





Quality and Human Capital as Drivers of Business Competitiveness: A Systematic Literature

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Abstract.

In a global economic context characterized by uncertainty and increasing competition, companies are seeking to strengthen their competitiveness by mobilizing sustainable strategic levers. This article analyzes the interrelated role of quality and human capital in business competitiveness through a systematic review of the literature based on the Scopus and Web of Science databases between 2010 and 2024. Fifteen articles were selected based on rigorous inclusion criteria and analyzed according to the PRISMA protocol.

The results show that quality, when supported by human capital, becomes a factor in competitiveness. Quality certification alone is not enough to create a competitive advantage, unless it is combined with strategic human capital management. Human capital, defined as the sum of skills and knowledge that can be mobilized, acts as the linchpin of dynamic and responsive quality, especially in turbulent contexts. The review also teaches us that context (regional or sectoral) acts as a moderator between quality practices and competitiveness. An integrated, innovative strategy based on employee engagement and quality management enables companies to achieve a sustainable competitive advantage.

Finally, the interaction between quality and human capital is a key condition for modern competitiveness.

Keywords: Quality, Human Capital, Competitiveness.

1 Introduction

In an economic climate characterized by uncertainty and competition, companies are using sustainable levers to strengthen their competitiveness. Among these, quality and the development of human capital are key considerations for companies currently operating on different continents. These two aspects are now pillars of two concepts: organizational performance and innovation (Yousaf, 2024). Their synergy is a fundamental strategic driver for meeting the challenges of the globalized market.

Quality is a polysemic word that is difficult to evaluate. For ISO (2015), quality is the ability of an organization to meet the expressed, unexpressed, and poorly expressed needs of customers and stakeholders.

Quality is no longer limited to product or service compliance. It has become a lever for differentiation and customer satisfaction. When supported by competent and committed staff, it generates a dynamic of value creation (Gallego & Gutiérrez Ramírez, 2023). Consequently, the integration of quality into a company's internal processes is closely linked to the skills, ongoing training, and motivation of its employees (Samad, 2020). People become a major factor in perceived quality.

From the outset, quality was focused on the product or service (Whale, 2003). But as quality has evolved from quality control and quality assurance to total quality, human capital has become a compass for the success of a quality approach (ISO, 2015).

Human capital, defined as the sum of individuals' skills, know-how, and attitudes, is directly linked to adaptability, productivity, and innovation. In the context of a quality approach, companies that invest in their human capital are in a better position to perform well and therefore have an impact on competitiveness (Aljuboori et al., 2022). It is by combining quality and skills that companies can respond more effectively to economic conditions (Dwikat et al., 2023).

Several studies show that companies certified to the ISO 9001 standard and with valued human capital are more likely to be competitive than those that fail to achieve this dual differential (Yousaf, 2024). At the same level, human capital is likely to contribute to the competitiveness of companies as well as the state of the organizational environment in which it finds itself (Li et al., 2015). This means that quality is just a standard without human implementation by staff.

Despite the abundance of research on quality, human capital, and organizational performance, few studies explicitly address the relationship between quality, human capital, and competitiveness as a systemic integrative model. While some research shows that quality and performance are linked, others show that human capital contributes to innovation or performance and competitiveness, very few of them link these three dimensions in consolidated theoretical models and used at the empirical level (Gallego & Gutiérrez Ramírez, 2023; Islam et al., 2016; Samad, 2020; Chemmanur et al., 2019; Ruiz et al., 2018). This theoretical gap calls for an analysis of how quality and human capital can be levers for business competitiveness.

To do so, it is appropriate to ask a question that we believe to be fundamental: How do quality management practices and human capital jointly contribute to sustainable business competitiveness? This question is all the more relevant in unstable and particularly competitive environments (Dwikat et al., 2023).

This study adopts an integrated perspective where quality management acts as an operational system and human capital as a strategic capability enabling competitive advantage.

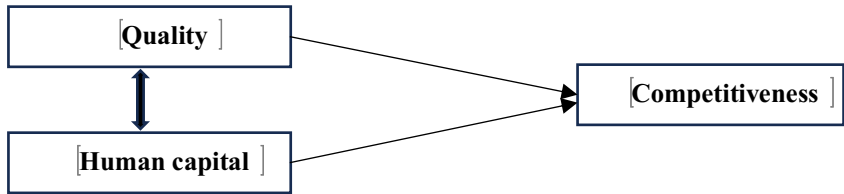


Fig. 1. Conceptual model

We need to find the relationship between quality and human capital, and then look for their impact on competitiveness. So, in our model (see fig. 1), quality and human capital are the independent variables, and competitiveness is the dependent variable. This means that a company's competitiveness depends on the quality of its human capital.

2 Methodology

We adopted a systematic review approach to examine the impact of quality and human capital on business competitiveness. This approach enabled us to analyze qualitative and quantitative studies on the most recent scientific work (Gallego & Gutiérrez Ramírez, 2023) and thus highlight trends, convergences, and gaps in the field of research on the subject.

The research was conducted in two major databases: Scopus and Web of Science, recognized for the quality and indexing of their sources. The research period covered is from 2010 to 2024, in order to understand the evolution of recent work related to the rise of the concepts of quality and strategic human capital management. The keywords used combine the expressions: "quality management," "human capital," "competitiveness," and "innovation."

Articles representative of the academic field and published in peer-reviewed journals specifically devoted to the links between quality, human capital, and competitiveness were included. Books, conference papers, technical reports, and descriptive reports without an appropriate conceptual framework were excluded. Fifteen articles were selected, including those by Yousaf (2024), Aljuboori et al. (2022), and Samad (2020) for their methodological and analytical relevance.

The articles were processed on a three-part basis: (1) careful reading of the abstracts and highlighting of the methodological sections, (2) extraction of the variables studied (quality, human capital, and competitiveness), and (3) thematic grouping of the results according to the types of approach used (quantitative, qualitative, or mixed) in light of the theoretical framework used to report on them. The objective was to identify the

theoretical and empirical factors explaining how quality and human capital contribute to competitiveness.

Finally, the rigorous approach of the systematic review was based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol, which contributed to the traceability of the various stages of selection, inclusion, and processing of articles (see fig. 2). This methodological approach also makes it possible to justify the reproducibility and reliability (Dwikat et al., 2023) of the results obtained, in accordance with international scientific standards.

Articles were included if they explicitly analyzed relationships between quality management practices, human capital, and competitiveness outcomes.

The strict inclusion criteria ensured analytical depth and conceptual coherence.

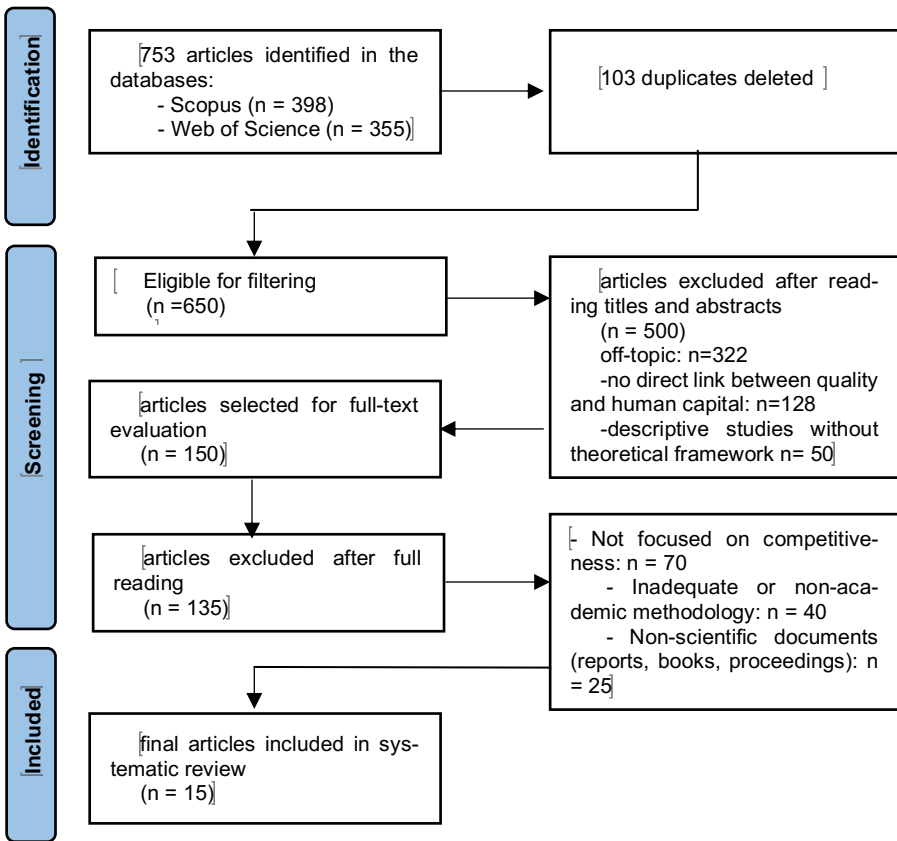


Fig. 2. PRISMA model

3 Results

Analysis of the articles reveals a consensus on the key role of human capital in improving quality. The results of Yousaf (2024) and Samad (2020) confirm that companies with qualified and motivated staff are more effective in implementing quality initiatives. Human capital thus acts as a catalyst for a culture of continuous improvement. The result is increased overall performance.

A quality approach, such as ISO 9001 or EFQM, has more impact when driven by human capital. Gallego & Gutiérrez Ramírez (2023) illustrate that quality alone is not enough to improve competitiveness unless it is accompanied by a structured employee engagement policy. The joint effect means greater differentiation and customer loyalty.

Various authors, such as Aljuboori et al. (2022) and Lu et al. (2021), highlight a positive correlation between human capital and innovation. Quality is therefore a strategic driver of innovation. Investment in training, tacit knowledge, and digital skills helps shape processes. It enables companies to develop sustainable competitive advantages.

The issue of context still arises in the relationship between quality, human capital, and competitiveness. Li et al. (2015) argue that the impact of personnel depends on the overall quality of human capital in regions. In regions with low skill endowments, the fact that quality policies rely heavily on internal human resource development amounts to strengthening their strategic effectiveness.

Dwikat et al. (2023) and Bugarčić & Ognjanović (2020) show that in unstable environments, resilience strategic flexibility, intelligence, and human excellence contributes to business competitiveness. The ability to anticipate and absorb change is one of the attributes of organizational agility, which relies heavily on human capital. The latter appears to be the vector of a reactive and evolving quality.

We can also hypothesize that this competitive advantage is not solely technical in nature but has its origins in systemic dynamics, according to Sisodia et al. (2021) on collective competence as a creator of value, as well as Bloom & Van Reenen (2007) on good managerial practices as key factors in productivity. Quality becomes fully effective when it is supported by human capital, as evidenced by the challenge of structured engagement.

4 Discussion

The results shown in this systematic review confirm that a company's competitiveness is the result of its ability to mobilize and integrate its staff into a comprehensive quality approach, in line with resource-based (RBV) and knowledge-based (KBV) approaches. Human capital is a strategic resource that is difficult to imitate, and quality becomes the lever for expressing this capital.

Therefore, when considered from a strategic perspective, quality cannot be limited to a technical vision; it is a means of identifying a source of competitive differentiation, which cannot, however, be implemented without trained, committed, and empowered

staff. This confirms that competitiveness resulting from quality initiatives fundamentally depends on their adoption by staff and the organization.

Consequently, the companies that are most successful in terms of competitiveness are not those that have obtained certification, but those that have made quality a collective project, integrating human capital into quality processes in order to ensure cross-, reduce malfunctions, and promote strategic responsiveness, thus justifying a human-centered approach to quality management.

Furthermore, the work of Gallego & Gutiérrez Ramírez (2023) emphasizes that quality truly becomes a lever for performance when it is integrated into an overall strategy. Companies must therefore avoid a siloed approach to quality policies and personnel. Strategic alignment between quality and human capital is an essential condition for achieving a sustainable competitive advantage.

The impact of human capital on innovation, observed in several articles (Aljuboori et al., 2022; Lu et al., 2021), highlights an essential causal chain: human skills stimulate innovation, which in turn enhances perceived quality and competitiveness. This circular dynamic suggests that valuing human capital is not only a lever for immediate competitiveness, but also a driver of long-term evolution.

The present discussion has therefore highlighted the value of an integrated model in which quality is no longer just an end in itself, but also a process driven by individuals. Human capital is not merely a means of applying standards, but is intended to be a driver of continuous, contextualized, and dynamic improvement. It is precisely in this perspective of interaction between competence, commitment, and quality management that the true competitiveness of contemporary companies lies.

The review supports an integrated competitiveness model where human capital enables the effective deployment of quality systems. Thanks to their skills and commitment, human capital contributes significantly to the effective implementation of quality initiatives, thereby fostering a culture of continuous improvement. This collaboration improves organizational performance and stimulates innovation, generating a lasting competitive advantage. Consequently, competitiveness results from a harmony between human excellence, innovation, and quality integrated into the heart of the corporate strategy.

The articles analyzed have certain shortcomings. The limited number of studies highlights the need for empirical testing across sectors and regions. Furthermore, few of them address the cross-effects between digitalization, artificial intelligence, and quality management through human capital, even though these are particularly important in technology-intensive sectors. The growing generalization of these new organizational realities could become a focus of research in the future.

5 Conclusion

This study has shown that quality and human capital, when mobilized separately, may be insufficient to guarantee the long-term competitiveness of companies. It is when they are strategically linked that they can be most effective. By bringing together skilled individuals around shared, evolving quality approaches, companies become more agile,

innovative, and efficient. This is particularly relevant in unstable and competitive environments where the ability to adapt relies heavily on staff. Organizations seeking sustainable competitiveness must align quality systems with human capital development strategies.

The results also highlight the importance of contextualizing the combined effects of human capital and quality in both territorial and sectoral terms. A staff-centered policy with quality objectives can help to better sustain productivity, customer satisfaction, and, by extension, brand image. Decision-makers are thus invited to think of the company as an integrated system where quality is driven by people rather than as a compartmentalized approach.

This research makes a unique contribution by empirically summarizing recent work on quality and human capital from a competitiveness perspective, while emphasizing the intermediary role played by staff and their innovation skills. It partially addresses the theoretical gap by offering a comprehensive interpretation of quality, human capital, and competitiveness. The PRISMA method improves the robustness of the results and provides empirical guidance for future research.

Finally, this work opens up research perspectives on the integration of digital issues, artificial intelligence, and organizational transformation in the link between quality and human capital, as these emerging dimensions become essential complementary levers in the quest for sustainable competitive advantage.

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