


## TOTAL QUALITY MANAGEMENT (TQM) AND ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG): INTEGRATION AND CONTRIBUTIONS TO CONTINUOUS IMPROVEMENT

 <https://doi.org/10.56238/arev7n3-310>

Submitted on: 02/04/2025

Publication date: 03/04/2025

Marcos Serena<sup>1</sup>, Günther Palla Maier, Dulcimar José Julkovski and Olivo Tiago Giotto

### SUMMARY

**Purpose** – Total Quality Management (TQM) and ESG (Environmental, Social, and Governance) are two relevant mechanisms that represent actions for the continuous improvement of processes. However, their application and study have remained largely independent of each other.

**Design/methodology/approach** – This article investigates how TQM (Total Quality Management) and ESG (Environmental, Social, and Governance) can be integrated to contribute to continuous improvement. The work is a systematic review of the literature and the Parsifal® Software was used, which resulted in 141 articles analyzed.

**Findings** – The results achieved demonstrate that the integration of TQM and ESG can contribute to continuous improvement and that TQM and ESG factors can have an impact on the continuous improvement of companies and stakeholders.

**Limitations/implications of the investigation** – Although the results achieved have offered interesting insights into the importance of integrating TQM and ESG for continuous improvement, the exploratory and qualitative character of the investigated sample may cause some limitations.

**Practical implications** – We contribute to management practice with critical points, implementation, and topics to consider in TQM and ESG integration.

**Originality/value** – We contribute to the theory with factors present in the literature that can promote continuous improvement for companies and their stakeholders and we suggest for future studies evidence of practical results of TQM and ESG integration, as well as it is a suggestion to investigate TQM and ESG integration in different business contexts.

**Keywords:** TQM. ESG. Continuous Improvement.

---

<sup>1</sup> E-mail: markseren@hotmail.com

## INTRODUCTION

Total Quality Management (TQM) and ESG (Environmental, Social, and Governance) are two relevant mechanisms that represent actions for continuous improvement in companies' processes (Lim, Ciasullo, Douglas, & Kumar, 2022). However, their application and study have remained largely independent of each other, which may be due to the traditional external focus of ESG and the internal focus of TQM, and understanding the interaction of the two mechanisms is relevant to harnessing the potential they can play in processes (Chams, García-Blandón, & Hassan, 2021).

TQM practices and sustainable business development are management methods used for the control of processes and activities as well as for the improvement of processes and products (Albloushi, Alharmoodi, Jabeen, Mehmood, & Farouk, 2023). TQM is a business methodology that values quality at all levels, from operation to delivery, that is, it is a set of initiatives focused on the total efficiency of the company aimed at satisfying and exceeding the needs and desires of a target audience (Balouei Jamkhaneh, Shahin, Parkouhi, & Shahin, 2022).

ESG is a set of standards and good practices that aims to define whether a company is socially conscious, sustainable, and correctly managed, and is a way to measure an organization's sustainability performance (Nielsen, & Villadsen, 2023). The ESG concept is the balance of environmental, social, and governance aspects in business management. In this way, the economic, transparency, and ethical aspects are articulated, seeking to ensure the competitiveness and longevity of a company (Clément, Robinot, & Trespeuch, 2022).

TQM and ESG can be integrated logically and continuously, in which TQM and ESG become both internal and external in their focus, and can consolidate the strategic potential for maximizing business performance and adopting a long-term value orientation (Sardanelli, Bittucci, Mirone, & Marzioni, 2022). Adopting integrated TQM and ESG mechanisms in business models improves performance and offers means to manage and promote the strengthening of processes and consolidate continuous improvement actions (Atz, Van Holt, Liu, & Bruno, 2023).

The concept of continuous improvement can be in reducing the costs of failures, creating more competitive business plans, improving the use of time and greater quality in the development of the company's activities and thus generating impacts that result in increased customer satisfaction, improved company results, which adds greater value to

the product or service (Galli, 2021). Generating continuous improvement is increasingly present in society's routine and can increase the quality levels of processes and products, as well as improve and modify the overall results of companies (Junior, de Lima, & Stoco, 2020).

Thus, TQM needs to be implemented from the synchrony between the institutional strategic vision and the organizational perspectives, ranging from the provision of quality service and product to market analysis to invest in innovations and trends to meet future demands (Haffar, Al-Karaghoul, Djebarni, & Gbadamosi, 2019). Despite the robust evidence of the direct relationship between organizational culture and TQM, the mechanisms need to be implemented jointly and structured in the company's governance planning actions (Sciarelli, Cosimato, Landi, & landolo, 2021).

The implementation of ESG in the company's planning environment will improve decision-making and facilitate the transition to a high degree of generality in the legal solutions and frameworks adopted by companies, collaborating directly with TQM (Komarnicka, & Komarnicki, 2022). In turn, TQM can work together and absorb ESG in an integrated way to improve environmental, social, and governance issues that will provide the generation of robust results so that the company's performance is assertive and contributes to the improvement of processes (Ali, & Johl, 2022).

ESG guidelines as actions aimed at governance for environmental, economic, and social commitment should be objectives of responsible companies, and integrating and improving these guidelines will boost performance and improve risk management (Jin, 2022). With this, the result of the actions will include process improvement and will allow TQM to align management to guide the company's process controls aimed at continuous improvement (Kumar, Mittal, Verma, & Antony, 2023). This article investigates how TQM (Total Quality Management) and ESG (Environmental, Social, and Governance) can contribute in an integrative way to continuous improvement.

## **THEORETICAL FRAMEWORK**

### **INTEGRATING TQM AND ESG FOR CONTINUOUS PROCESS IMPROVEMENT**

Companies that adopt robust strategies in business models and align best practices will differentiate themselves in the market and create the foundations of their growth based on continuous improvement (Ahmad, Mobarek, & Roni, 2021). The actions necessary for the implementation of TQM and ESG practices in companies undoubtedly have to be

supported by a structure or system that allows these actions to reach all areas of the companies (Haffar, Al-Hyari, Djebarni, Alnsour, Oster, Al-Shamali, & Alaya, 2023).

To seek continuous improvement, in addition to developing actions that reach all areas, the company needs to have effective initiatives to ensure sustainability and reduce risks in operations, and one of the main issues to start integrating TQM and ESG is to establish best practices and monitor efficiency and effectiveness to realize the sustainability of results (Akanmu, Hassan, Mohamad, & Nordin, 2023). Reducing the risks of operations implies a contemporary understanding of the systems and companies that are concerned with practicing continuous improvement tend to be more aware of their social and environmental impact, in addition to presenting better management and governance practices and thus mediating the behavior that supports the introduction of new forms of work (Helfaya, Morris, & Aboud, 2023).

ESG should not be conducted as a new isolated management program, on the contrary, it brings opportunities to see the different scopes of management of the company holistically and take advantage of the synergy between them to promote the integration of management systems through their alignment with the set of environmental, social, and governance criteria that have come to guide activities, sustainable business, and investment (Das, 2023). Moreover, for ESG implementation to be permanently consolidated, Management Systems are effective instruments to organize the new practices adopted in the company's processes and improve them with continuous improvement, where TQM generates the necessary assistance to congregate and monitor activities (Biswas, Manna, & Pahari, 2023).

In this way, we can highlight that both TQM and ESG allow companies to present good environmental, social, and governance practices to stakeholders with positive results and continuous improvement (AlQersh, Saufi, Muhammad, Bin Yusoff, & Thursday, 2023). After all, a company that practices continuous improvement and develops TQM aligned with ESG brings low risk to the potential investor, collaborates with stakeholders, and is also responsible for ensuring the longevity of the business (Alawag, Alaloul, Liew, Baarimah, Musarat, & Al-Mekhlafi, 2023).

In addition, the longevity of the business, and continuous improvement that, is applied in a robust and integrated way in the company's actions, increases resilience in the short and long term, making it possible to adapt and overcome challenges (Zighan, & Ruel, 2023). The role of continuous improvement in building company resilience has a cyclical

process, as a vital cultural aspect and can be considered a business philosophy as well as emphasizing a holistic change approach based on constant change (Tezel, Koskela, & Tzortzopoulos, 2023).

Tezel, Koskela, and Tzortzopoulos (2023) also report that continuous improvement increases the resilience of companies in the short and long term and introduces the concept of resilience in decision-making about their risks, adapting, absorbing changes, and prevailing over time. To enable a role and perpetuity of continuous improvement, the company should consider continuous improvement as a cyclical process, have a cultural aspect to a business philosophy, and emphasize a holistic change approach based on small but constant changes centered on results (Siripipatthanakul, Limna, Sitthipon, Jaipong, Siripipattanakul, & Sriboonruang, 2022).

TQM coupled with ESG can ensure that projects meet stakeholder requirements and generate critical factors to strengthen continuous process improvement, enabling TQM dimensions to create significant opportunities in ESG actions as well as processes (Vihari, Yadav, & Panda, 2022). In addition, the dimensions of TQM consisting of organizational management, communication to improve quality, training and development, employee participation and recognition, and culture, influence the development of corporate strategies leading to concrete ESG practices (Rounok, Qian, & Alam, 2023).

Applying TQM and ESG with planning and a properly trained team can result in the total success of the work, after all, it is a matter of survival and competitiveness in the face of competition, that is, the company has no time to waste, decisions need to be made immediately and they are exactly what will define the future of business (Jain, & Tripathi, 2023). In this way, by properly correlating TQM and ESG adopted in the company's management scope, it is possible to insert the new initiative in the processes and controls determined by the management procedures already established, facilitating its consolidation and improving the management system in an integrated manner with the promotion of continuous improvement (Tamim, Mahmood, & Ansari, 2023).

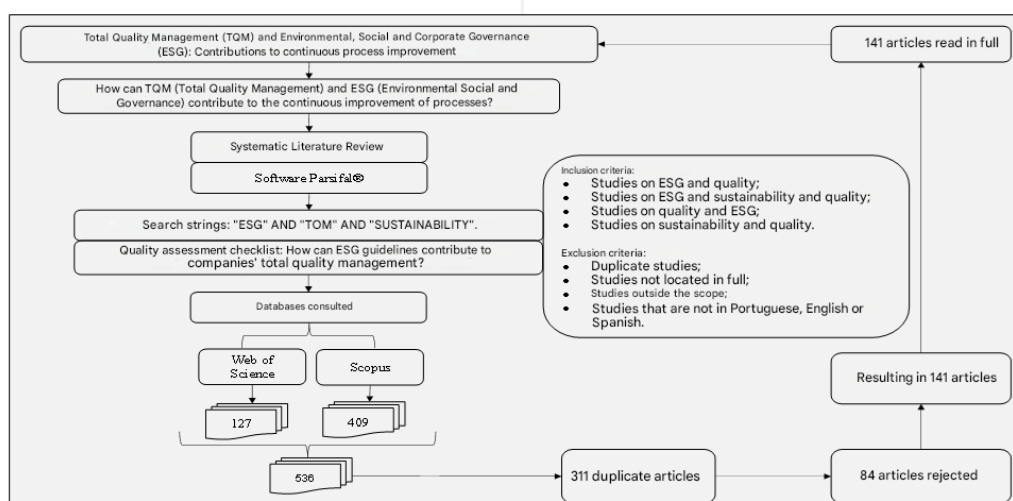
## **METHODOLOGICAL PROCEDURES**

This study is a Systematic Review of the Literature on TQM and ESG. The search strings "ESG" "TQM" AND "SUSTAINABILITY" were used. The search was carried out on August 29, 2024, using the Parsifal® software in the Scopus and Web of Science databases (Kitchenham, & Charters, 2007). The files were imported with the help of the

Parsifal® Software in BibTex format and totaled 536 articles. After the exclusion of duplicates (311 articles) and rejected (84 articles), a total of 141 articles were analyzed in full. Figure 1 shows the execution of the actions to execute the activity.

The general criteria of quality, inclusion, and exclusion were applied during the process of constructing the questions in the Parsifal® Software (Figure 1). In the PICOC plan (Population, Intervention, Comparison, Outcome, Context) the following search strings were included in the Population: "ESG", "sustainability", "total quality", "management", and "companies"; Intervention as words industry, manufacturing, management; Comparison included a systematic review of the literature, bibliometrics, case study; Results include article, review, research article, tools, studies, methodologies, guidelines, and indicators; Ending with the Context included studies, companies, quality, production.

**Figure 1 – Execution of activities**



The main research question was how TQM (Total Quality Management) and ESG (Environmental Social and Governance) can contribute to the continuous improvement of processes and how supporting questions were included: How can ESG guidelines contribute to total quality management? What aspects related to ESG (Environmental, Social, and Governance) in the productive processes influence the quality management of companies? The ESG impact the total quality management of companies? ESG influences the productive processes of companies. Does the ESG impact the final result of production processes by improving total quality management? How can ESG guidelines contribute to the sustainability of quality management? The parameters for data extraction were the



authors, year of publication, research challenges, country of origin, ESG, quality management, and journals they published.

## RESULTS

Environmental and social sustainability, which are strongly projected in the external environment, and those of governance and corporate social responsibility, anchored in the internal environment, are essential in discussions about the ability to make significant contributions to companies. TQM, in turn, deals with the ways of directing and controlling the entire performance of an organization from a systemic view, considering the demands of all stakeholders. Thus, TQM is based on leadership and strategy, people engagement, process improvement, relationship management, and social responsibility, where it organically includes guidelines and management practices that are complementary or directly associated with ESG, and mutually reinforcing.

TQM has been fostering continuous improvements for organizations, whether at first improving products and services, then improving results and reputation, through the development of systems and processes, and now, contributing to the implementation of a sustainable cycle with the best environmental, social, and governance practices. In summary, the quality of how ESG is practiced and measured enters the definitive radar that seeks safe investments for the environment and, consequently, for future generations. Due to TQM's alignment with sustainability and ESG, we identified that this alignment has a great opportunity to contribute to the development and continuous improvement of companies.

ESG, in turn, is being demanded by various stakeholders for all types of companies, for example, by large buyers and customers, where implementing environmental, social, and governance principles in their processes, setting goals, evaluating the actions taken, and measuring, authenticating, and reporting the quality of the results achieved is preponderant for the companies' business and future objectives. ESG can also be understood as a way for organizations of all kinds to achieve their objectives, guided by responsible environmental, social, and economic principles, supervised by robust governance, which includes addressing the concerns of stakeholders in their strategies, assessing and addressing associated risks and opportunities, and promoting transparency of the results of this conduct based on a TQM.

As with the entire system under construction, based on new challenges of integrating concepts, management practices, controls, and measurements, there may be conceptual distortions or deviations in the integrative activities of the implementation of TQM and ESG. This does not diminish the value of the initiative, its objectives, and principles, nor does it make it an inappropriate or harmful practice for the organizations that adopt them, quite the contrary, it makes these initiatives precursors to trigger new metrics and establish new standards for the search for continuous improvement integrating TQM and ESG.

However, it is important to be aware of the existence of practices that translate correct action and that seek to resignify the internal demands of companies from the external demands of society. From a practical point of view, a company that makes aligned TQM and ESG commitments guides its operations in a structured way and the chances of serious failures occurring in its business are reduced. Likewise, when the company discloses information resulting from TQM and ESG actions, it provides relevant data to stakeholders that it is committed to best practices, and these best practices, promote trust and reduce the risks of causing environmental damage in operations that result in financial losses.

In this path of union between TQM and ESG aiming at continuous improvement, the company must promote initiatives aimed at joint commitments in an integrated way as a way to make them tangible, and Maganga and Taifa (2022) state that industry 4.0 technologies can help the demands of companies. The commitment is to deliver value by reducing risks, organizing knowledge, and relevant positions in the sense of joint integration, and actions to develop TQM's culture with ESG.

Unlike what happens with other mechanisms or programs, TQM and ESG are implemented by the company itself and it is up to it to define the steps and control tools for the work and the way to establish the roles of those involved. Although it is an internal regulation, it is not completely free, as it must be based on standards already instituted by the company, both in the specific ways of implementing, measuring, and controlling, as well as monitoring the results. Implementing and integrating TQM and ESG will depend on several factors, such as the size of the company and its own organizational culture, as well as the topics to be considered since the company can decide on one or a few according to its reality and size (Figure 2).



While small and medium-sized organizations can count on a professional dedicated to putting into practice the proposed measures to integrate TQM and ESG, larger companies may need a specialized department entirely focused on the subject. It is worth noting that the technology already presents very efficient solutions for companies looking for more agility and security in application and monitoring. These innovations bring numerous gains, especially for companies that deal with a high volume of information and more complex processes.

There is little point in having an entire department focused on integrating TQM and ESG if employees are not trained and do not have the necessary knowledge to put best practices into action, so everyone involved must be aware of the issues and what is expected as results of the work, thus achieving a sustainable economic result more quickly. Ziolo, Bąk, Filipiak, and Spoz (2022) address that companies as people acting are the factors that interact with the other variables and that will promote a sustainable economy for the company.

**Figure 2.** Impacts and contributions to TQM and ESG integration

Impacts	Contributions of TQM and ESG	Critical point	TQM and ESG implementation for continuous improvement	Topics to Consider Deploying, Measuring, and Monitoring
<b>Society</b>	Guarantee of meeting the needs of generations, Improve people's quality of life, Integrate people for prosperity and peace, Disseminate examples of responsible integration, Stimulate new ideas for continuous improvement; Promote global consensus on good practices.	Develop reliable elements to demonstrate good TQM/ESG practices	Include TQM and ESG in the strategic plan; Create a schedule of activities; Analyze available technologies; Invest in technologies for the context; Educate all levels of the company; Develop a collective work plan; Promote collective training; Define the roles of those involved; Establish rules for the work; Create a code of ethics; Integrate documentation; Create a TQM and ESG culture; Create an integrative TQM and ESG environment; Incorporate into strategies and define goals; Monitor goals and analyze results; Analyze risks and opportunities; Create mechanisms to control risks; Develop a methodology for opportunities; Share effective results; Perform cycle analysis; Establish a continuous improvement plan; Draw up new plans and new goals; Disclose results to those involved; Disclose results to society; Monitor feedback; Provide feedback on the strategic plan; Provide new resources and make improvements.	Emission of greenhouse gases and pollutants; Energy efficiency; Use of water resources, Biodiversity care; Circular Economy; Waste generation; Carbon footprint; impact on climate change; Clean technologies.
<b>Companies</b>	Access to responsible and attractive investments; Equity and transparency in the allocation of resources; Improvement of image and reputation; Customer loyalty and access to new markets; Improvements in customer satisfaction index; Competitive advantage.	Do what you mention under penalty of falling into disrepute		Health; Safety; Workers' rights, Ethics in relationships, Diversity, Inclusive social action; Human capital development, Access to health; Access to financing.
<b>Shareholders and Investors</b>	Long-term investment security; Assertive decision-making; Reduction of business risks; Reputation and image in the market; Greater potential for economic return; Access to differentiated credit lines.	Develop reliable assessment of investment risks and opportunities		Strategic planning TQM and ESG; Stakeholder rights, Legality and compliance; Risks and opportunities, Transparency, Ethics in business.
<b>Consumers</b>	Commitment to social needs; Preference for responsible products and services; Legal certainty in compliance with laws, Development of environmental responsibility; Culture for responsible consumption; Products and services from responsible companies.	Demonstrate through reliable elements that the company has good practices		

The impacts and benefits that the integration of TQM and ESG can generate are comprehensive for society, companies, shareholders and investors, and consumers (Figure 2). Attention is on critical points, where the company must be attentive and aligned with its values to develop reliable elements that evidence good practices, it must carry out what it

mentions, otherwise it may lose prestige and fall into disrepute, evaluate risks and opportunities of investments and clearly and objectively evidence that it has established good practices.

All of this, implemented and controlled efficiently, generates a positive effect for the entire company. One of the most observed consequences is increased efficiency, since managers start to make better decisions and reduce operating costs. Another notable impact is the increase in productivity among employees. This is because the company's alignment with integrated practices increases the feeling of satisfaction among employees. In other words, with effective integration, the company also gains in talent retention and attraction, which is converted into a competitive advantage. All this transformation of the company naturally reflects in an improvement of its institutional image with the market of investors and consumers.

TQM helps companies improve customer satisfaction by offering means for continuous improvement, giving credibility to their customers and shareholders, showing that the company can offer products and services that meet their requirements as well as exhibit an image of a sustainable company (Antony, McDermott, Sony, Toner, Bhat, Cudney, & Doulati, 2023). ESG helps companies improve financial performance, increase stakeholder confidence, and strengthen their image and reputation by reducing costs and waste (Amiraslani, Lins, Servaes, & Tamayo, 2023).

The integration of TQM and ESG can be a great way for the company to increase competitiveness. It helps to satisfy customer demands and increase the efficiency of business processes. It also allows you to make clearer analyses of what needs to be corrected and how it will be done. This integration process can also impact the guarantee of improvement in work relationships, as well as help new forms of collaborative work. Another important point is the company's engagement for the continuous improvement of productivity, as well as increasing the satisfaction of internal and external audiences.

The results show that TQM and ESG are approached and directed to work in an integrated way. Authors such as Das (2023) and Nielsen and Villadsen (2023), emphasize that integration can establish new ways of working with new results that will allow companies to face market challenges and improve at all levels and structures of the company (Figure 3). TQM and ESG collaborate to improve processes and promote sustainable development with beneficial impacts for society, companies, shareholders, and investors, as well as for consumers.

**Figure 3.** Publications and factors present in the literature

Publication		Factors present in the TQM and ESG literature can promote:	
Year	Number	Number	
2023	18	17	Cost reduction
2022	21	15	Sustainable company reputation
2021	16	14	Customer loyalty
2020	10	9	Sustainability with transparency
2019	14	18	Security for investors
2018	12	7	Competitiveness
2017	9	5	New lines of credit
2016	11	9	Culture for sustainability
2015	4	11	Incentives to face challenges
2014	7	5	Better products
2013	9	5	Better services
2012	4	7	New technologies
2011	5	6	Commitment of the actors
2010	-	8	Teamwork consensus
2009	1	5	Increased resilience
<b>Total</b>	<b>141</b>	<b>141</b>	

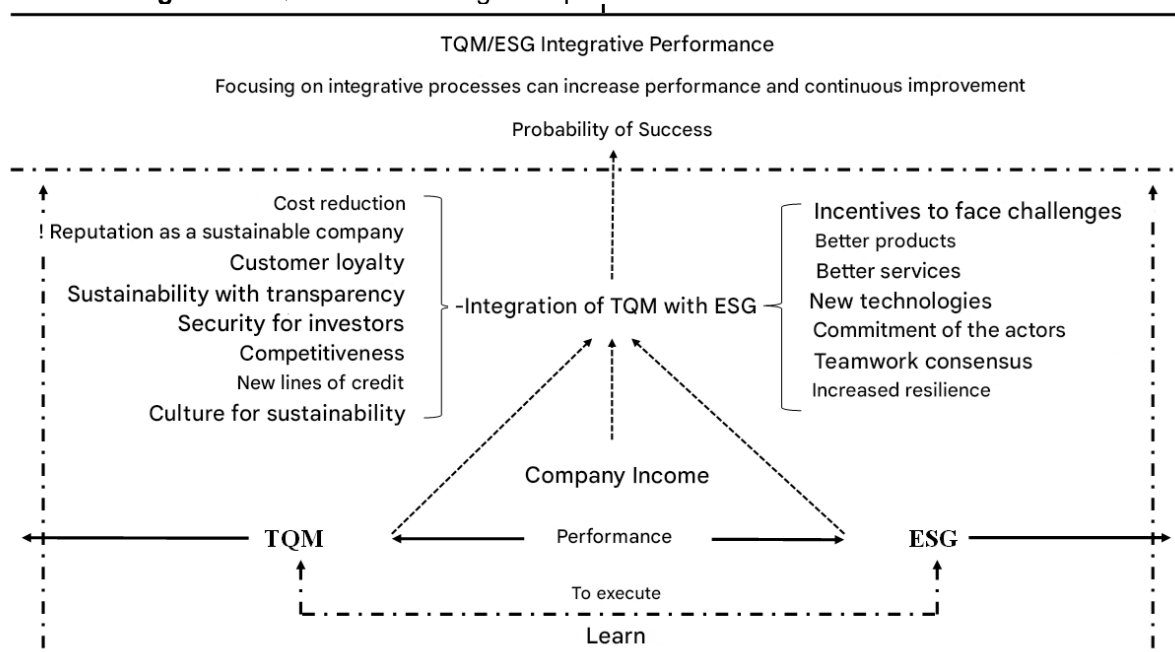
Impacts for continuous improvement of companies and stakeholders

The factors pointed out mean that companies can build a holistic and integrative view of TQM and ESG so that they can structure work guidelines aiming at parsimony between TQM and ESG (Figure 3). Vihari, Yadav, and Panda (2022) point out that integrative practices improve business performance and consequently the continuous improvement of economic and social factors. Similarly, Clément, Robinot, and Trespeuch (2022) point out that practical concepts, when applied in conjunction with other metrics, tend to promote continuous improvement and allow new insights into processes.

In addition, continuous improvement as something to be sought and maintained in an efficient and lasting way, establishes new goals and ways of monitoring by developing robust practices throughout the company's structure (Figure 3). Continuous improvement, from the company's point of view, as a set of actions to improve processes, products, and services, leads to greater efficiency and productivity, where implementing TQM and ESG practices can leverage the factors and allow critical points not to hinder the company's plans (Figure 2).

The search for continuous improvement requires companies to learn constantly and ally with practice. It is understood that both TQM and ESG as elements working in opposite directions, and companies that adopt one or the other, both meet the requirements of the market and companies and collaborate with performance (Figure 4). Traditionally, both meet the configurations of companies, even with specific characteristics and limitations in their applicability according to the size and economic power of the companies.

**Figure 4.** TQM and ESG integrative performance for the likelihood of success



The integrative performance of TQM and ESG, aiming at the probability of success, depends on the integration of all factors (Figure 4). This integrative performance will make continuous improvement an objective to be achieved and maintained to promote in-depth knowledge of business processes and activities and, at the same time, generate risk reduction and improvement of the company's results.

Integrating work, and processes of making services or products is like enhancing results and carrying out optimized performance actions for the company (Fang, Nie, & Shen, 2023). As with the company's other operations, integration needs to be thought out and implemented in a strategic and participatory way, so that involvement and standardization occur in the company's activities, aiming at continuous improvement for all stakeholders.

## IMPLICATIONS AND FINAL CONSIDERATIONS

This article investigated how TQM (Total Quality Management) and ESG (Environmental, Social, and Governance) can contribute in an integrative way to continuous improvement. Through a systematic literature review using the Parsifal® Software, we examined the Web of Science and Scopus databases. We obtained 536 articles, which after initial analysis were removed from duplicates and rejected, and 141 articles were read and analyzed in full.

TQM and ESG can be integrated logically and continuously, being two relevant mechanisms for continuous improvement actions in company processes. TQM is a management method used to control processes and ESG is a set of standards and good practices that aims to define whether a company is socially conscious, sustainable, and correctly managed.

In turn, continuous improvement is increasingly present in society's routine and generates better use of time, and quality in the development of activities, increases customer satisfaction, and improves the company's results. Added to this is the importance of synchronizing TQM and ESG in the company's strategic plans, so that the actions are joint and structured, which will improve decision-making and facilitate the paths for the generation of continuous improvement throughout the company's structure.

For TQM and ESG integration to generate contributions, companies need to take care of the critical points, since these points can contribute negatively to implementation.

Although the critical points are pointed out for each impact, society, company, shareholders investors, and consumers, the critical points can interfere simultaneously with all stakeholders, since the processes are interdependent. Regarding the implementation of TQM and ESG for continuous improvement with the topics to consider, implement, measure, and monitor, these can be worked together and systemically or they can be worked on individually and selectively since the size of the company and the economic level reflects on the company's strategies.

Pointing to the publications, it is evident that from 2016 onwards there was a growth in publications that address paths for integrated work between TQM and ESG. These publications reinforce that integrating ways of working can develop new levels of results and allow beneficial progress for all stakeholders. Also, the publications point out TQM and ESG factors that can promote the continuous improvement of companies and stakeholders and with this, companies can build a holistic and integrative vision aimed at continuous improvement. Although these factors are pointed out in different years and several publications, they can be present at all times in the company and systematically contribute to the advancement of continuous improvement.

Integrating TQM and ESG can increase the resilience of companies by improving work and results, and with that, generate a culture of continuous improvement and establish a cyclical and lasting process. TQM and ESG can jointly develop new strategies and practices to ensure the perpetuity of the business, as well as reduce corporate risks.

The market and stakeholders are demanding more and more continuous improvement from companies and TQM, combined with ESG, can contribute to the rise of business, generating a greater probability of success, increasing performance, and continuous improvement. Although TQM and ESG work in opposite directions, both collaborate with beneficial results for companies. Integrating TQM and ESG will enhance results and reduce risks by promoting more robust results and optimized ways of working.

We contribute to the theory with factors present in the literature that can promote continuous improvement for stakeholders. We contribute to management practice with critical points, implementation, and topics to consider in TQM and ESG integration. We suggest for future studies evidence of practical results of TQM and ESG integration, as well as investigating TQM and ESG integration in different business contexts.



## REFERENCES

1. Ahmad, N., Mobarek, A., & Roni, N. N. (2021). Revisiting the impact of ESG on financial performance of FTSE350 UK firms: Static and dynamic panel data analysis. *Cogent Business & Management*, 8(1), 1900500. DOI: 10.1080/23311975.2021.1900500
2. Akanmu, M. D., Hassan, M. G., Mohamad, B., & Nordin, N. (2023). Sustainability through TQM practices in the food and beverages industry. *International Journal of Quality & Reliability Management*, 40(2), 335-364. DOI: 10.1108/IJQRM-05-2021-0143
3. Alawag, A. M., Alaloul, W. S., Liew, M. S., Baarimah, A. O., Musarat, M. A., & Al-Mekhlafi, A. B. A. (2023). The Role of the Total-Quality-Management (TQM) Drivers in Overcoming the Challenges of Implementing TQM in Industrialized-Building-System (IBS) Projects in Malaysia: Experts' Perspectives. *Sustainability*, 15(8), 6607. DOI: 10.3390/su15086607
4. Albloushi, B., Alharmoodi, A., Jabeen, F., Mehmood, K., & Farouk, S. (2023). Total quality management practices and corporate sustainable development in manufacturing companies: the mediating role of green innovation. *Management Research Review*, 46(1), 20-45. DOI: 10.1108/MRR-03-2021-0194
5. Ali, K., & Johl, S. K. (2022). Soft and hard TQM practices: future research agenda for industry 4.0. *Total Quality Management & Business Excellence*, 33(13-14), 1625-1655. DOI: 10.1080/14783363.2021.1985448
6. AlQershi, N. A., Saufi, R. B. A., Muhammad, N. M. N., Bin Yusoff, M. N. H., & Thurasamy, R. (2023). Green creativity, TQM and business sustainability of large manufacturing firms in Malaysia. *The TQM Journal*, 35(4), 924-945. DOI: 10.1108/TQM-10-2021-0309
7. Amiraslani, H., Lins, K. V., Servaes, H., & Tamayo, A. (2023). Trust, social capital, and the bond market benefits of ESG performance. *Review of Accounting Studies*, 28(2), 421-462. DOI: 10.1007/s11142-021-09646-0
8. Antony, J., McDermott, O., Sony, M., Toner, A., Bhat, S., Cudney, E. A., & Doulatbadi, M. (2023). Benefits, challenges, critical success factors and motivations of Quality 4.0—A qualitative global study. *Total Quality Management & Business Excellence*, 34(7-8), 827-846. DOI: 10.1080/14783363.2022.2113737
9. Atz, U., Van Holt, T., Liu, Z. Z., & Bruno, C. C. (2023). Does sustainability generate better financial performance? Review, meta-analysis, and propositions. *Journal of Sustainable Finance & Investment*, 13(1), 802-825.
10. Balouei Jamkhaneh, H., Shahin, A., Parkouhi, S. V., & Shahin, R. (2022). The new concept of quality in the digital era: a human resource empowerment perspective. *The TQM Journal*, 34(1), 125-144. DOI: 10.1108/TQM-01-2021-0030
11. Biswas, D., Manna, A., & Pahari, S. (2023). Technology Management (TM) on Corporate Sustainability Performance (CSP): The Moderating Role of Total Quality

- Management (TQM). *FIIB Business Review*, 23197145231168726. DOI: 10.1177/23197145231168
12. Chams, N., García-Blandón, J., & Hassan, K. (2021). Roll reversal! Financial performance as an antecedent of ESG: The moderating effect of total quality management. *Sustainability*, 13(13), 7026. DOI: 10.3390/su13137026
  13. Clément, A., Robinot, É., & Trespeuch, L. (2022). Improving ESG scores with sustainability concepts. *Sustainability*, 14(20), 13154. DOI: 10.3390/su142013154
  14. Das, A. (2023). Predictive value of supply chain sustainability initiatives for ESG performance: a study of large multinationals. *Multinational Business Review*. DOI: 10.1108/MBR-09-2022-0149
  15. Fang, M., Nie, H., & Shen, X. (2023). Can enterprise digitization improve ESG performance? *Economic Modelling*, 118, 106101. DOI: 10.1016/j.econmod.2022.106101
  16. Galli, B. J. (2021). Cost estimation methods in quality management and continuous improvement: a reflection of the relationship. *International Journal of Service Science, Management, Engineering, and Technology (IJSSMET)*, 12(1), 38-61. DOI: 10.4018/IJSSMET.2021010103
  17. Haffar, M., Al-Karaghoul, W., Djebarni, R., & Gbadamosi, G. (2019). Organizational culture and TQM implementation: investigating the mediating influences of multidimensional employee readiness for change. *Total Quality Management & Business Excellence*, 30(11-12), 1367-1388. DOI: 10.1080/14783363.2017.1369352
  18. Haffar, M., Al-Hyari, K., Djebarni, R., Alnsour, J. A., Oster, F., Al-Shamali, A., & Alaya, A. (2023). The mediating effect of affective commitment to change in the readiness for change –TQM relationship. *Total Quality Management & Business Excellence*, 34(3-4), 326-344. DOI: 10.1080/14783363.2022.2054695
  19. Helfaya, A., Morris, R., & Aboud, A. (2023). Investigating the Factors That Determine the ESG Disclosure Practices in Europe. *Sustainability*, 15(6), 5508. DOI: 10.3390/su15065508
  20. Jain, K., & Tripathi, P. S. (2023). Mapping the environmental, social and governance literature: A bibliometric and content analysis. *Journal of Strategy and Management*. Vol. 16 No. 3, pp. 397-428 DOI: 10.1108/JSMA-05-2022-0092
  21. Jin, I. (2022). Systematic ESG risk and decision criteria for optimal portfolio selection. *The Journal of Portfolio Management*, 48(10), 206-225. doi: 10.3905/jpm.2022.1.344
  22. Junior, M. P., de Lima, A., & Stoco, W. H. (2020). Search for Continuous Improvement in Productive Process: Applications of Quality Management Tools. *Brazilian Journal of Development*, 6(3), 10621-10634. DOI: 10.34117/bjdv6n3-078

23. Kitchenham, B., & Charters, S. (2007) Guidelines for Performing Systematic Literature Reviews in Software Engineering, Technical Report EBSE 2007-001, Keele University and Durham University Joint Report. Parsif. Al. About Parsifal - Learn more about the project and our goals. Access: <https://parsif.al>. Available in: August 02, 2023.
24. Komarnicka, A., & Komarnicki, M. (2022). Challenges in the EU banking sector as exemplified by Poland given legislative changes related to climate crisis prevention. *Energies*, 15(3), 699. DOI:
25. Kumar, V., Mittal, A., Verma, P., & Antony, J. (2023). Mapping the TQM implementation approaches and their impact on realizing leadership in the Indian tire manufacturing industry. *The TQM Journal*. DOI: 10.1108/TQM-08-2022-0258
26. Lim, W. M., Ciasullo, M. V., Douglas, A., & Kumar, S. (2022). Environmental social governance (ESG) and total quality management (TQM): a multi-study meta-systematic review. *Total Quality Management & Business Excellence*, 1-23. DOI: 10.1080/14783363.2022.2048952
27. Maganga, D. P., & Taifa, I. W. (2022). Quality 4.0 conceptualization: an emerging quality management concept for manufacturing industries. *The TQM Journal*, 35(2), 389-413. DOI: 10.1108/TQM-11-2021-0328
28. Nielsen, H., & Villadsen, K. (2023). The ESG Discourse Is Neither Timeless Nor Stable: How Danish Companies 'Tactically ' Embrace ESG Concepts. *Sustainability*, 15(3), 2766. DOI: 10.3390/su15032766
29. Rounok, N., Qian, A., & Alam, M. A. (2023). The Effects of ESG issues on investment decision through corporate reputation: Individual investors' perspective. *International Journal of Research in Business and Social Science (2147-4478)*, 12(2), 73-88. DOI: 10.20525/jobs.v12i2.2354
30. Sardanelli, D., Bittucci, L., Mirone, F., & Marzioni, S. (2022). An integrative framework for supply chain rating: from financial-based to ESG-based rating models. *Total Quality Management & Business Excellence*, 1-20. DOI: 10.1080/14783363.2022.2069557
31. Sciarelli, M., Cosimato, S., Landi, G., & Iandolo, F. (2021). Socially responsible investment strategies for the transition towards sustainable development: The importance of integrating and communicating ESG. *The TQM Journal*, 33(7), 39-56. DOI: 10.1108/TQM-08-2020-0180
32. Siripipatthanakul, S., Limna, P., Sitthipon, T., Jaipong, P., Siripipattanakul, S., & Sriboonruang, P. (2022). Total quality management for modern organizations in the digital era. *Advance Knowledge for Executives*, 1(1), 1-9. DOI: <https://ssrn.com/abstract=4171649>
33. Tamim, S. A., Mahmood, F. A., & Anssari, M. A. A. (2023). The possibility of using the kaizen method (continuous improvement) to improve quality and reduce costs: An application research on Kufa cement factory. *The Journal of Modern Project Management*, 11(1), 24-41. DOI: 10.19255/JMPM03103

34. Tezel, A., Koskela, L., & Tzortzopoulos, P. (2023). Implementation of continuous improvement cells: a case study from the civil infrastructure sector in the UK. *Production Planning & Control*, 34(1), 68-90. DOI: 10.1080/09537287.2021.1885794
35. Vihari, N. S., Yadav, M., & Panda, T. K. (2022). Impact of soft TQM practices on employee work role performance: role of innovative work behavior and initiative climate. *The TQM Journal*, 34(1), 160-177. DOI: 10.1108/TQM-03-2021-0092
36. Zighan, S., & Ruel, S. (2023). SMEs' resilience from continuous improvement lenses. *Journal of Entrepreneurship in Emerging Economies*, 15(2), 233-253. DOI: 10.1108/JEEE-06-2021-0235
37. Ziolo, M., Bak, I., Filipiak, B. Z., & Spoz, A. (2022). In search of a financial model for a sustainable economy. *Technological and Economic Development of Economy*, 28(4), 920-947. DOI: 10.3846/tede.2022.16632