figure 4* below shows the distribution of the articles per their type.

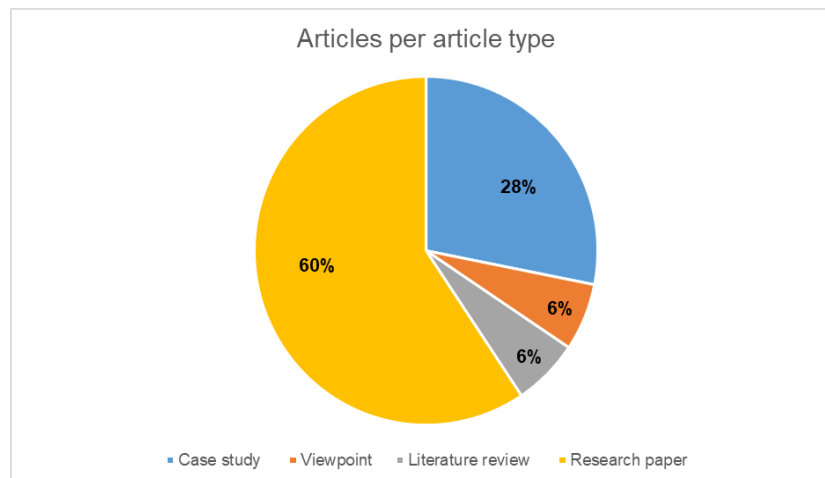


Figure 4. Articles per article type.

3.1.4 Geographic research area

An analysis of the location of the sample was realized to identify the scope of the research across the world. From *Figure 5* below, it is evident that the topic has been investigated in different regions/countries across the globe.

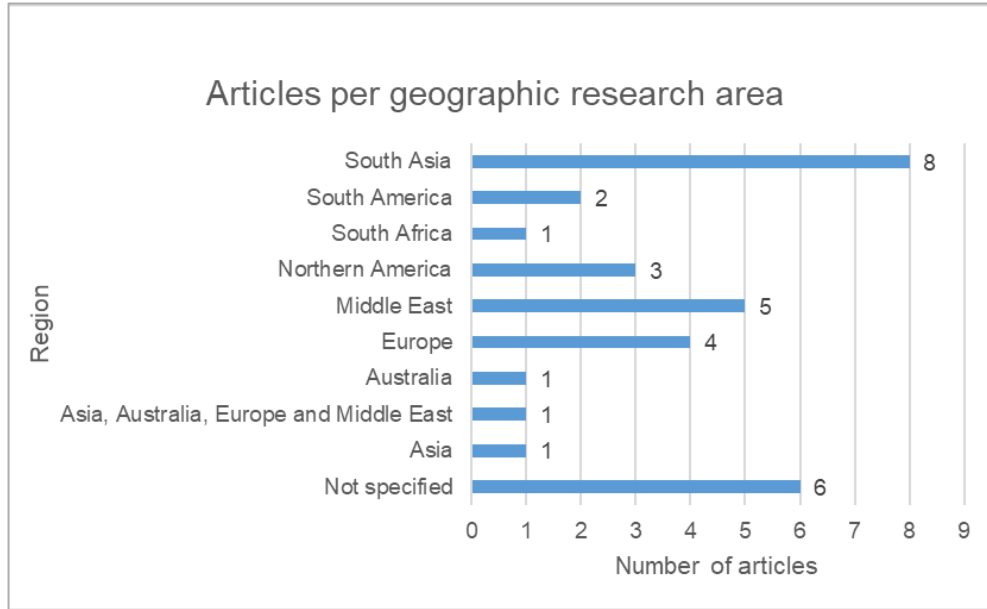


Figure 5. Articles per geographic research area.

3.1.5. Industry sector

Because of the expansiveness of the service industry, an analysis of the sample articles per service sector was included on the report. The categories were assigned in accordance with the sector specified on the article. *Figure 6* below shows the distribution of the sample of articles per industry sector.

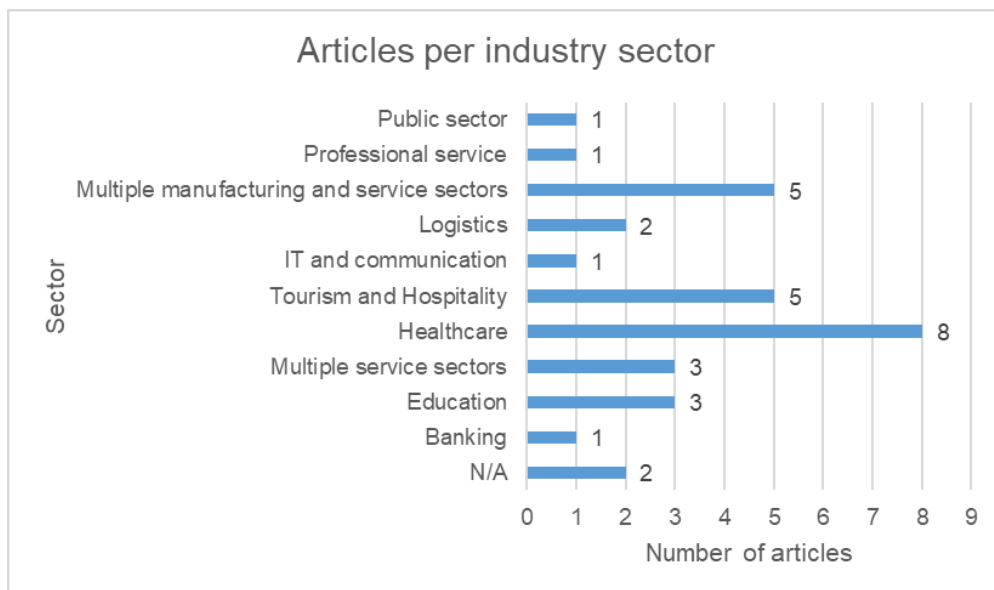


Figure 6. Articles per industry sector.

3.1.5 Topic categorization

Among the sample of articles, different quality initiatives, such as Lean, Lean Six Sigma, the European Foundation for Quality Management (EFQM), among others were identified and categorised as shown in *Figure 7* and *Table 3* below in order to facilitate the thematic analysis. When the themes were identified, the articles were classified according to the research questions of the current study.

In terms of the first research question, Table 3 shows that the quality initiative with more research on sustainability and services is Lean, followed by the Malcolm Baldrige National Quality Award (MBNQA), TQM and LSS. Regarding the second research question, from Table 3, it is evident that more research exists on the barriers of sustainability in the service sector than on the critical success factors (CSFs) to achieving sustainability.

Category	Number of articles	Percent
<i>RQ1</i>	<i>18</i>	<i>56.3%</i>
Lean	5	15.6%
MBNQA	3	9.4%
TQM	3	9.4%
LSS	2	6.3%
EFQM	1	3.1%
Lean and LSS	1	3.1%
Lean, Six Sigma	1	3.1%
Quality concept	1	3.1%
Quality standard	1	3.1%
<i>RQ2</i>	<i>10</i>	<i>31.3%</i>
Barriers	6	18.8%
Barriers & success factors	3	9.4%
Success factors (SFs)	1	3.1%
<i>RQ1 & RQ2</i>	<i>4</i>	<i>12.5%</i>
QFD & Barriers	1	3.1%
PDCA & Barriers	1	3.1%
Lean, LSS, barriers & SFs	1	3.1%
EFQM & SFs	1	3.1%

Table 3. Distribution of articles per theme and research question.

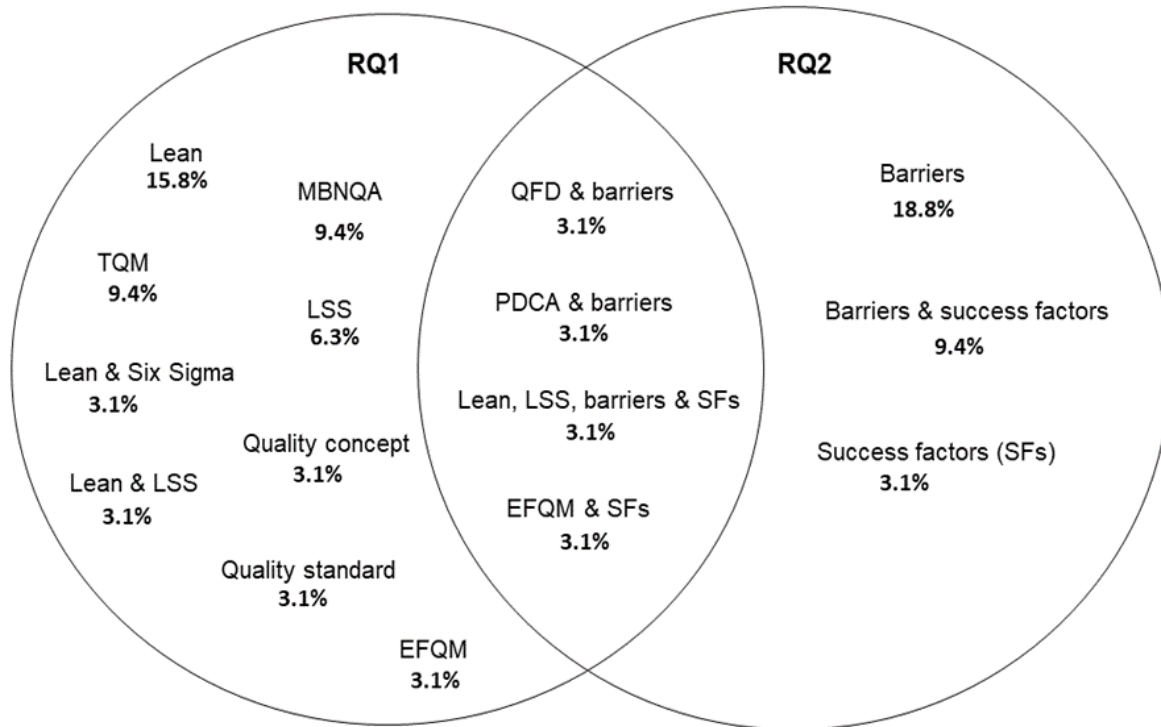


Figure 7. Distribution of the sample per theme and research question.

3.2 Thematic analysis

3.2.1 Generation of themes

The approach to analyse the data findings for the current study was a thematic analysis. Thematic analysis encourages researchers to carefully examine and categorize all the data, thereby permitting new insights to influence the interpretation in various and unforeseen ways (Save the children, 2014). While getting familiarized with the material, several codes were being developed to capture the essence of the article. According to Thomas and Harden (2008), after coding the data, the following stages are developing descriptive themes and generating the analytical themes. A summary of the themes is shown below in *Table 4*:

Theme	Description	References
Theme I: Quality initiatives as a support to the pillars of sustainability	The reviewed research argues that quality initiatives, methods and tools have a positive impact on either one, two or all pillars of sustainability: economic, social, and environmental.	Lizarelli et al. (2023); Morell-Santandreu et al. (2021); Abbas (2020); Khan and Naeem (2018); de Freitas et al. (2017) Awad et al. (2022); Ali AlShehail et al. (2022); Zhao et al. (2022); Ali et al. (2021); Tari et al. (2021); Khalil and Muneenam (2021).

Theme II: Integration of sustainability considerations and management systems with quality initiatives	Research suggested to integrate quality initiatives with sustainability considerations or other management systems in order to support sustainability development in service organizations.	Rathi et al. (2022); Tonjang and Thawesaengskulthai (2022); Navarro (2021); Martin et al. (2020); de Oliveira et al. (2020); Zhu et al. (2018).
Theme III: Use of quality initiatives as a framework to sustainability	This theme discussed the use of quality initiatives to assess and guide sustainability in service organizations.	Benmamoun et al. (2023); Lima et al. (2023); Ozsen et al (2022); Medne et al. (2020); Chowdhury and Quaddus (2016).
Theme IV: Success factors and barriers to sustainability in the service sector	A summary of the factors of service organizations that act as barriers or as enablers to sustainability.	Singh et al. (2023); Olesson et al. (2023); Rathi et al. (2022); Rajapakse et al. (2022); Idahosa and Ebhuoma (2020); de Oliveira et al. (2020); Medne et al. (2020); Hussain et al. (2019); Ashrafi et al. (2019); Raub and Martin-Rios (2019); Chowdhury and Quaddus (2016); Prud'homme and Raymond (2016); Pinzone et al. (2015); Kahreh et al. (2013).

Table 4. Summary of themes.

3.2.2 Findings

3.2.2.1 Quality initiatives as a support to the pillars of sustainability

The analysis of the sample shows that 10 of the 32 articles are based on the relationship between quality initiatives and the pillars of sustainability: economic, social, and environmental. The quality initiatives of concern here are Lean, Six Sigma, Lean Six Sigma (LSS), Quality Standard and Total Quality Management (TQM), in which some authors used the dimensions of the Malcolm Baldrige National Quality Award (MBNQA) to represent it.

Several articles suggested that quality initiatives have a positive impact on the three aspects of sustainability. Lizarelli et al. (2023) performed a study on multiple service sectors and found that the social aspect of the Lean philosophy impacts the environmental and social pillar of sustainability, while the technical aspect of this philosophy impacts the economic pillar. In the same way, Morell-Santandreu et al. (2021) found that Lean has a positive impact on all pillars of sustainability in the healthcare sector. In terms of TQM, Khan and Naeem (2018) argue that the soft elements of TQM have a significant positive impact on sustainability and Abbas (2020) stated that the significance of TQM approaches is equal in both the manufacturing and services sectors to achieve sustainable development (SD). However, some authors suggested that the impact of quality initiatives on the pillars is not equal. De Freitas et al. (2017) found that although LSS is correlated with the three pillars of sustainability, the impact on the economic pillar is four times

higher than the environmental pillar. In the same way, Abbas (2020) highlighted a bigger contribution on the economic pillar and Morell-Santandreu et al. (2021) on the economic and social pillar, with less contribution on the environmental aspect.

While some studies explored the impact of quality initiatives on the three pillars, other articles discussed the impact of quality initiatives on just one pillar. In terms of the environmental pillar, Ali et al. (2021) argues that Lean and Six Sigma have a positive relationship with environmental performance. Khalil and Muneenam (2021) found that TQM has a significant and positive impact on corporate green performance and that this initiative supports organizational culture to enhance corporate green performance. In addition, one of the reviewed articles discussed the relationship between the quality standard and environmental sustainability. Tarí et al. (2021) stated that the integration of quality standard requirements into daily operations and the adoption of continuous improvement principles have a positive correlation with environmental practices and environmental performance. The relationship with economic sustainability was also found on the reviewed research. Awad et al. (2022) analysed the relationship between the Lean philosophy and economic sustainability on the IT and communication sector and found that lean practices positively impact the economic pillar of sustainability.

Finally, some articles supported the relationship between quality initiatives and two pillars of sustainability. Ali AlShehail et al. (2022) performed a study on the public sector and highlighted that the relationship between TQM and economic sustainability is insignificant and that only the impact on the social and environmental sustainability is positively significant. Lastly, Zhao et al. (2022) found that the industry type influences the relationship between TQM and sustainability, meaning that this relationship on the service sector was found to be insignificant, however, the impact on social and economic sustainability was found to be significant.

3.2.2.2 Integration of sustainability considerations and management systems with quality initiatives

The analysis of the sample indicates that 6 out of the 32 articles recommended the incorporation of sustainability practices and other management systems into quality initiatives to promote sustainable development in the service sector. The management system discussed in the reviewed research is the Innovation Management System (IMS). Tonjang and Thawesaengskulthai (2022) performed a study about TQM in the healthcare sector and concluded that the current definition of TQM does not support sustainability and that it is necessary to integrate it to enhance its capacity and recommended an integration of TQM and innovation management to impact the three pillars of sustainability. In the same way, in the healthcare sector, Rathi et al. (2022) found that LSS needs to be integrated with green practices to support environmental sustainability, a summary of the success factors of Green Lean Six Sigma (GLSS) was presented as a solution. Zhu et al. (2018) also proposed the integration of Lean with green practices to support environmental sustainability in healthcare and concluded that Lean provides a system that supports green values.

On logistics, Navarro (2021) highlighted that although process management and Lean tools need to evolve to support environmental sustainability, these initiatives have the potential to enhance environmental practices. Lastly, de Oliveira et al. (2020) proposed the integration of the Plan-Do-Check-Act (PDCA) cycle with Cleaner Production to improve sustainability in services organizations.

3.2.2.3 Use of quality initiatives as a framework to sustainability

Based on the analysis of the sample, it is observed that 5 out of the 32 articles recommended utilizing quality initiatives, tools, and methodologies as a framework to evaluate, guide or assist service organizations in their pursuit of sustainability. The initiatives discussed in the reviewed research were Lean, Lean Six Sigma, the European Foundation for Quality Management (EFQM) model and Quality Function Deployment (QFD). In the education sector, using Lean as a basis to evaluate sustainability on universities, mm et al. (2023) proposed the use of the Value Stream Mapping (VSM) tool to reduce waste, resulting in a positive impact on the three pillars of sustainability. In addition, Ozsen et al (2022) and Medne et al. (2020) suggested the EFQM model as a framework to guide universities in sustainability.

In the healthcare sector, Benmamoun et al. (2023) developed a framework using the tools and principles of LSS to assess and improve operational excellence with a focus on the three pillars of sustainability. Last of all, Chowdhury and Quaddus (2016) proposed the use of the QFD to design a sustainable service.

3.2.2.4 Success factors and barriers to sustainability in the service sector

Among the 32 articles of the sample, 14 of them explored the success factors and barriers to sustainability in the service industry. From these 14 articles, 12 articles discussed the external and internal barriers to sustainability and 4 articles addressed the success factors to achieve sustainable development. To illustrate the findings of the reviewed research, two subthemes were created:

a) Barriers to sustainability in services

The reviewed research allowed to identify external and internal barriers to sustainability. As external barriers, several researchers discussed the importance of the customer's behaviour for service organisations in their journey to achieve sustainability. Oleson et al. (2023) highlighted that the customer's behaviour can either facilitate or hinder sustainability efforts in a customer driven company since these organisations would try to satisfy their requests, a lack of expectation in sustainability activities can lead to lack of action. For instance, Idahosa and Ebhuoma (2020) highlighted the nature of the industry as the biggest barrier in the hospitality sector because of customers behaviour and the dependence of their satisfaction. In addition, the absence of policies and initiatives by the government was highlighted by these authors. Rajapakse et al. (2022) performed a research study on multiple SMEs in the manufacturing and service sector and found that lack of government regulations, support and incentives and low awareness of sustainability in the community are the external barriers for these organisations to implement sustainable practices. In the same way, Singh et al. (2023) discussed that 'inflation', 'negative community perceptions', 'adverse effects on culture and heritage' and 'adverse ecological impact' are challenges that the rural tourism sector has to face to implement sustainable strategies. Rathi et al. (2022) also highlighted the increasing costs in the health care sector. Additionally, the lack of proven and well-known frameworks to achieve sustainability in this sector. In the same way, Chowdhury and Quaddus (2016) described that the barriers to design a sustainable health service are low awareness in the community, absence of standard and lack of government support.

Regarding the internal barriers to sustainability in the service sector, several arguments presented barriers related to the human and social factors of the organization. Rajapakse et al. (2022) identified that lack of commitment and lack of knowledge and awareness are barriers to SMEs in

the manufacturing and service sector. In the same way, Rathi et al. (2022) identified the lack of knowledge and collaboration and the resistive culture, Pinzone et al. (2015) identified as the biggest barrier the lack of employee commitment and Raub and Martin-Rios (2019) pointed out internal resistance, lack of resources, employee buy-in and lack of perceived urgency as barriers to sustainability in the hospitality industry. Similarly, these barriers were highlighted by de Oliveira et al. (2020); Ashrafi et al. (2019); Chowdhury and Quaddus (2016); Prud'homme and Raymond (2016); Hussain et al. (2019).

Additionally, financial and non-financial resource constraints were pointed out as barriers to sustainability in services, such as lack of funding (de Oliveira et al. 2020), inadequate infrastructure (Prud'homme and Raymond, 2016), time allocation (Oleson et al. 2023) increasing costs, limited space and staff (Idahosa and Ebhuoma, 2020).

b) Success factors to achieve sustainable development in services

A total of 4 articles were categorised as being part of this subtheme, with only 2 articles that discussed the Critical Success Factors (CSFs) to implement sustainable practices in services. Regarding the CSFs, Singh et al. (2023) highlighted that stakeholder engagement and support, have a community-driven approach, appreciation and recognition of sociocultural traditions, and development of marketing strategies using digital technologies are the CSFs to achieve sustainable development on rural tourism. As well, Kahreh et al. (2013) performed a study in the banking sector to identify the CSFs of corporate social responsibility (CSR) and pointed out a list of 23 CSFs as a result, in which the most important factors were related to human resources and strategic management, such as, employee commitment, the organization's competitive focus, organizational culture, cooperation, knowledge sharing, and organizational citizenship behaviour.

In terms of success factors, Rathi et al. (2022) investigated the success factors of implementing GLSS in healthcare and found that management commitment and the availability of financial resources are the most important factors because they allow the deployment of the other success factors. Finally, Medne et al. (2020) highlighted that ensuring management support, guaranteeing that employees are aware and comprehend sustainability activities and elements, integrating sustainability in the strategy of the organization and choosing capable leaders are the success factors to implement sustainable activities on universities.

4. Discussion

The current study presents a review of the literature regarding the relationship between quality initiatives, methods and tools and sustainability in services and the success factors and barriers to achieving sustainable development in this sector. The 32 articles reviewed were published in 24 different journals, indicating the multidisciplinary nature of this topic. The Journal of Cleaner Production was identified as the most influential journal in this area, containing the 18.8% of the sample of articles.

The findings show that the most popular research quality initiative with sustainability in services is Lean, followed by TQM and LSS. The predominance of continuous improvement methodologies in the research on sustainability and services, contradicts the findings of Caiado et al. (2018), who found a lack of research regarding LSS and sustainability in services. The reviewed articles can be categorized into four themes: (I) Quality initiatives as a support to the pillars of sustainability, (II) integration of sustainability considerations and management systems with quality initiatives, (III)

use of quality initiatives as a framework to sustainability, and (IV) success factors and barriers to sustainability in the service sector. In addition to the key findings summarized within these themes, various issues in the identified themes can be further explored and discussed.

First, several scholars seem to agree that quality initiatives, tools and methods have a positive impact on the three pillars of sustainability: economic, social and environmental. For instance, Lizarelli et al. (2023) and Morell-Santandreu et al. (2021) concluded that lean positively impacts the three pillars of sustainability. However, some researchers argued that the impact of quality initiatives on the three pillars is not equal, such as de Freitas et al. (2017) and Abbas (2020), who found a bigger contribution on the economic and social pillar and a less contribution on the environmental pillar. Nonetheless, the positive impact on the environmental aspect of sustainability was proven by several researchers and this pillar was the focus of many studies, such as Ali et al. (2021) and Khalil and Muneenam (2021). Additionally, the findings show that the industry sector influences the relationship between quality initiatives and the pillars of sustainability. The relationship between quality and sustainability might be different in other service sectors. For instance, Ali AlShehail et al. (2022) found that the relationship between TQM and economic sustainability in the public sector is insignificant, when other studies showed a strong positive relationship between these two variables, such as Abbas (2020) and Khan and Naeem (2018).

Second, some articles suggested the integration of sustainable principles with quality initiatives. Several scholars argued that the current initiatives of continuous improvement need to be integrated with green practices to support environmental sustainability, such as de Oliveira et al. (2020) and Zhu et al. (2018). However, it was demonstrated that the pure form of these quality initiatives holds the capacity to assist and improve sustainable practices. The analysis of the reviewed research allowed to identify the use of quality initiatives as a framework to sustainability in service organizations. For instance, Lima et al. (2023) suggested the utilization of Lean methodology as a foundation for assessing sustainability in universities, having as a result a favourable influence on the three pillars of sustainability. Even though quality initiatives might serve as a framework to sustainability, a lack of well-known and proven general standards for the service sector about the method to implement sustainable practices by using quality initiatives was found in the literature of the sample analysed. This can be a factor that hinder the sustainability journey of a service organisation, as it was mentioned by Chowdhury and Quaddus (2016) and Rathi et al. (2022).

Third, several researchers (Rajapakse et al. (2022); Rathi et al. (2022); Raub and Martin-Rios (2019)) seem to agree that the most influential internal barriers to sustainability in services were related to the human resources of the organization. Lack of commitment from employees and top management, lack of knowledge and training and resistive organizational culture were the most common barriers identified within the sample of articles. However, non-financial and financial resource constraints were also identified as great barriers to sustainability. Lack of funding was the most mentioned barrier in this category since the presence of this barrier makes it more difficult to overcome other barriers. The financial constraints were more important to services in the public sector, specifically in the healthcare sector in developing countries, in which the budget allocated by the government is very limited, as highlighted by Chowdhury and Quaddus (2016). Regarding the external barriers to sustainability, several scholars argued that the lack of stakeholder support (ex. customers, government, environmental organizations, etc.) was the barrier with the biggest influence. Stakeholder pressure can either facilitate or hinder sustainability efforts. In customer

driven companies, a lack of customer demand in sustainable practices can lead to a failure to act and implement these practices (Olesson et al. 2023). In the same way, the absence of regulations, policies, laws, and support initiatives by the government hinder the sustainability in the service sector (Rajapakse et al. 2022).

Lastly, the success factors with the biggest influence highlighted by most researchers are related to human resources and strategic management. Ensuring commitment from top management and employees, availability of financial resources, having a strong organizational culture and stakeholder support and engagement was pointed out as the most important factors to ensure the success of implementing sustainable strategies in the service sector. On the other hand, a lack of research about the CSFs was identified after analysing the findings of the sample. However, the findings show that the success factors and barriers detected in the literature are related. For example, one of the most influential barriers highlighted by most researchers was the lack of commitment from managers and employees and one of the success factors with the greatest importance detected in the literature was guaranteeing management and employees commitment.

5. Conclusion and recommendations

The increased interest in sustainability practices by different stakeholders, the significant contribution of the service industry to the GDP and the lack of studies regarding the relationship between quality initiatives and sustainability in services, motivated the selection of the current study. The aim of this research was to identify the role of current quality initiatives and associated tools in the implementation of sustainability practices in services. A total of 32 articles were reviewed and clustered into four themes: (I) Quality initiatives as a support to the pillars of sustainability, (II) integration of sustainability considerations and management systems with quality initiatives, (III) use of quality initiatives as a framework to sustainability, and (IV) success factors and barriers to sustainability in the service sector.

Research showed the positive impact of these initiatives on the pillars of sustainability; social, economic, and environmental (Lizarelli et al. (2023); Morell-Santandreu et al. (2021); Khan and Naeem (2018); Abbas (2020)). However, some contradictory evidence about the support of quality initiatives to the environmental pillar of sustainability was found. Therefore, research focused on the level of support of quality initiatives to the environmental pillar of sustainability in services is recommended.

In the same way, the literature revealed that there is a lack of widely recognized and established standards in the service sector regarding the implementation of sustainable practices through quality initiatives (Chowdhury and Quaddus, 2016; Rathi et al. 2022). Thus, another recommendation is to develop a set of proven sustainability guidelines based on quality initiatives to assist service organizations in their journey to sustainability.

While the research demonstrated a positive relationship between quality initiatives and the pillars of sustainability, it is important to acknowledge that the nature of the industry sector might influence the relationship between quality initiatives. However, drawing specific conclusions about any particular service sector might not be reliable in the current study because the sample per category might not be representative. Therefore, further research that specifically targets a particular sector for more accurate findings about whether or not this relationship differs is recommended.

Regarding the success factors and barriers to sustainability in the service sector, research showed that the most influential factors that can hinder or serve as enablers to sustainability are related to human resources, strategic management, and stakeholder support. From the findings, it can be concluded that barriers and success factors are related. Therefore, it can be concluded that if services organisations overcome the barriers to sustainability, they can successfully achieve sustainable development. Top management and employee commitment, organizational culture and stakeholder support were identified as the most influential factors to sustainability.

Several recommendations and practical implications to service organizations that want to start their journey to sustainability are presented. First, as an initial condition, it is recommended that strong top management commitment be visibly in place, as highlighted by Prud'homme and Raymond (2016). Second, as presented above, to successfully achieve sustainable development, a robust corporate culture needs to be developed. Managers need to ensure that employees are aware and committed to sustainability and that the organizational culture is aligned with sustainability values. It is important to ensure that the personnel have the capacity and training to deploy and maintain these activities. Third, service organizations need to incorporate sustainable activities as continuous plans to achieve sustainable development. Service organizations should employ tried and tested continuous improvement initiatives, such as the PDCA cycle, Lean or LSS to include sustainable activities into the organization's strategic plan. Finally, governments and environmental institutions should support the sustainable journey of service organizations in underdeveloped and developing countries by developing regulations, incentives, policies, or laws to promote sustainability.

5.1 Limitations

As with every study, the current study has some limitations. One constraint or limitation of this research is the inclusion and exclusion criteria of the sample of articles, which could lead to the exclusion of relevant articles to the topic that did not comply with this criterion. Besides, due to restricted access to some articles and the combination of keywords used, other relevant studies may have been excluded. In the same way, the categorization of the themes and the interpretation of results still involves a certain degree of subjectivity, which can also limit the present study. Furthermore, the results are limited to the categories of service sectors identified in the sample. Due to the size of the service sector, they might not be sufficiently representative of all services to draw general conclusions, other service sector studies may show different results. Further research into other service sectors not detected in the sample is recommended, for example, the retail sector. Similarly, the current study has a time constraint, which influenced the decision of conducting secondary data research and a cross-sectional study.

5.2 Research contribution

The current study found that the relationship between quality initiatives, tools and methods and sustainability in the service industry is positive. Research showed that these initiatives have a positive impact on sustainability in the service sector. The results revealed that services can use quality initiatives as a framework to support sustainability. Since quality initiatives are well-known proven methods, the use of these initiatives can facilitate the journey to sustainability. In the same way, the criteria for success and failure were presented in this study. Top management and employee commitment, organizational culture and stakeholder support were identified as the most influential factors to sustainability. The findings from this study contribute to the literature of sustainability and quality by providing new insights about the relationship between these two

concepts in the service industry and fill the existing gap in the literature about this relationship in services.

ANNEXES

A list of the 32 articles included in the study with their title, year of publication, journal and author(s) is shown below:

ID	Year of publication	Title	Journal	Author(s)
1	2023	A framework for sustainability evaluation and improvement of radiology service	Journal of Cleaner Production	Benmamoun, Z., Fethallah, W., Bouazza, S., Abdo, A.A., Serrou, D., Benchekroun, H.
2	2023	Conclusion: how could rural tourism provide better support for well-being and socioeconomic development?	Worldwide Hospitality and Tourism Themes	Singh, A.S., Parahoo, S.K., Ayyagari, M., Juwaheer, T.D.
3	2023	Enablers and Barriers: The Conflicting Role of Institutional Logics in Business Model Change for Sustainability	Organization And Environment	Olesson, E., Nenonen, S., Newth, J.
4	2023	Lean and its impact on sustainability performance in service companies: results from a pilot study	TQM Journal	Lizarelli, FL; Chakraborty, A; Antony, J; Jayaraman, R; Carneiro, MB; Furterer, S
5	2023	Sustainability in Public Universities through lean evaluation and future improvement for administrative processes	Journal Of Cleaner Production	Lima, E.D.S., de Oliveira, U.R., Costa, M.D.C., Fernandes, V.A., Teodoro, P.
6	2022	Strategy adaptation for sustainable quality management in universities: a systematic literature review	Tertiary Education and Management	Ozsen, T., Uslu, B., Aypay, A.
7	2022	Success factors for the adoption of green lean six sigma in healthcare facility: an ISM-MICMAC study	International Journal of Lean Six Sigma	Rathi, R., Kaswan, M.S., Antony, J., Cross, J., Garza-Reyes, J.A., Furterer, S.L.
8	2022	The Impact of Lean Management Practices on Economic Sustainability in Services Sector	Sustainability	Awad, M.M., Hashem, A., Naguib, H.M.
9	2022	Total quality management and sustainability in the public service sector: the mediating effect of service innovation	Benchmarking	Ali AlShehail, O., Khan, M., Ajmal, M.

10	2022	Towards Green Credentials of SMEs: Qualitative Insights on Barriers to Green Responsiveness from a Developing Economy	International Journal of Applied Economics, Finance and Accounting	Rajapakse, R.M.D.A.P., Azam, S.M.F., Khatibi, A.
11	2022	Total Quality and Innovation Management in Healthcare (TQIM-H) for Performance and Sustainability	IEEE Transactions on Engineering Management	Tonjang, S; Thawesaengskulthai, N
12	2022	Does quality management system help organizations in achieving environmental innovation and sustainability goals? A structural analysis	Economic Research	Zhao, L., Gu, J., Abbas, J., Kirikkaleli, D., Yue, X.
13	2021	A model for the implementation of lean improvements in healthcare environments as applied in a primary care center	International Journal of Environmental Research and Public Health	Morell-Santandreu, O., Santandreu-Mascarell, C., Garcia-Sabater, J.J.
14	2021	Applying quality concepts to achieve environmental sustainability in the freight transport sector - reviewing process management and lean	International Journal of Quality and Service Sciences	Navarro, P
15	2021	Impact of Lean, Six Sigma and environmental sustainability on the performance of SMEs	International Journal of Productivity and Performance Management	Ali, Y., Younus, A., Khan, A.U., Pervez, H.
16	2021	The association between environmental sustainable development and internalization of a quality standard	Business Strategy and The Environment	Tarí, J.J., Molina-Azorín, J.F., López-Gamero, M.D., Pereira-Moliner, J.
17	2021	Total Quality Management Practices and Corporate Green Performance: Does Organizational Culture Matter?	Sustainability	Khalil, MK; Muneenam, U
18	2020	An approach to implement cleaner production in services: Integrating quality management process	Journal Of Cleaner Production	de Oliveira Santos, H., Alves, J.L.S., de Melo, F.J.C., de Medeiros, D.D.
19	2020	Impact of total quality management on corporate sustainability through the mediating effect of knowledge management	Journal Of Cleaner Production	Abbas, J.

20	2020	Limitations to sustainable resource management in the global south: Evidence from the accommodation industry	Tourism And Hospitality Management	Idahosa, L.O., Ebhuoma, E.E.
21	2020	Sustainability of a university's quality system: adaptation of the EFQM excellence model	International Journal of Quality And Service Sciences	Medne, A; Lapina, I; Zeps, A
22	2020	The Many Meanings of Quality: Towards a Definition in Support of Sustainable Operations	Total Quality Management & Business Excellence	Martin, J; Elg, M; Gremyr, I
23	2019	A multi-stakeholders view of the barriers of social sustainability in healthcare supply chains: Analytic hierarchy process approach	Sustainability Accounting, Management and Policy Journal	Hussain, M., Khan, M., Ajmal, M., Sheikh, K.S., Ahamat, A.
24	2019	Corporate sustainability in Canadian and US maritime ports	Journal Of Cleaner Production	Ashrafi, M., Acciaro, M., Walker, T.R., Magnan, G.M., Adams, M.
25	2019	Think sustainable, act local - a stakeholder-filter-model for translating SDGs into sustainability initiatives with local impact	International Journal of Contemporary Hospitality Management	Raub, SP; Martin-Rios, C
26	2018	Lean six sigma and environmental sustainability: A hospital perspective	Supply Chain Forum	Zhu, Q., Johnson, S., Sarkis, J.
27	2018	The impact of strategic quality orientation on innovation capabilities and sustainable business growth: Empirical evidence from the service sector of Pakistan	International Journal of Quality and Reliability Management	Khan, B.A., Naeem, H.
28	2017	Impacts of Lean Six Sigma over organizational sustainability: A survey study	Journal Of Cleaner Production	de Freitas, JG; Costa, HG; Ferraz, FT
29	2016	A multi-phased QFD based optimization approach to sustainable service design	International Journal of Production Economics	Chowdhury, M.M.H., Quaddus, M.A.
30	2016	Implementation of sustainable development practices in the hospitality industry A case study of five Canadian hotels	International Journal of Contemporary Hospitality Management	Prud'homme, B; Raymond, L
31	2015	Proactive Environmental Strategies in Healthcare	Journal Of Business Ethics	Pinzone, M., Lettieri, E., Masella, C.

		Organisations: Drivers and Barriers in Italy		
32	2013	Investigating the critical success factors of corporate social responsibility implementation: Evidence from the Iranian banking sector	Corporate Governance (Bingley)	Kahreh, M.S., Mirmehdi, S.M., Eram, A.

Table 5. List of articles with the title, journal, authors, and year of publication.

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