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Academic Research Papers

Academic Research Papers

Benefit Corporations and the B Movement: Mapping the Research Landscape in Sustainable Management

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Abstract

The increasing competitiveness of international markets, fueled by technological advancements and globalization, has prompted businesses to establish new objectives and frameworks to effectively manage change and evolve into corporations suited for the 21st century. A notable response to this paradigm shift is the emergence of the Benefit Corporations (BCs). This study aims to systematically review the existing literature surrounding this new paradigm represented by BCs, to understand the trajectory of research, highlight its challenges, and identify gaps for future exploration. To provide a comprehensive and critical overview of the available literature on BCs from a management perspective, we conducted a Systematic Literature Review (SLR) followed by a bibliometric analysis. From our search, we identified 151 studies and applied co-citation and bibliographic coupling analytical techniques utilizing VOSviewer. This critical analysis reveals the current state of knowledge and research on BCs, pinpointing their contributions to local development and community wellbeing. Additionally, the conceptual divergence regarding the scope of action for BCs, influenced by civil law and common law systems, introduces ambiguity in both research and professional practice. Future theoretical and empirical investigations are needed to inform directions that could significantly impact practitioners, academics, and standard setters alike.

Keywords – Benefit Corporations; B Corp; B Movement; Social Entrepreneurship; Purpose-oriented Organizations; Hybrid Managerial Model.

Paper type – Literature Review

Sommario

Le Società Benefit e il Movimento B: mappatura del panorama della ricerca nella gestione sostenibile. – La crescente competitività dei mercati internazionali, alimentata dai progressi tecnologici e dalla globalizzazione, ha spinto le aziende a stabilire nuovi obiettivi e strutture per gestire efficacemente il cambiamento ed evolversi in società adatte al XXI secolo. Una risposta notevole a questo cambiamento di paradigma è l'emergere delle Società Benefit (Benefit Corporations-BCs). Questo studio mira a rivedere sistematicamente la letteratura esistente che circonda tale nuovo paradigma rappresentato dalle BCs, per comprendere la traiettoria della ricerca, evidenziare le sue sfide e identificarne le lacune per l'esplorazione futura. Per fornire una panoramica completa e critica della letteratura disponibile sulle BCs da una prospettiva gestionale, abbiamo condotto una revisione strutturata della letteratura (Systematic Literature Review-SLR), seguita da un'analisi bibliometrica. Dalla nostra ricerca, abbiamo identificato 151 studi e applicato tecniche analitiche di co-citazione e accoppiamento bibliografico utilizzando VOSviewer. Questa analisi critica rivela lo stato attuale delle conoscenze e della ricerca sulle BCs, individuando il loro contributo allo sviluppo locale e al benessere della comunità. Inoltre, la divergenza concettuale riguardo all'ambito di azione delle BCs, influenzata dai sistemi di *civil law* e di *common law*, introduce ambiguità sia nella ricerca che nella pratica professionale. Sono necessarie future indagini teoriche ed empiriche per fornire indicazioni che potrebbero avere un impatto significativo sui professionisti, sugli accademici e sugli *standard setters.*

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1 Purpose

In recent decades, there has been a notable shift in the social, economic, and technological dynamics that have influenced the glocal landscape, leading to the emergence of innovative and often disruptive value propositions. This evolving context has fostered an increased scholarly focus on the value generated by private entities across various legal frameworks within the public sphere, highlighting the intricate relationships they cultivate at local, regional, national, and supranational levels (Meneguzzo, 2005). The development of purpose-driven cross-sectoral and transdisciplinary collaborations has become an essential strategy for formulating value propositions that can adeptly address contemporary market exigencies. In this regard, the emergence of hybrid organizational forms tailored to specific purposes has given rise to the conceptualization of a new sector of the economy, referred to as the "fourth sector" (Baudot, Dillard, & Pencle, 2020). This sector encompasses legal entities and economic actors positioned beyond the traditional dichotomy of public administration (first sector), for-profit enterprises (second sector), and non-profit organizations (third sector). The fourth sector is characterized by its integrated social and environmental objectives pursued through business methodologies, thereby facilitating cross-sector partnerships aimed at addressing pressing societal challenges (Haigh, Kennedy, & Walker, 2015). Businesses classified as purpose-oriented exemplify innovative managerial models focused on virtuous business conduct (Brunetti, 2010) through the lens of social entrepreneurship (Baron, 2007; Brooks, 2008). The significance of these organizations is underscored by the recent dynamics observed within communities, which parallel the entrepreneurial trends across numerous European and international contexts. Recent scholarly investigations have linked the conceptualization of social enterprises to local development initiatives and the implementation of welfare policies (Carrera, Meneguzzo, & Messina, 2008). This underscores an emerging imperative for enhancing community well-being through sustainable business models (Asgari Ghods, 2019). As these purpose-oriented organizations generate substantial social impact within their communities, their role as critical drivers in addressing complex social dynamics has been acknowledged by both scholars and practitioners (Block, Hirschmann, & Fisch, 2021; Cheah & Ho, 2019; Ge, Xu, & Pellegrini, 2019). A notable managerial model within this hybrid-purpose organizational landscape is represented by Certified Benefit Corporations (B Corps), which attain certification by adhering to rigorous standards of verified performance, accountability, and transparency across multiple dimensions. Specifically, B Corps engage in legal commitments that align their governance frameworks with the diverse needs of stakeholders involved in their value creation processes and maintain significant levels of social and environmental performance over time. Additionally, they commit to transparency by publicly disclosing their performance metrics related to

consumers, communities, and suppliers. B Corps serve as a subset of for-profit enterprises that achieve certification validating their commitment to social, economic, and environmental sustainability (Harjoto, Laksmana, & Yang, 2019; Tabares, 2021). The certifying entity, B Lab, is a non-profit organization leveraging the power of business to address pressing social and environmental concerns (Honeyman & Jana, 2019). Importantly, the B Corp certification process is accessible to businesses of all sizes and from various countries (Honeyman, 2014). The assessment of business impact is conducted through the B Impact Assessment (BIA), which comprises 150 questions categorized into five areas of impact: Governance, Employees, Community, Environment, and Customers (Gazzola, Grechi, Ossola, & Pavione, 2019). The influence of B Lab has facilitated the emergence of a new paradigm for conducting business globally, first manifesting in the United States and Canada in 2006 (Honeyman, 2014) and subsequently expanding into Europe, starting with Italy. The so-called "B Movement" encompasses all enterprises that pursue purpose-driven objectives, including B Corps and Benefit Corporations (BC) that adhere to specific legal frameworks. It is essential to note that while BCs provide a legal structure in designated jurisdictions that enables firms to balance financial and non-financial interests in decision-making processes, they are not mandated to obtain B Corp certification. Moreover, the certification's applicability is independent of the availability of BC legal structures, although both can be categorized as components of the broader B Movement. The legal framework governing Benefit Corporations (BCs) is confined to specific jurisdictions, whereas B Corp certification can be obtained independently of a business's geographical location through the completion of a selection process utilizing the B Lab system. Notably, both BCs and certified B Corporations are recognized as entities committed to advancing positive environmental and social outcomes, transcending the singular focus on profit (Nigri, Del Baldo, & Agulini, 2020a).

Within this context, purpose-driven enterprises represent an increasingly significant area of inquiry in both academic research and managerial practice (Diez-Busto, Sanchez-Ruiz, & Fernandez-Laviada, 2021), as they prioritize contributions to societal well-being over the traditional objective of maximizing shareholder profit (Carbo, Langella, Dao, & Haase, 2014; Mayer, 2021; Muñoz, Cacciotti, & Cohen, 2018). These enterprises have forged strong associations with sustainability (Robinson & Wood, 2018). The concept of sustainable development seeks to address present needs without compromising the ability of future generations to meet their own, while also advocating for equitable resource distribution on a global scale (Soini & Birkeland, 2014). Purpose-driven businesses embed sustainability into every facet of their operations, fostering a strong organizational identity and sense of mission while simultaneously generating meaningful social and economic value (Sternad, Kennelly, & Bradley, 2017).

Recent scholarly attention, alongside that from policymakers globally, has illuminated an emerging field of study concerning the B movement. Scholars have begun to investigate innovations in business models pertinent to this movement (Stubbs, 2019; Bringas-Fernández, López-Gutiérrez, & Pérez, 2024; Occhipinti, 2023), specifically analyzing their contributions to a circular economy (Poponi, Colantoni, Cividino, & Mosconi, 2019) and their alignment with the Sustainable Development Goals (SDGs) and broader sustainability objectives (Kirst, Borchardt, de Carvalho, & Pereira, 2021). In spite of this burgeoning interest in the managerial paradigm associated with BCs and B Corps, there remains a lack of definitional consensus regarding its conceptual framework. Furthermore, a systematic literature review delineating the existing scholarship on Benefit Corporations is presently absent. Against this backdrop, the intent of the current research is to enrich the scientific discourse regarding the role of BCs within the communities they serve. To this end, a methodological approach centered on an exhaustive review of academic literature addressing the concept has been adopted. This investigation employs a Systematic Literature Review (SLR) procedure to identify and critically engage with relevant studies, thereby mapping the current state of knowledge and addressing the following research sub-questions:

RQ1: What is the evolution of BCs interest in the scientific literature?

RQ2: What are the main research streams in BCs literature and their key-search clusters?

RQ3: What is the state of the art in research regarding authors, countries, and organizations?

To answer the above RQs, the authors used a mixed approach combining SLR and bibliometrics. This paper is divided into four parts. Part 2 presents the research method used and the literature search. Part 3 contains the descriptive analysis using SLR, followed by the bibliometric analysis. In Part 4, conclusions are proposed, distributed in implications for scholars and practitioners, followed by future research directions.

2 Research method

This research adopts a mixed-methods approach, as delineated by Creswell (2021). Mixed-method research embodies a flexible and adaptive conceptual framework (Dawadi, Shrestha, & Giri, 2021) that integrates quantitative and qualitative methodologies to address multifaceted phenomena (Taherdoost, 2022). Notably, this method is regarded as being relatively nascent within the field of managerial studies (Harrison, Reilly, & Creswell, 2020). In response to the previously articulated research

questions, a systematic literature review (SLR) methodological approach was adopted to comprehensively evaluate the existing scientific discourse on business contexts (BCs) from a managerial lens. The authors implemented the SLR as a "replicable, scientific and transparent process that aims to minimize bias through exhaustive literature searches of published and unpublished studies, while providing an audit trail of the reviewer's decisions, procedures and conclusions" (Tranfield, Denyer, & Smart, 2003, p. 207). By mitigating potential selection bias (Petticrew & Roberts, 2008), this framework endeavors to systematize key concepts, yielding a holistic understanding of the phenomenon under investigation. The SLR methodology aligns with a structured process involving identification, selection, and critical evaluation of the literature according to systematic reasoning (Gough, Oliver, & Thomas, 2017). The outcomes are articulated in a coherent narrative that synthesizes the findings. The SLR indeed offers a systematic methodology for synthesis, utilizing a rigorously defined process (Kraus, Breier, & Dasí-Rodríguez, 2020; Sauer & Seuring, 2023) to identify, evaluate, and interpret the entirety of the extant literature (Cillo, Petruzzelli, Ardito, & Del Giudice, 2019).

A meticulous analysis of the SCOPUS database was conducted, recognized for its advanced capabilities in executing research queries effectively (Al-Zubidy & Carver, 2019). SCOPUS, noted for indexing a diverse array of publications from numerous publishers including ACM, IEEE, Springer, and Elsevier, ensures a high standard of quality through independent committee assessments (Krüger, Lausberger, von Nostitz-Wallwitz, Saake, & Leich, 2020). The selection of this database is tied to its prominence within the referenced scientific community. According to Abrizah, Zainab, Kiran, and Raj (2013), SCOPUS, alongside Web of Science (WoS), is among the most frequently utilized citation databases for evaluating journal productivity and citation metrics. The authors restricted their research to the SCOPUS database, as WoS indexes a narrower range of journals in the social sciences (Mongeon & Paul-Hus, 2016), thus exhibiting limited subject coverage compared to SCOPUS.

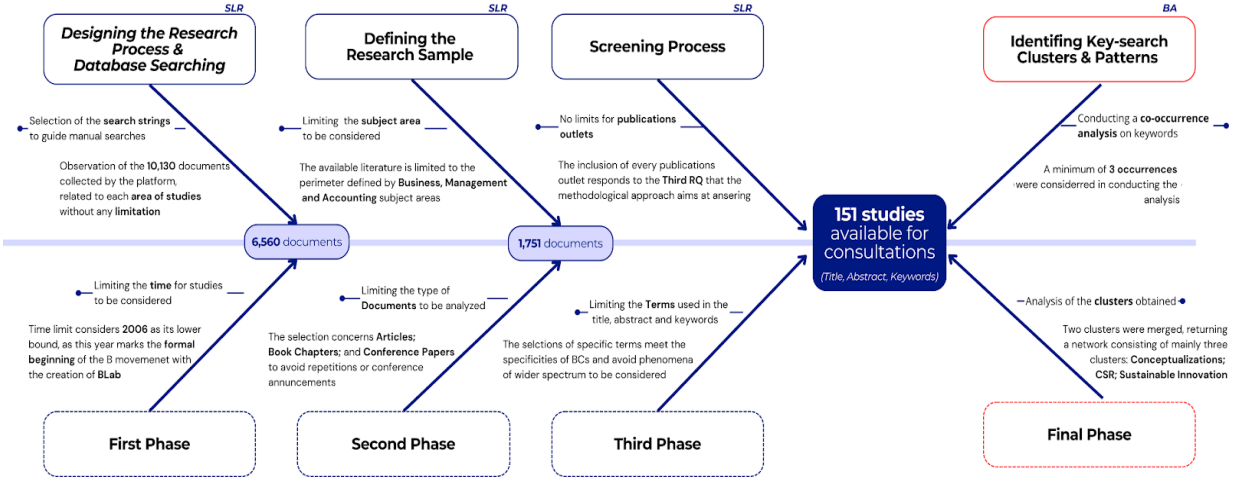
The SLR conducted adheres to the guidelines established by Alvesson and Deetz (2000) and Massaro, Dumay, and Guthrie (2016). The authors structured their analysis around three sub-questions to facilitate the development of robust and defensible research agendas. The sub-questions under investigation include: (a) the evolution of BC studies from a managerial viewpoint; (b) key search clusters; and (c) the geographical distribution of knowledge production concerning authors, organizations, and countries. In addressing the second and third research questions, bibliometric analysis was employed to assess the impact, interconnectedness, and evolution of management research (Donthu, Kumar, Mukherjee, Pandey, & Lim, 2021). Grounded in quantitative data analysis (Lawani, 1981), bibliometric analysis enhances the understanding of research networks through visual representation at an aggregate level (Van Eck & Waltman, 2017). This study leverages bibliometric

analysis via VOSviewer, recognized as one of the most prominent software tools for domain visualization (Arruda, Silva, Lessa, Proença Jr, & Bartholo, 2022).

2.1 Literature search

To address the aforementioned research questions, a systematic review was conducted utilizing the SCOPUS database. The citations obtained were meticulously evaluated against pre-defined inclusion and exclusion criteria, thereby ensuring an unbiased and balanced review (Briner, Denyer, & Rousseau, 2009). The search strings employed to guide the manual search process, as delineated by Kitchenham (2004), included the terms "benefit" and "corporation." The research process is explained as follows (Figure 1).

Figure 1 – Research process



Source: Authors' elaboration

Initially, the SCOPUS platform yielded a total of 10,130 documents indexed under the specified keywords, dating from the earliest year in which the platform began to compile scientific contributions related to Benefit Corporations (BC). This figure represents the comprehensive total of studies, articles, conference proceedings, and other scholarly outputs cataloged by the database.

The first criterion for exclusion pertained to the temporal scope of the publications. The chronological parameter set for this investigation commenced in 2006, a pivotal year marked by the establishment of the B Lab, which signals the formal inception of the B Movement. In concurrence with

the notions presented by Kirst, Borchardt, de Carvalho, and Pereira (2021), it was deemed insubstantial to consider publications predating this period for a thorough exploration of the B Movement. Upon applying this temporal filter, the sample size was reduced to 6,560 documents.

Subsequently, the analysis was confined to the subject areas of Business, Management, and Accounting. In alignment with the recommendations of Pham, Paillé, and Halilem (2019), books were excluded from consideration. The focus was directed toward articles, book chapters, and conference papers, effectively mitigating the possibility of repetition or the inclusion of conference announcements. This filtering process distilled the sample to 1,751 documents.

No filters or exclusion criteria were imposed regarding publication outlets, but specific terminologies employed in titles, abstracts, and keywords were meticulously scrutinized to align with the distinctive characteristics of Benefit Corporations. This strategic narrowing of the keywords to terms intrinsically linked to the legal framework, the affiliation with the B Movement, or the possession of B Lab certification culminated in a final count of 151 documents available for consultation.

3 Results and discussion

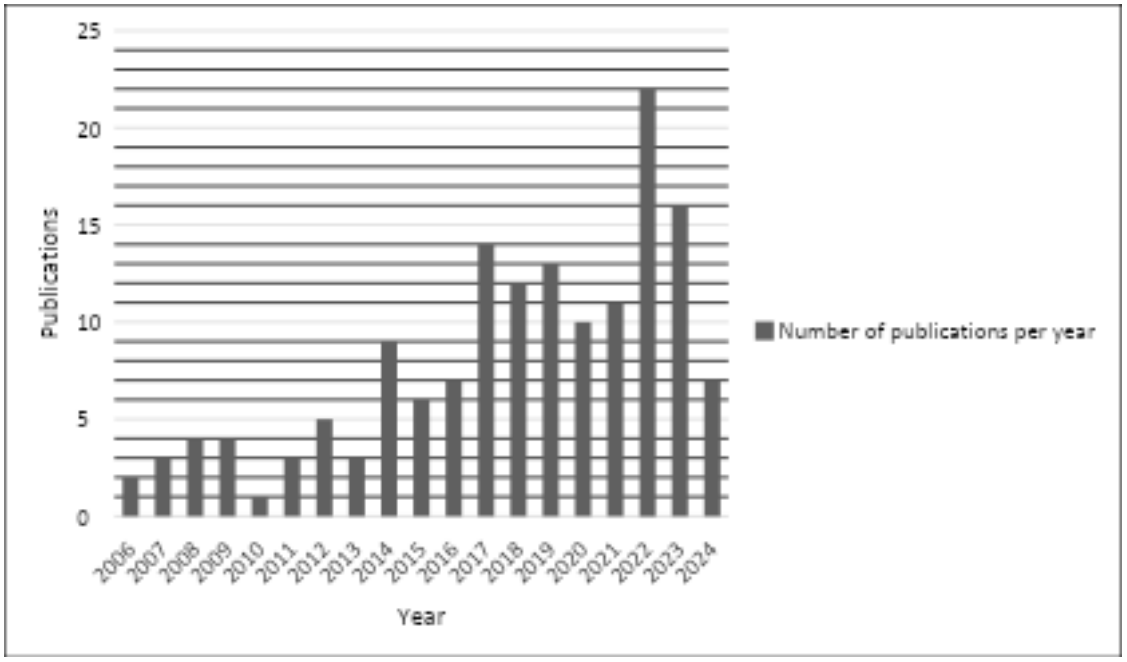
The results of the structured literature review combined with the bibliometric analysis reveal the breadth and heterogeneity of the scientific communities that have been involved and are dealing with BCs. The globality of the subject and the interdisciplinary nature of the theme are such as providing a wide range of models and methodologies through which to verticalize the observed phenomenon. To photograph the phenomenon in its entirety, tracing its evolution from the moment it was born to the present, the author has chosen to perform a longitudinal analysis in the last years via SCOPUS. The analysis carried out responds efficiently to the first research question and exploits as follows.

3.1 What is the evolution of BCs interest in the scientific literature?

This study aims to illuminate the evolution of scholarly attention toward managerial literature focused on Business Configurations (BCs), particularly since the establishment of the B Lab in 2006, which signifies the inception of the so-called B Movement. This inquiry examines the trajectory of interest demonstrated by the academic community toward the nascent paradigm of BCs. As illustrated in Figure 2, it is during the first decade following the establishment of the B Lab that a notable shift in scholarly engagement is evident. The initial body of research, which emerged during the period from

2006 to 2016 in conjunction with the advent of this innovative managerial model, has delineated the internal parameters within which the emerging paradigm of BCs can be situated. Specifically, an average of 3,8 publications were produced in the first five years after the B Lab's inception, followed by an increase to an average of 6 publications in the subsequent five-year period. This trend highlights that BCs constitute an evolving paradigm within the scientific literature, characterized by a rapid growth in scholarly discourse.

Figure 2 – Publications trends on BCs studies



Source: Authors' elaboration

Beginning in 2017, approximately a decade following the advent of experimentation with a novel economic entity identified as the "fourth sector", the annual average of scholarly publications in scientific journals from 2017 to 2021 has been calculated at 12. This period marks a notable increase in interest within the scientific community, with a reported growth of 31,6% compared to the initial years of the emergence of BCs. The conceptualization of BCs as purpose-driven organizations (Brunetti, 2010) has evolved, with their initial framing within social entrepreneurship theories (Baron, 2007; Brooks, 2008; Carrera, Meneguzzo, & Messina, 2008) serving as a foundation for understanding their role as catalysts for local development and contributors to welfare policy initiatives.

This augmented scholarly attention has further delineated the investigative domains surrounding BCs, particularly with regard to the dimensions of corporate social responsibility inherent in these innovative hybrid organizations (André, 2012; Hiller, 2013; Fassin, 2012; Kahraman Akdoğu, 2017). These investigations will be further elaborated in the subsequent section.

3.2 What are the main research streams in BCs literature and their key-search clusters?

The realm of Benefit Corporations (BCs) has emerged as a significant field of study, particularly within the last decade. This phenomenon encompasses a constellation of figures and entities that advocate for responsible entrepreneurship, fostering social values within the communities they serve, and implementing various empowerment mechanisms that underpin this movement. The dynamics of the B Movement stem from an interplay between developmental and innovative processes aimed at achieving competitive advantage. The context in which the B Movement operates is characterized by an entrepreneurial orientation toward economic activities, underscored by a value framework that emphasizes principles of solidarity and citizenship. Firms that participate in the B Movement, irrespective of their sector or size, have committed to being catalysts for societal transformation, addressing a spectrum of social, economic, and environmental challenges. Central to the B Movement's mission is the redefinition of business success, wherein corporate profitability is juxtaposed with social value creation – manifesting as social good – and a distinct identity that aims to forge a new paradigm of success for businesses that simultaneously pursue profit and global benefit (Munck, Tomiotto, Santana, Borges, & Corbett, 2018). Moreover, the legal convergence of both public and private hybrid organizations, characterized by actors who exhibit strong commitments to social and economic objectives, is a critical predictor of the B Movement's success (Rankin, 2018). In an effort to elucidate key research clusters and patterns within the existing scholarly discourse surrounding the emerging paradigm of BCs, this study employs a co-occurrence analysis of keywords through the utilization of VOSviewer. This bibliometric methodology identifies keywords as fundamental units of analysis, with a threshold criterion of a minimum of three occurrences for inclusion. As delineated in Table 1, the keywords that exhibit the highest frequency of co-occurrence illuminate the prominence of specific nodes, thereby indicating their salience within the body of literature. A total of 41 out of 661 keywords satisfied the criteria for this co-occurrence analysis. The following table (Table 1) presents a selection of the top ten keywords with the greatest occurrence.

Table 1 – Criteria for the analysis of co-occurrence.
Insights on the first ten keywords with greater weight from VOSviewer

Keywords	Occurrence	Keywords	Occurrence
Corporate Social Responsability	34	Stakeholder	17
Benefit Corporation	29	Sustainable development	10
Corporate governance	18	Hybrid organization	8
Social enterprises	22	Sustainability performance	10
Sustainability	13	Institutional theory	35

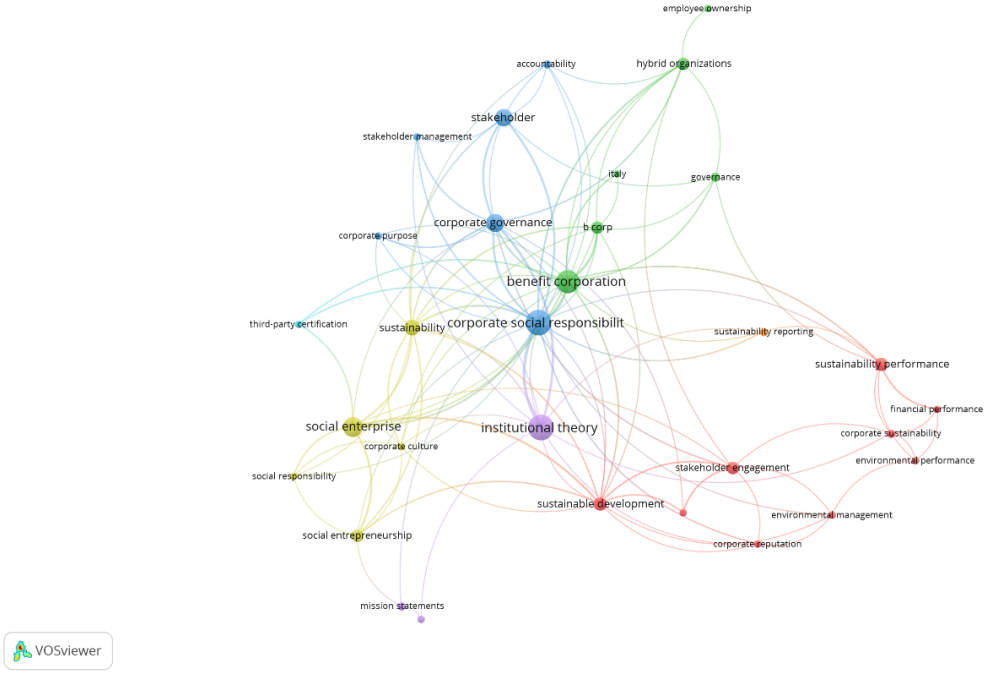
Source: Authors' elaboration

An initial examination of the first ten keywords exhibiting the most substantial frequency underscores the foundational aspects of the scientific literature on BCs. As delineated in Table 1, the prominence of the social dimension in the conceptualization of BCs is particularly noteworthy, as it is framed through the lenses of corporate social responsibility and social enterprises. This social dimension reveals an intrinsic connection to sustainability, sustainable development, and crucially, the capacity to perpetuate economic initiatives over time, often referred to as sustainability performance.

The various stakeholders involved in the processes of value creation and co-creation, whether internal or external to the BC value proposition, undoubtedly play a pivotal role that has garnered significant attention within the scientific discourse. Moreover, preliminary findings regarding co-occurrence patterns indicate that existing literature predominantly engages with BC studies through a theoretical framework, notably institutional theory. This observation effectively addresses the necessity to comprehend the adoption of an evolving managerial model and/or the transformation of such models towards hybrid configurations that encompass multiple objectives, while scrutinizing both endogenous and exogenous variables.

The results obtained from the co-occurrence analysis conducted via VOSviewer reveal a network comprising five distinct clusters (Figure 3). Due to the conceptual overlap among these dimensions, the authors opted to amalgamate two clusters, thereby identifying a more streamlined network characterized by three principal research strands: (1) Conceptualization, which pertains to the hybrid profile of the emerging managerial model and situates the B Movement within the context of social entrepreneurship phenomena, denoted by green and yellow colors; (2) the corporate social responsibility dimension, represented in blue; and (3) sustainable innovation and the integral role of stakeholders in generating competitive value assets, distinguished by red.

Figure 3 – Co-occurrence analysis on BCs studies using VOSviewer



Source: Authors' elaboration

3.2.1 Conceptualizing BCs

The transition from an initial framework of five clusters to a more streamlined configuration comprising three research strands was informed by the identification of conceptual overlaps through co-occurrence analysis conducted via VOSviewer. While the five clusters were characterized by distinct keyword groupings, the emergence of significant thematic intersections warranted methodological refinement towards broader, more cohesive research strands. This approach is consistent with bibliometric best practices, which advocate for the integration of thematically related clusters to enhance the clarity and interpretability of research findings (Van Eck & Waltman, 2017).

This choice is then informed by three main factors, namely (I) Co-Occurrence Analysis; (II) Conceptual Alignment; and (III) Research Relevance. Firstly, (I) a thorough mapping of keywords frequency and interconnectivity revealed underlying thematic similarities across the original clusters. Notably, (II) two clusters displayed substantial thematic congruence in areas pertaining to stakeholders engagement and sustainability innovation, prompting their subsequent integration. (III) The resultant three strands encapsulate dominant theoretical paradigms, specifically hybrid organizational models,

corporate social responsibility (CSR), and sustainable innovation. By consolidating the initial clusters into these three substantive strands, the resultant research framework offers a more robust categorization that enhances accessibility for scholars and practitioners alike.

Table 2 – The main research strands in sustainable management SLR. Evidences from VOSviewer

Research strand	Key themes	Representative keywords (VOSviewer)	Main research gaps
Conceptualization of BCs	Hybrid managerial models; Social entrepreneurship; Fourth sector development	Benefit Corporation; Hybrid organization; Institutional theory	Need for deeper empirical validation of BC hybrid models across different economic contexts
Corporate Social Responsibility (CSR) dimension	Stakeholder engagement; Accountability; Ethics in business	Corporate Social Responsibility; Stakeholder; Governance	Need for deeper studies on CSR commitments and impact on corporate performance
Sustainable innovation	Circular economy; Sustainable business models; Impact measurement	Sustainable development; Sustainability performance; Social enterprises	Need for deeper research on scalability of sustainable innovations in BCs

Source: Authors' elaboration

A summary table is provided to improve readability and facilitate the identification of key findings within these strands, as outlined in Table 2. This table serves to encapsulate the principal research themes, providing a structured overview of the evolution of the research landscape within the realm of business and corporate studies. Subsequent sections will further elucidate these developments.

In contemporary socio-economic systems, Benefit Corporations (BCs) emerge as a response to the imperative of reconciling dominant and alternative profit frameworks (Kopaneva, 2022). Over the past decade, a new sectoral paradigm has developed, wherein diverse actors are simultaneously called to compete and collaborate across various institutional levels to achieve common objectives. This construct, often referred to as the "fourth sector," signifies a juncture where profit-maximizing goals typical of traditional market-oriented enterprises engage in dialogue with the necessity of fostering positive societal impacts – a responsibility traditionally associated with public institutions. Within this evolving context, public welfare services are transitioning from a subsidiary role alongside private sector initiatives, replete with associated public resources, thereby capitalizing on corporate governance

and accountability frameworks aimed at community well-being (Baudot, Dillard, & Pencle, 2020). This hybridization caters to an emerging market demand for the management of shared value and sustainable innovation.

The spectrum of hybrid managerial types is vast and heterogeneous. Given that the innovative managerial models represented by BCs pursue pluralistic objectives spanning multiple sectors, these entities can be viewed as embodiments of hybrid business models, reflecting a pluralistic approach to business operations. In this regard, BCs articulate their mission in relation to social components that are integral to their operational activities (Sych & Pasinovych, 2021). Like other hybrid models, BCs reinforce their altruistic vision of achieving a positive impact on both the environment and civil society as core elements of their corporate purpose.

Numerous scholars have examined the transformative potential of BCs in challenging established business norms through the innovative conceptualization of their societal roles. In this context, hybrid organizations that reimagine traditional business models stand to benefit from the synergies generated by previously antagonistic assets, notwithstanding the arduous, time-consuming, costly, and inherently risky nature of such a transformation (Alberti & Varon Garrido, 2017). The incorporation of social responsibility into corporate missions reflects an ethical dimension that underpins business motivations (Coate & Mitschow, 2015). As articulated by Ventura (2022), the mechanisms facilitated by commercially viable business models that foster positive social and environmental change represent an additional manifestation of "firm altruism" (Ventura, 2022). Originating within a capitalistic framework, particularly in the United States, BCs are viewed as an ethical advancement towards empowering socially committed commercial entities (Hiller, 2013). The responsibilities associated with a corporate image that seeks to promote the common good necessitate a structured framework that identifies key levers for the development of valuable assets and directs organizational efforts. Drawing on Kurland's findings, it is posited that BCs require both the presence of external mechanisms and a robust internal commitment to self-awareness, learning, and measurement for the effective delivery of public goods. Consequently, the differential advantage stemming from internal levers is informed by an adaptive learning culture, bolstered by collaborative top-down and bottom-up initiatives that delineate the operational scope (Kurland, 2017). The authors elucidate the global phenomena to which BCs are intricately linked. Specifically, the B Movement signifies a paradigm shift wherein businesses strive to harmonize financial returns with environmental, social, and governance (ESG) performance. This transition reflects a departure from the traditional shareholder primacy model towards a framework of stakeholder centricity (Chen & Marquis, 2022). Since the inception of Benefit Corporations in 2006, this movement has enveloped various business modalities and hybrid managerial forms aimed at purpose-driven objectives. In addition to BCs, which adhere to specific legislative frameworks, certified

B Corporations emerge as integral components of the B Movement, embodying businesses that attain certification for their commitment to social purpose. While these two constructs share similarities and frequently overlap, it is imperative to note that BCs are not mandated to secure B Corp certification, and the certification process is not intrinsically linked to the legal framework governing Benefit Corporations. A comprehensive examination of the scientific literature reveals that BCs are also associated with the broader phenomenon of social entrepreneurship. From this perspective, businesses actively engage in (a) exploring new avenues for competitive advantage and long-term sustainability; (b) fostering expansive social networks to augment participatory strength; and (c) pledging to effectuate meaningful change in society in a deliberate manner, typically without altering their primary objective of generating income or profit for their owners. Given these contextual dynamics, it is unsurprising that nations have rapidly moved to legitimize this new economic entity. In the United States, the introduction of the social enterprise legal form in 2010 has resulted in over half of the state governments conferring corporation status that enables firms to incorporate social and environmental objectives as legitimate facets of their operations (Cetindamar, 2015). In Europe, policymakers are gradually cultivating an awareness of the distinction between social enterprises and Benefit Corporations. Italy serves as a case study, having been the first European nation to legislate on Benefit Corporations, thus endowing them with legal recognition and dignity. A holistic interpretation of social entrepreneurship underscores the intrinsic connections among BCs, social enterprises, and innovative startups with social missions, all of which predominantly pursue social goals and community well-being (Riolfo, 2020).

A systematic analysis of the existing literature on the conceptualization of BCs elucidates the leverage effect associated with the objectives that these entities aspire to achieve, alongside the potential outcomes they may generate. The disruptive capacity to cultivate a new class of corporations that can positively transform society represents a shared responsibility among entrepreneurs, public institutions, and citizens, thereby engendering a novel system of supply and demand, the fourth sector.

3.2.2 The Corporate Social Responsibility dimension

The systematic analysis of the literature surrounding key clusters, that define knowledge production in relation to BCs, reveals the centrality of a fundamental paradigm: corporate social responsibility (CSR). This analysis elucidates the hybrid profile of the managerial model represented by these novel economic entities and situates them within the global phenomena they reflect. It is essential to further clarify the predominant dimensions that delineate the mechanisms of value creation at the corporate level. Since the inception of published studies concerning BCs approximately a decade ago, these

innovative hybrid structures have been contextualized within the CSR domain (André, 2012; Hiller, 2013).

Moreover, the delineation between BCs, B Corps, and social enterprises, varying according to European and American perspectives, underscores the systematic literature review's identification of a homogeneous confluence of companies characterized by a pluralistic set of objectives within the CSR paradigm. Specifically, within the purview of the B Movement, B Corps exemplifies firms that embody a hybrid purpose and a sustainable business model that integrates profit generation with social impact (Cantele, Leardini, & Piubello Orsini, 2023). Similarly, social enterprises possess the ability to incorporate corporate participation within their value proposition processes, suggesting that various types of corporations can leverage social enterprise operational mechanisms in pursuit of CSR objectives (Nicolopoulou & Karatas-Ozkan, 2009).

CSR has emerged as a response to the imperatives of sustainable development (Kahraman Akdoğu, 2017), embodying a systemic approach to business operations that emphasizes socially responsible components and environmental stewardship. Consequently, economic development cannot be extricated from the value assets that render corporate governance ethically accountable. This responsibility encompasses multiple dimensions pertinent to community advancement, including the safeguarding of human rights, the promotion of social causes, and the addressing of climate and environmental exigencies. Furthermore, a growing body of scholarly work posits that the formalization of BCs and B Corps reflects a significant evolution of the CSR concept (Riolfo, 2020; Gazzola, Amelio, Grechi, & Alleruzzo, 2022). Specifically, the competitive advantage associated with the positive image derived from affiliation with the B Movement enables both BCs and B Corps to differentiate themselves from competitors, not solely based on sector but also in terms of size (Gazzola, Amelio, Grechi, & Alleruzzo, 2022). Thus, by integrating traditional profit-driven objectives with one or more additional purposes aimed at common benefit, BCs can systematically assess and refine the impact they generate, thereby facilitating a transition toward an inclusive, equitable, and regenerative economic paradigm.

These prevailing conditions underscore the critical role of entrepreneurial orientation in the success of entrepreneurial ventures. Research indicates that managers in hybrid organizations adopt a broader accountability framework that extends beyond mere fiduciary responsibilities to shareholders (Baudot, Dillard, & Pencle, 2022). This accountability toward all stakeholders involved in the value-creation processes of corporate enterprises aligns with the dimensions elucidated by corporate social responsibility (Fassin, 2012). A pluralistic management orientation, correlated with a more expansive set of objectives, is driven by an accountability system that simultaneously enables and constrains the interpretation of responsibility (Baudot, Dillard, & Pencle, 2022). This principle is variously interpreted and adapted according to the distinct aims pursued by each BC member, highlighting the processes

through which the dominant and alternative understandings of profit and non-profit objectives are reconciled (Kopaneva, 2022).

In this context, the balancing of antithetical interests emphasized by management serves to reinforce its credibility among both consumers and investors (Riolfo, 2020). This recent evidence is particularly pertinent in the realm of communication strategies employed by Benefit Corporations (BCs), offering valuable insights into stakeholder perceptions of responsible business practices. Specifically, the integration of corporate performance with sustainable development initiatives through non-financial reporting tools has the potential to enhance management's integrated strategy (Palladino et al., 2022).

Accountability to stakeholders extending beyond shareholders represents a process whose effects manifest over the medium to long term, benefiting all social actors involved. Focusing on internal stakeholders within BCs, the interplay between employee engagement and ownership emerges as mutually reinforcing. As posited by Kurland, "a Benefit Corporation can strengthen the employee-owned company's ownership culture through enhanced engagement and the creation of a meaningful work environment". Additionally, employee owners contribute an additional layer of accountability, facilitating the achievement of the Benefit Corporation's broader stakeholder mandate (Kurland, 2018). The dynamics of shared responsibility lay the groundwork for the development of universal toolkits available to enterprises, agencies, and various managerial models. These tools, such as the B Impact Assessment (BIA) and Benefit Corporation governance frameworks, can be leveraged to manage businesses in a more sustainable and resilient manner, thereby positively impacting society (Chen & Marquis, 2022; Villela, Bulgacov, & Morgan, 2021).

Recent discourse posits that the values held by executives, managers, and supervisors within Benefit Corporations and non-profit organizations exhibit significant alignment (Miller-Stevens, Taylor, Morris, & Lanivich, 2018). This alignment underscores the complementarities between profit and non-profit paradigms, not only in the conceptualization of the management model but also within the broader context of corporate social responsibility. This perspective is bolstered by evidence indicating that the management of BCs and leaders of non-profit initiatives often advocate for shared social causes and collective issues, seeking solutions through their contributions. As delineated in the preceding paragraph regarding the conceptualization of BCs, these hybrid organizational forms are characterized by an ethical dimension inherent in their business conduct. Such a dimension necessitates a sectoral association of values, particularly when considering the prior work experiences of employees (Miller-Stevens, Taylor, Morris, & Lanivich, 2018).

A systematic review of the literature reveals that social responsibility within corporate entities such as BCs (a) enhances their organizational stewardship and (b) fortifies their legitimacy with institutions and other stakeholders by incorporating Environmental, Social, and Governance (ESG) information into

their integrated reporting (Camilleri, 2018). It is noteworthy that institutional theory stands as the predominant methodological approach in scholarly investigations examining the role of BCs in society. This theoretical framework, as illustrated through co-citation analysis, is intricately linked to both the conceptualization of hybrid management forms and the corporate dimension.

3.2.3 Sustainable innovation

The analysis presented thus far indicates that BCs represent a direct evolution of traditional corporations focused primarily on profit maximization. These entities incorporate the imperative to generate financial returns alongside the opportunity to contribute to social causes that enhance public welfare. The value proposition of BCs, constructed within the framework of corporate social responsibility, reveals a paradigm shift in stakeholder engagement, one that extends beyond shareholders, who have historically been viewed as the principal stakeholders in corporate affairs, to encompass the broader community that BCs aim to serve.

In this regard, the notion of shared responsibility is perceived positively by stakeholders, who are acknowledged as having an active and proactive role in the value propositions offered by BCs. This legitimization of a disruptive and innovative stakeholder role encourages consumers and other target groups to identify personal benefits associated with the purchase of products and services from BCs. Such benefits function as pertinent motivational factors for purchasing decisions in a segmented market, allowing consumers to become agents of environmental change or advocates of community endorsement. Research conducted by Bianchi, Reyes, and Devenin (2020) underscores the salience of social and environmental responsibilities as primary motivators for consumers engaging with BCs, enhancing their confidence in the effectiveness of such contributions, followed closely by elements of self-satisfaction, health, and quality of life.

The innovative character of profit-oriented businesses committed to adhering to stringent standards of environmental and social performance, accountability, and transparency (Stubbs, 2019) is poised to unlock new markets for traditional enterprises, thereby creating transformative impacts on vulnerable local communities through global aspirations (Zebryte & Jorquera, 2017). By embracing a hybrid business model, management can implement sustainable innovation practices guided by a commitment to social benefits. Within this complex ecosystem, a dynamic interplay of competition and collaboration unfolds among various economic actors, characterized by coopetition relationships that balance win-win scenarios with trade-offs across economic, environmental, and social performance domains (Christ, Burritt, & Varsei, 2017).

Furthermore, the journey toward achieving the sustainability objectives of BCs necessitates a robust commitment to the principles of the circular economy (Boffa, Prencipe, Papa, Corsi, & Sorrentino, 2023). The cyclic regeneration of the internal ecosystem through which BCs deliver their value proposition aims to foster both social and financial value (Kuratko, McMullen, Hornsby, & Jackson, 2017). A comprehensive literature review reveals that the sustainability of these initiatives motivates investors who advocate for socially responsible business practices, often at the expense of maximal corporate profit. Multiple studies validate the inclination of these investors, who seek to support social initiatives, to accept reduced financial returns (Cooper & Weber, 2021). This tendency is linked to the financial resilience of BCs, particularly due to their sustainable orientation. Recent research by Stecker demonstrates that customers express a willingness to pay a premium for eco-friendly products and services as a safeguard against greenwashing. Given this context, substantial financial resources are being allocated to businesses that aim to address pressing global challenges, significantly bolstering investments in social enterprises (Stecker, 2016).

The insights garnered from the exploration of sustainable innovation within BCs illuminate an eco-systemic perspective, underscoring the dual imperatives of fostering social and economic value, even in times of crisis (Bandini, Boni, Fia, & Toschi, 2023). Thus, BCs' innovation is intricately linked to the triad of social, environmental, and financial sustainability, reflecting a readiness among investors to forgo personal financial gains in favour of advancing social good.

3.3 What is the geographical distribution of the research in terms of authors, journals and countries?

To address the third research question focused on elucidating the geographical distribution of research studies on BCs, the authors conducted a thorough investigation into the structural dynamics of collaborations among various research networks and partnerships. This analysis facilitated the identification of relational dynamics among institutions and countries, which are detailed in the subsequent section. A primary aspect of the examination of geographical distribution pertains to the analysis of co-authorship patterns. This methodological approach enables the assessment of the most productive scholarly outputs while simultaneously identifying entities exhibiting the highest degree of collaborative publications (Martínez-López, Merigó, Valenzuela-Fernández, & Nicolás, 2018). Before presenting the visualization generated through VOSviewer, the authors will enumerate the most cited researchers, all of whom possess a minimum citation threshold of 30, organized by total link strength (see Table 3).

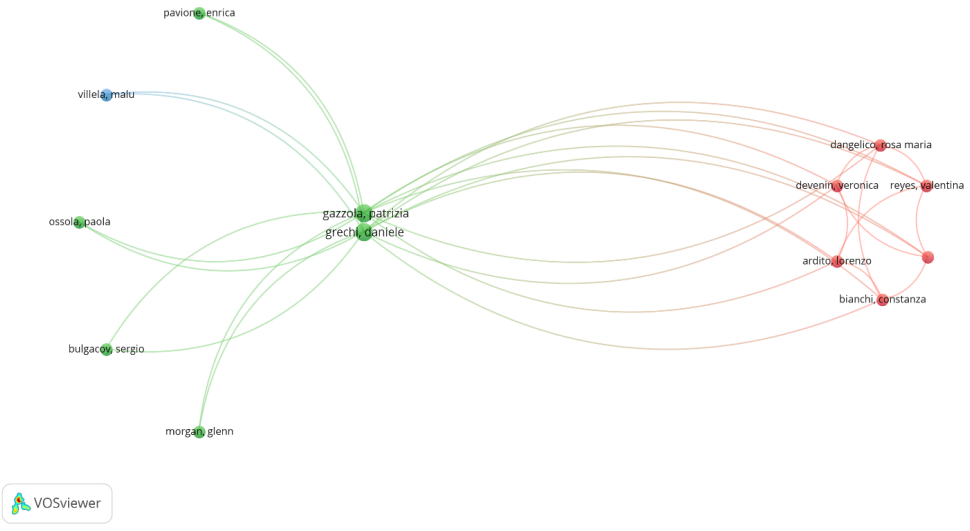
Table 3 – First 12 co-authors most cited in order of total link strength

Authors	Citations	Authors	Citations
Gazzola Patrizia	41	Devenin Veronica	34
Grechi Daniele	41	Reyes Valentina	34
Ardito Lorenzo	31	Gao Jawen	33
D'Angelico Rosa Maria	31	Gu Jibao	33
Messeni Petruzzelli Antonio	31	Liu Hefu	33
Bianchi Costanza	-	Gallego Alvarez Isabel	74

Source: Authors' elaboration

The initial findings derived from the analysis conducted using VOSviewer highlight a significant predominance of the scholarly community focused on research pertaining to corporate social responsibility (Gallego-Álvarez). The co-authors most frequently cited, particularly Gazzola and Grechi, emerge as key figures characterized by their rigorous engagement with the sustainability of business models (BCs) and the exploration of their CSR dimensions. As illustrated in the subsequent figure (Figure 4), these authors constitute the central nodes within the co-authorship network analysis, underscoring their prominence in the field.

Figure 4 – Co-authorship analysis of BCs studies under VOSviewer



Source: Authors' elaboration

The pivotal role of co-authors Gazzola and Grechi underscores the prevailing themes currently prevalent in the research on BCs. Notably, the primary cluster identified through bibliometric analysis features the collaborative work of Gazzola, Grechi, and Ossola, who are focused on delineating the distinctions between BCs and B Corps within the realm of sustainability. Distinct from this initial grouping, the second cluster, represented by the co-authorship of Bianchi Costanza, Devenin Veronica, and Reyes Valentina, is dedicated to the exploration of social and environmental responsibility through their research endeavors. Additionally, Petruzzelli Antonio Messeni and Ardito Lorenzo are situated within the same cluster, addressing the theme of sustainable innovation.

The third cluster is characterized by the ethical dimension and is represented by Villela Malu, emphasizing the necessity of elucidating the ostensibly antithetical nature of the diverse objectives that Benefit Corporations can pursue. In a parallel analysis of the geographical distribution of co-authorship, the examination of scientific collaborations between countries is initiated through a preliminary table that illustrates the dispersion within the field (Table 4). This analysis, akin to the one conducted for co-authorship, has been structured according to the total link strength of the elements involved.

Table 4 – First 12 countries most cited in order of total link strength

Countries	Citations	Countries	Citations
Italy	218	Australia	314
USA	2153	Chile	34
Germany	148	France	78
Brazil	337	Denmark	845
United Kingdom	427	Malta	112
Switzerland	42	Belgium	133
Canada	499	China	135

Source: Authors' elaboration

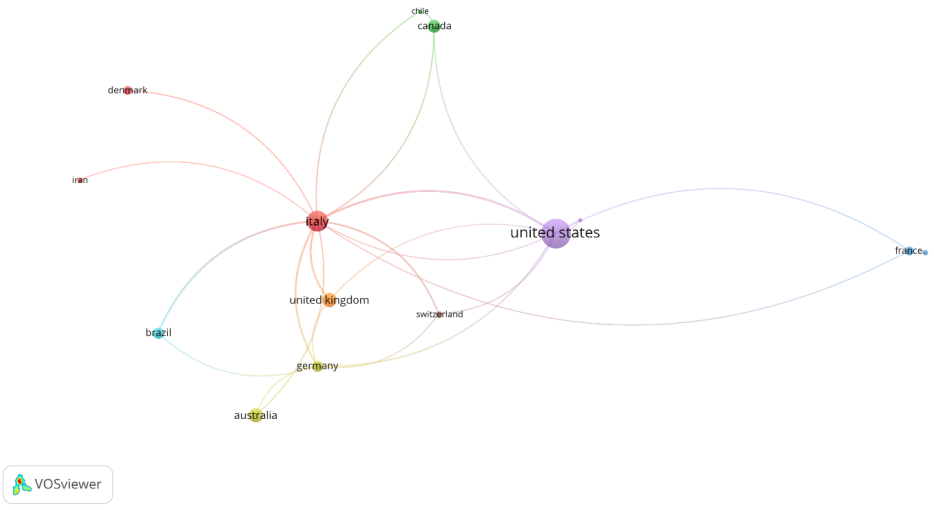
The geographical distribution of research in this domain predominantly reflects the leadership of six nations: Italy, with 1,818 citations; the United States, with 2,153 citations; Germany, with 148 citations; Brazil, with 337 citations; the United Kingdom, with 427 citations; and Switzerland, with 42 citations. A closer examination of the three countries with the highest citation counts reveals a significant prominence of the United States within the field. As the birthplace of BCs and the broader B movement, alongside Canada, the robust scientific collaborations in these nations stem from the direct observation

of a well-established economic entity that enjoys considerable legal legitimacy across a majority of American states.

In contrast, the British experience diverges notably from that of the United States. The English legal framework is predominantly oriented towards the shareholder value theory and the paradigm of shareholder maximization. Nevertheless, these foundational assumptions have paved the way for the introduction of specialized regulations for social enterprises, facilitating the growth of BCs and B Corps. Consequently, the United Kingdom serves as a pertinent example for other nations aspiring to enhance their corporate social responsibility and social purpose initiatives (Andreadakis, 2023). Italy's discourse, however, presents a distinct narrative that diverges from both the United States and the United Kingdom, which will be elaborated upon in the subsequent section.

The examination of the geographical distribution of BCs reveals a complex landscape characterized by diverse thematic clusters, interconnected through collaborative research partnerships. Notably, the analysis indicates that Italy serves as a pivotal node within this global research framework on BCs, as identified through VOSviewer software. Italy ranks as the second nation worldwide to acknowledge the potential inherent in BCs, following the United States, and is distinguished as the first European nation to grant legislative recognition to BCs, formalized through Law No. 208/2015 (Marchini, Tibiletti, Fellegara, & Mazza, 2023; Gazzola, Amelio, Grechi, & Alleruzzo, 2022).

Figure 5 – Countries relationships of BCs studies under VOSviewer

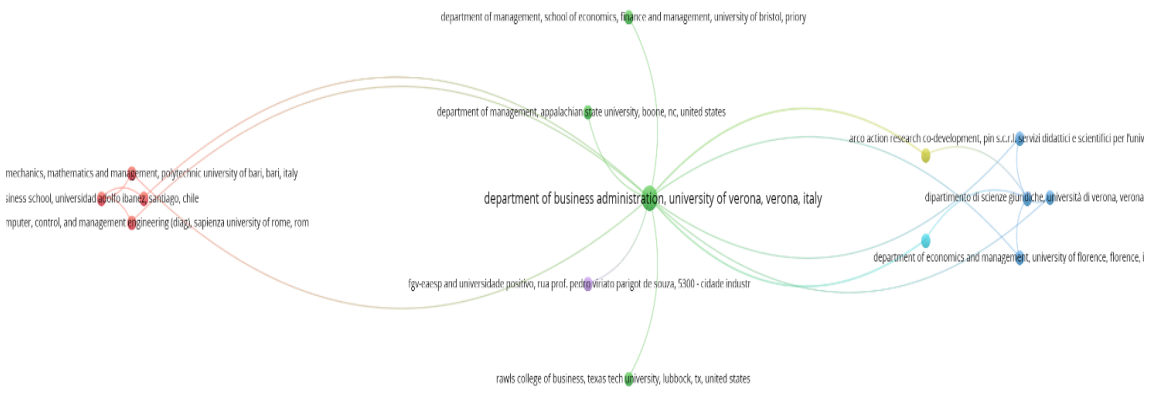


Source: Authors' elaboration

The Italian socio-economic context, marked by a predominance of small and medium-sized enterprises (SMEs) within the service sector, has fostered an environment conducive to social entrepreneurship and the emergence of innovative hybrid business models with a purpose-driven focus (Nigri, Del Baldo, & Agulini, 2020b). Recent research has delineated the landscape of BCs across Italy, indicating their concentration primarily in the northern and central regions. This study highlights that the predominant values associated with these organizations stem from a commitment to addressing environmental impacts, enhancing employee welfare, and promoting territorial integrity, as well as driving innovation and sustainable practices (Palazzi, Sentuti, Sgrò, & Ciambotti, 2024). Moreover, it is noteworthy that both Italian and other national legal frameworks impose specific disclosure obligations on Benefit Corporations, particularly concerning Environmental, Social, and Governance (ESG) criteria (Sciarelli, Cosimato, & Landi, 2020). Furthermore, the authors' exploration of emerging theoretical perspectives reveals that within the contexts of BC or B Corps, gender considerations appear to be inconsequential (Palazzi, Sentuti, & Sgrò, 2022).

Collectively, the insights gleaned from these analyses inform the third bibliometric investigation concerning the geographical distribution of research on BCs. As thoroughly detailed through the examination of co-authorship patterns and inter-country relationships, Italy's prominence in the international scholarly discourse surrounding BCs is conclusively established (Figure 5).

Figure 6 – Organizations partnerships on BCs under VOSviewer



Source: Authors' elaboration

As illustrated in Figure 6, a significant concentration of programs and research centers focused on BCs is evident in Italy, with six out of eleven entities located within the country. This observation

underscores the relevance of interdisciplinary research collaborations that have been established across various academic departments. These collaborations span complementary fields such as business administration, economics and management, and law, as well as the integration of disciplines including mechanics, mathematics, computer science, control systems, and management. Such collaborative efforts reflect a robust inter-institutional framework that effectively engages diverse social actors and organizations, facilitating participatory processes that contribute to local development and enhance community well-being.

4 Implications and conclusions

This research aims to make a significant contribution to the scholarly community by employing a mixed-methods approach to investigate the state-of-the-art mechanisms and outcomes associated with the value assets of BCs. From a theoretical perspective, this study provides insights into the conceptualization of social enterprise while simultaneously identifying gaps in the existing literature and delineating future research directions for scholars, practitioners, and policymakers.

In this vein, this paper contributes significantly to the scholarship surrounding BCs. Despite a growing interest among scholars in the hybrid management model characterizing BCs, there have been only two systematic literature analyses published to date, both sourced from Google Scholar and notably absent from the Scopus database. The first study examined the systematic literature pertaining to certified B Corporations, focusing on entities that attain certification for meeting specific quality standards as evaluated by B Lab (Diez-Busto, Sanchez-Ruiz, & Fernandez-Laviada, 2021). In contrast, the present study diverges from the narrowly focused analysis of certified B Corporations to explore Benefit Corporations – economic entities that are now legally regulated i*n various countries, particularly in the United States and Italy. The second study identified through Google Scholar assessed the roles of BCs and B Corps in advancing sustainable development (Kirst, Borchardt, de Carvalho, & Pereira, 2021). This analysis provided insights into the legal profiles and governance structures associated with BCs. However, the current study intentionally omits a purely legal and governance-focused examination in favour of a broader understanding of the diverse theoretical frameworks that intersect within BC literature, thereby avoiding an overly specialized approach.

According to the evidence of this study, the exploration of the hybrid nature of the emerging managerial model, alongside global phenomena affecting BCs, reveals a divergence of perspectives regarding their scope of action, particularly in relation to geographical distribution and the underlying sociocultural and economic contexts. Specifically, the framework of social entrepreneurship,

predominantly articulated in the United States of America and the United Kingdom, where hybrid managerial models such as BCs converge, differs substantially from the European notion of social enterprise, especially as defined within Italian legislation. This conceptual divergence between common law systems (e.g., the United States and the United Kingdom) and civil law traditions typically found in Europe contributes to ambiguities in research and the practice of social entrepreneurship. For instance, the potential internationalization of a social enterprise may necessitate an alteration in its legal status depending on the jurisdiction in which it operates, thereby complicating its value proposition. From a managerial standpoint, this research serves as a guiding framework for enhancing the impact of entrepreneurial activities. In alignment with the three research questions (RQs) investigated in this study, future research trajectories could encompass specific directions such as: (I) Integrating top-down approaches to social entrepreneurship and BC legislation, focusing on norms, regulations, and directives, to establish a framework that reinvigorates the motivation for adopting the emerging management model under consideration; (II) Conducting longitudinal assessments of the key research clusters, with particular emphasis on emergent themes such as sustainability innovation and alignment with the Sustainable Development Goals (SDGs) in the context of BCs; (III) Undertaking longitudinal analyses spanning several decades to evaluate how research trajectories evolve geographically over time.

Given these scenario assumptions, the originality of the present research is threefold: (1) it offers a comprehensive overview of the emerging paradigm represented by BCs within managerial studies; (2) it addresses unresolved research questions that persist within the academic discourse; and (3) it employs a mixed-method research methodology. Ultimately, this study delineates the current state of knowledge regarding BCs, identifying key contexts, interactions, and networks involving BCs and public-private actors, while also providing valuable insights for future research trajectories in the field of BCs and associated networks. At the same time, it is important to acknowledge the limitations inherent in this study. Firstly, the reliance on a singular database may be viewed as a constraint. Secondly, the qualitative analysis conducted is susceptible to subjectivity, potentially leading to interpretations that differ from those envisioned by the authors.

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Digitalization and Human Resources Management Practices on Public Administration Studies. What is the Impact of Digitalization on Trial Court Management?

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Abstract

This paper aims to present an analysis of the most relevant studies on human resources management and digitalization in the public sector through an overview of the existing academic literature by focusing specifically on the trial court organization. Although studies on the impact of digitalization and HRM practices on public administration have a common background, they have evolved separately: this work identifies and analyzes the conditions that favor the contamination between these two scientific fields, but also how these different studies interact in a specific case such as in the trial court organization. The bibliometric analysis was employed to analyze 336 articles drawn from 194 main journals (ranging from 1985 to 2022). The findings show that the studies on HRM and digitization in the context of the trial courts are still scarce. This article provides outstanding theoretical contributions concerned scholars and managers of digitalization and HRM on public administration and their semi-permeable boundaries. Research limitations and avenues for further research are given.

Keywords – Digitalization; Trial Court; Public Administration; Bibliometric Analysis; Human Resources Management.

Paper type – Research Paper

Sommario

Digitalizzazione e pratiche di gestione delle risorse umane negli studi sulla pubblica amministrazione. Qual è l'impatto della digitalizzazione sulla gestione del tribunale di primo grado?– Il contributo si propone di presentare un'analisi degli studi più rilevanti sulla gestione delle risorse umane e sulla digitalizzazione nel settore pubblico attraverso una panoramica della letteratura accademica esistente, concentrandosi specificamente sull'organizzazione del tribunale di primo grado. Sebbene gli studi sull'impatto della digitalizzazione e delle pratiche di gestione delle risorse umane nella pubblica amministrazione abbiano un background comune, essi si sono evoluti separatamente: questo lavoro identifica e analizza le condizioni che favoriscono la contaminazione tra i due ambiti scientifici, ma anche come questi diversi studi interagiscano in un caso specifico, ovvero l'organizzazione del tribunale di primo grado. L'analisi bibliometrica è stata utilizzata su 336 articoli tratti da 194 principali riviste (dal 1985 al 2022). I risultati mostrano che gli studi sulla gestione delle risorse umane e sulla digitalizzazione nell'ambito dei tribunali sono ancora scarsi. Nel complesso, l'articolo fornisce contributi teorici rivolti a studiosi e manager della digitalizzazione e della gestione delle risorse umane nella pubblica amministrazione, intesa nei suoi confini semi-permeabili. Vengono definiti i limiti della ricerca e le possibilità di ulteriori sviluppi della stessa.

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1 Introduction

Change management is the process used to implement changes through actions such as redefining employees' tasks and training activities relating to the new digital skills, changing the performance evaluating system and choosing new staff selection criteria, or defining the approach to involve and motivate people and the approach that facilitate the transition towards a new cultural paradigm (Boyne, Meier, O'Toole & Walker, 2005; Canonico, De Nito, Esposito, Martinez, & Pezzillo Iacono, 2017).

Change management approaches, methodologies and tools relating to digitization within public administration are conceived as collaborative, involving all different organizational actors in designing activities and operational processes using a bottom-up model (Jakimowicz & Rzeczkowski, 2021).

Hence, public administration (PA) is associated with the management of innovation rules and procedure and the implementation of a behavioral approach as the implementation of effective technology (Hinna, Mameli, & Mangia, 2016; Di Virgilio, Bova, Di Pietro, & Sheehan, 2014; Taylor & Helfat, 2009; Manzoni & Angehrn, 1997).

Digital transformation in the public sector is more difficult as it involves reshaping and managing organizational structures, dynamics, processes, practices, organizational and inter-organizational tools, and the relations of the various stakeholders (Sidorenko, Bartsits, & Khisamova, 2019).

For this reason, scholars have studied the role of the human resources (HR), 'fit' with performance in a range of contextual factors which include the external environment and internal structures (Knies & Leisink, 2018). Empirical evidences show that the positive impact of human resources management (HRM) on organizational performance, in term of improvement of productivity, profitability and reduction of employee turnover rates is highly influenced by digital transformation (Arthur, 1994; Combs, Liu, Hall, & Ketchen, 2006; Van De Voorde, Paauwe, & Van Veldhoven, 2010; Karikari, Boateng, & Ocansey, 2015; Mondal, Di Virgilio, & Das, 2022).

The need of a well-performing, efficient and innovative public service has become more impellent within public organizations today. This process started with the first attempts to implement the reforms inspired by the New Public management (NPM) that were developed during the 1980s (Hood, 1991). In fact, NPM introduces the conceptual linkage between the public service and the outcome criteria (efficiency, effectiveness, customer value, transparency), as underlined earlier by Pollitt and Bouckaert (2004), later stage by many other scholars (Capalbo & Palumbo, 2013; Kuipers et al., 2014; Capalbo, Sorrentino, & Smarra, 2018; Higgs, Kuipers, & Steijn, 2022).

The results of these reforms are not the same in all the contexts in which they have been applied, as shown in many works including Dan and Politt (2015) and Ibsen, Larsen, Madsen, and Due (2011). There are many factors that can explain the success or failure of a reform, but among these the role of the human resource is essential (Bos-Nehles, Bondarouk, & Nijenhuis, 2017). Wynen, Boon, Kleizen,

and Verhoest (2020), in fact, emphasize the role of human resources in the success of public administration reforms, who are responsible for providing services, implementing reforms and supporting innovation through their knowledge, competence and expertise. Indeed, Ongaro and Van Thiel (2018) sustain that the complexity of administrative processes determines the depletion of human resources hindering the innovation processes of public organizations. Consequently, to improve HRM practices could help recruit and retain key staff, improve effectiveness and foster a performance-oriented culture by HR assuming a more strategic role (Covell, 2016; Ingraham & Rubaii-Barrett, 2007; Knies, Boselie, Gould-Williams, & Vandenabeele, 2017; Knies & Leisink, 2018; Mondal, Di Virgilio, & Das, 2022). The operationalization of HR policies and employee-facing roles are traditionally seen as part of administrative duties and routine tasks such as welfare and labor relations.

Nonetheless the role of HR function is heavily influenced by the distinctive features of public organizations. First of all, public organizations are open to public scrutiny and monitoring, and therefore have a wider range of stakeholders compared to the private sector; this means that their mission can have multiple goals and priorities (Rainey, 2009). The lack of credibility of the HR function in the public sector has created the perception that it is peripheral and relatively powerless in comparison with more powerful groups competing for resources. Klingner (1993) observes that under strategic HRM the traditional role of the HR function in the public sector of balancing efficiency and responsiveness with individual rights and social equity is drifting towards cost and accountability. Despite this, the role and activities of the HR function are still thought to be influenced by traditional public sector values, and that ensuring fair treatment of employees and being a good employer are significant factors together with strategic pressures. This process has become increasingly complex due to the digitization process (Abishov, Polyak, Seidullaeva, Kermeshova, & Sabirov, 2018).

In particular, the use of modern information technologies in judicial activity allows us not only to expand and facilitate access to information, but also to ensure the implementation of the constitutional right of citizens to access justice towards creating a digital justice. Through digitalization, governments are tasked with standardizing the interpretation of laws, minimizing cases of miscarriage of justice, and thereby increasing the efficiency of the administration of justice and the efficient use of justice (Abishov, Polyak, Seidullaeva, Kermeshova, & Sabirov, 2018; Kovtun, Vinokurov, Kapustina, Polenov, & Ozerov, 2020).

The international trends in the development of digital justice and the problems that slow down the transition to a digital form of justice are less considered in the literature, despite the numerous experiments implemented starting from 2015 onwards (Langbroek *et al*., 2016). Furthermore, even though the scholars studied the impact of justice reforms and considered trial courts as organizations for

many years, the studies that analyze the impacts of reforms on organizational aspects of trial courts are scarce (Steelman, Goerdt, & McMillan, 2000; Shomade & Hartley, 2010; Zan, 2010; Saman & Haider, 2013).

As a result, scholars did not sufficiently deal with the impact of organizational aspects on court performance and the various aspects of caseflow management (Steelman, Goerdt, & McMillan, 2000).

Consequently, the ultimate goal of this work is to stimulate researches on HRM and digitization in public administration, focusing in the context of the trial courts and their semi-permeable boundaries, as shown by a bibliometric analysis of 336 articles drawn from 194 main journals (ranging from 1985 to 2022) and the implementation of the network analysis of the authors' keywords.

2 A bibliometric analysis of the academic literature

Bibliometric analysis has been used in science mapping to quickly identify the research structure within a field of study and provide accuracy to the traditional literature reviews (Zupic & Čater, 2015). Recently it has also been used in research trend studies to help identify a research trend specific to a country or mapping a specific field of study and topic (Dotsika & Watkins, 2017), and highlight evolutionary characteristics of a discipline's development (Ye, Kueh, Hou, Liu, & Yu, 2020). The quality of the literary review can be enhanced by using the bibliometric analysis which entails a transparent, systematic and reproducible review process. It allows to map the research fields and prestigious work without subjective bias, which is essential for the holistic approach to the literature process (Ellegaard & Wallin, 2015; Aria & Cuccurullo, 2017). In this study the web-based interface of R-package ('bibliometrix 3.0') 'biblioshiny' has been used.

There are countless literature reviews of current trends of HRM and digitalization in the public sector, but very few studies on trial court management which are also up to date.

The aim of this work is to evaluate the impact of HRM and digitalization in public sector and in the trial court organization. With the use of a bibliometric and systematic literature review we aim to identify the main current trends in caseflow management, and how these are influenced by the new HRM and digitalization practices. A keyword network analysis of HRM research and digitalization in public sector and in trial court management was performed.

Specifically, this study aims to provide an answer to the following research questions:

RQ1.What topics and keywords researchers have studied HRM digitalization in PA?

RQ2. What topics and keywords researchers have studied on digitalization in trial court management?

RQ3. What topics and keywords researchers have studied on HRM digitalization in trial court management?

3 Methodology

The search criteria and the selection of database were determined by the aim of the study and its research questions. This study aims to analyze the research trend of HRM and digitalization in the public sector and in trial court management by comparing the relationship between the keywords given by the authors. In order to achieve the objectives of the research, the Google Scholar and Web of Science (WoS) database were chosen which offers access to multiple academic databases published worldwide. According to Zupic and Čater (2015), it is possible determine the research streams and themes in a specific branch of literature by analyzing the literature. Hence, we decided to adopt a bibliometric analysis approach as it is considered to be the most suitable in order to explore the development of literature and academic discourse about impact investing.

This study follows a five steps workflow (as illustrates in Figure 1) to perform the bibliometric analysis, and was employed “Bibliometrix”, an open-access software developed by Aria and Cuccurullo (2017) to facilitate the completion of the recommended workflow.

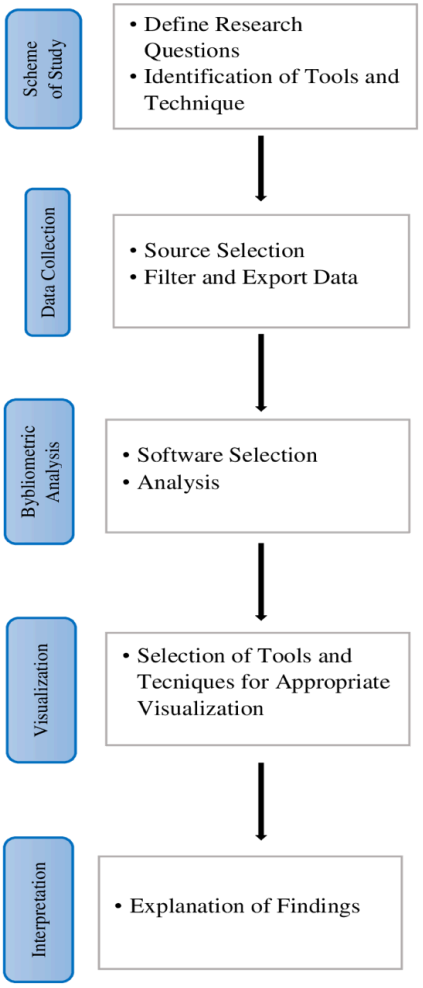
The use of Bibliometrix ensure objectivity thanks to an automated process embedded in its source code. As Aria and Cuccurullo (2017) point out, in this paper, we propose a unique tool, developed in the R language, which follows a classic logical bibliometric workflow that we reconstruct. The replicability derives from objectivity in the sense that researches arrive at the same result by using the same procedures and similar source documents. Finally, the flexibility it offers allows to create a dataset, split it into clusters and analyze the dataset still keeping the clustering.

3.1 Data collection

The literature review was conducted by identifying existing studies on HRM and digitalization research trends in the context of public administration through the procedure of Galvagno and Dalli (2014). First, we singled out a group of relevant articles by using field related: i.e., human resource(s), human resource(s) management, personnel manage(ment), HR, and HRM, digitalization, change

management, change organization, information processing management, big data and public administration, big data and public management, performance trial, performance justice, duration of trial, efficiency of trial, knowledge sharing upskilling reskilling, caseflow management. The data providers used are Google Scholar and Web of Science (WoS) and we decided to consider only the English scientific articles of top journals in public management, and HRM, for the period that spans from 1985 to 2022. Subsequently the full text of the chosen articles was carefully reviewed and only those falling within the scope of this work were selected. For this reason, only 336 articles of the 753 collected make up our sample.

Figure 1 – The procedure of bibliometric analysis



Source: Zupic and Čater (2015)

3.2 Authors' keywords analysis

The study uses authors' keywords network analysis to delve into future research flows (Akter & Wamba, 2019). We choose the keywords, because they are a good representation of the essence of the article (Dotsika & Watkins, 2017). We decided to use authors' keywords, because some analyzed articles do not present the keywords generated by data providers of citations (for example the Keyword plus of Web of Science), despite some methodological articles, such as Zhang et al. (2016) and Aria and Cuccurullo (2017) recommend using keywords provided by data providers.

We follow the methodology illustrated by Reed (2017) to carry out the revision and recoding of keywords so as not to affect the results of network analysis.

The network analysis of authors' keywords allows to explore the semantic framework of literature (Chen & Xiao, 2016; Aria & Cuccurullo, 2017; Han, Chae, & Passmore, 2019). We employ the multi-dimensional scaling (MDS) for the keyword mapping; MDS states that keywords are more related as good as they are closer (Van Eck & Waltman, 2009). Finally, we use the clustering analysis, that measures as the keywords are associated with a topic by a smart local moving algorithm (Waltman & Van Eck, 2013).

Keyword level analysis allows to identify the main features of the literature to which they refer by studying their position and degree of connection.

The measurement of this is made through the indicators of centrality, which associate a numerical value to a node (keyword, in our case) (Van Eck & Waltman, 2009; Waltman & Van Eck, 2013; Yoo, Jang, Byun, & Park, 2019). Obviously, the different indicators follow a different perspective (Han, Chae, & Passmore, 2019; Yoo, Jang, Byun, & Park, 2019). We adopt the degree centrality, that indicates the degree of popularity and visibility of a node.

More specifically, degree centrality assigns an importance score based on the number of links associated with each node, thus it calculates how many direct connections each node has with the other nodes in the network (Chen & Xiao, 2016; El Kouni, Karoui, & Romdhane, 2020).

In fact, the centrality degree provides easily interpretable information allowing you to understand the specific importance of a single node within the network (Yoo, Jang, Byun, & Park, 2019). Perry, Pescosolido, and Borgatti (2018) and Aria and Cuccurullo (2017) recommend using degree centrality, because it is easy to interpret and is the most popular.

4 Findings

4.1 Descriptive analysis

The Table 1 shows the main information of the sample: there are 336 articles on HRM and digitalization in public administration, 160 of which consider the impact of digitalization in the caseflow management, and only 29 articles discuss about HRM and digitalization in trial courts.

The cluster HRM and digitalization in public administration (RQ1) envelopes the cluster "digitalization in the caseflow management" (RQ2), which includes the cluster "HRM and digitalization in trial courts" (RQ3).

Furthermore, the Table shows that organizational studies of the trial courts start just from 2007, while these topics have been widely covered since 1985 in the public sector. The sources are 194, 87 and 19 journals respectively for the three clusters with a similar average of articles of sources equal to about 2. The analysis of annual average of publications, annual standard deviation of publication and annual median of publication shows that the distribution of number of publications of HRM and digitalization in PA is asymmetric, because there is a big difference between the values of average and media, 9 and 3, respectively. The asymmetric distribution could support the idea that there was a moment, in which the scientific production is blown up.

In the last two rows of Table 1, we indicate the number of the authors' keywords and keywords plus, that are generated by WoS. In section 3.2, we explained why we decided to use authors' keywords, 820 keywords allow to identify the semantic framework of literature, with the implementation of network analysis (Chen & Xiao, 2016; Aria & Cuccurullo, 2017; Han, Chae, & Passmore, 2019).

Table 1 – Main information of the sample

Main information about data	HRM – Digitalization in PA	Digitalization in trial court management	HRM – Digitalization in trial court management
Timespan	1985:2022	2007:2022	2007:2022
Sources	194	87	19
Documents	336	160	29
Annual average of publication	9.08	10.67	1.93
Annual standard deviation of publication	30.81	10.11	2.01
Annual median of publication	3	11	3
Keywords plus	520	267	72
Author's keywords	820	611	135

Source: Authors' elaboration

We continue with the analysis of authors' characteristics (Table 2). The authors of three clusters present a similar behavior. In fact, the articles have about 2 authors and the involved scholars often present stable collaboration. The collaboration index present values bigger than 2, and the authors that work together produce more than one article (Aria & Cuccurullo, 2017).

Table 2 – Authors' characteristics

Authors	HRM – Digitalization in PA	Digitalization in trial court management	HRM – Digitalization in trial court management
Authors	532	285	55
Authors per article	1.58	1.78	1.90
Authors appearances	636	338	59
Authors of single-authored documents	163	52	9
Authors of multi-authored documents	173	233	46
Single-authored documents	199	64	11
Co-Authors per documents	1.75	2.1	2.03
Collaboration Index	2.25	2.4	2.56

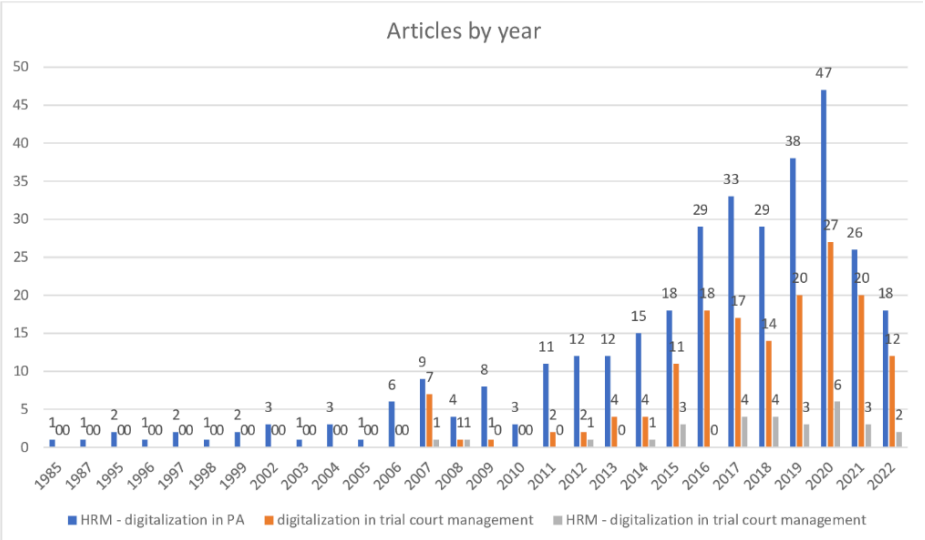
Source: Authors' elaboration

We conclude the descriptive analysis with the evolution of the annual production of articles. Figure 2 allows to graphically evaluate the annual distribution of scientific production, the cluster HRM and digitization in PA has a highly asymmetric distribution; this means that the interest of the scientific community has manifested itself at a specific time.

In our case, the year 2016 saw a significant increase in scientific production; in fact, the number of articles increased from 18 in 2015 to 29 in 2016. The explanation is linked to the implementation of some experiments to apply more advanced and efficient organizational models and to introduce technological innovation in public offices and even in the trial courts (Langbroek *et al.*, 2016).

The cumulative frequency distribution confirms the analysis and previous considerations, showing that until 2015 only 34% of all scientific production had been produced (Table 3).

Figure 2 – Articles by years



Source: Authors' elaboration

4.2 Thematic cluster-level analysis

Table 4 shows the main keywords: organizational commitment, job satisfaction, organizational citizenship behavior, turnover, transformational leadership, positive organizational support, performance innovative behavior, and job performance.

It is evident that none of the keywords directly associated with court management is between the most frequent. The explanation is related to the fact that the articles dealing with the impact of digitization and HRM on the efficiency of the courts are a small part of the whole sample.

Figure 3 shows summarized keywords network, each keyword color represents the association of clusters and the coordination of keywords assigned by calculation of distance measure. We found nine keyword nodes, but we focus on these related to the trial court management.

The Tables 5 and 6 report two different clusters. The two clusters are interesting, because although the two clusters are connected through Administrative justice and Organizational justice, it is clear that the issues of HRM and digitization in the context of caseflow management are considered separately. In fact, HRM issues are not related to performance improvement and digitization is not related to job performance.

Table 3 – Years of publications

Year	HRM – Digitalization in PA			Digitalization in trial court management			HRM – Digitalization in trial court management		
	Frequency	%	Cumulative percent	Frequency	%	Cumulative percent	Frequency	%	Cumulative percent
1985	1	0.30%	0.30%	0	0.00%	0.00%	0	0.00%	0.00%
1987	1	0.30%	0.60%	0	0.00%	0.00%	0	0.00%	0.00%
1995	2	0.60%	1.20%	0	0.00%	0.00%	0	0.00%	0.00%
1996	1	0.30%	1.50%	0	0.00%	0.00%	0	0.00%	0.00%
1997	2	0.60%	2.10%	0	0.00%	0.00%	0	0.00%	0.00%
1998	1	0.30%	2.40%	0	0.00%	0.00%	0	0.00%	0.00%
1999	2	0.60%	3.00%	0	0.00%	0.00%	0	0.00%	0.00%
2002	3	0.89%	3.89%	0	0.00%	0.00%	0	0.00%	0.00%
2003	1	0.30%	4.19%	0	0.00%	0.00%	0	0.00%	0.00%
2004	3	0.89%	5.08%	0	0.00%	0.00%	0	0.00%	0.00%
2005	1	0.30%	5.38%	0	0.00%	0.00%	0	0.00%	0.00%
2006	6	1.79%	7.17%	0	0.00%	0.00%	0	0.00%	0.00%
2007	9	2.68%	9.85%	7	4.38%	4.38%	1	3.45%	3.45%
2008	4	1.19%	11.04%	1	0.63%	5.00%	1	3.45%	6.90%
2009	8	2.38%	13.42%	1	0.63%	5.63%	0	0.00%	6.90%
2010	3	0.89%	14.31%	0	0.00%	5.63%	0	0.00%	6.90%
2011	11	3.27%	17.58%	2	1.25%	6.88%	0	0.00%	6.90%
2012	12	3.57%	21.15%	2	1.25%	8.13%	1	3.45%	10.34%
2013	12	3.57%	24.72%	4	2.50%	10.63%	0	0.00%	10.34%
2014	15	4.46%	29.18%	4	2.50%	13.13%	1	3.45%	13.79%
2015	18	5.36%	34.54%	11	6.88%	20.00%	3	10.34%	24.14%
2016	29	8.63%	43.17%	18	11.25%	31.25%	0	0.00%	24.14%
2017	33	9.82%	52.99%	17	10.63%	41.88%	4	13.79%	37.93%
2018	29	8.63%	61.62%	14	8.75%	50.63%	4	13.79%	51.72%
2019	38	11.31%	72.93%	20	12.50%	63.13%	3	10.34%	62.07%
2020	47	13.99%	86.92%	27	16.88%	80.00%	6	20.69%	82.76%
2021	26	7.74%	94.66%	20	12.50%	92.50%	3	10.34%	93.10%
2022	18	5.36%	100.00%	12	7.50%	100.00%	2	6.90%	100.00%
Total	**336**	**100.00%**	**100.00%**	**160**	**100.00%**	**100.00%**	**29**	**100.00%**	**100.00%**

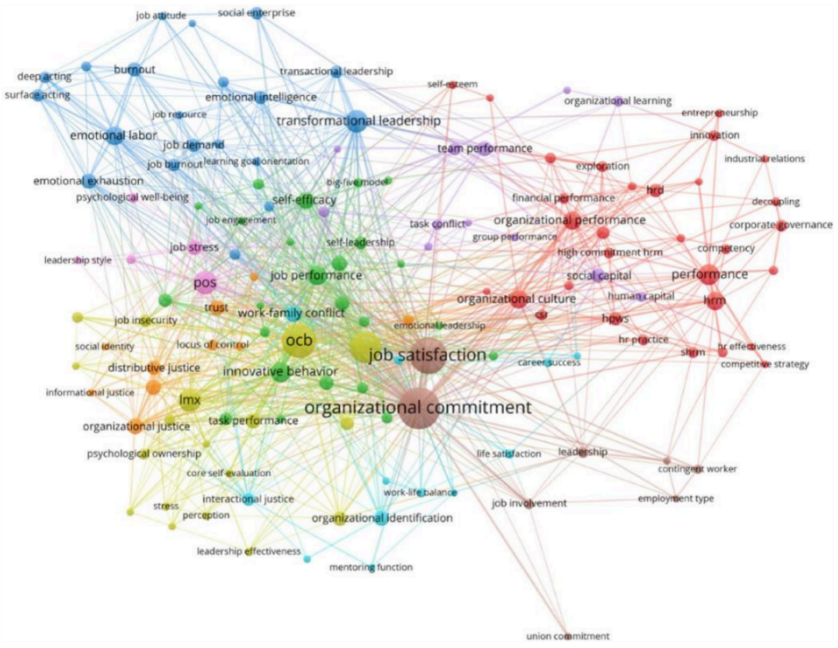
Source: Authors' elaboration

Table 4 – Main authors' keywords

Rank by frequency	Keywords	Degree centrality
1	Organizational commitment	303
2	Job satisfaction	258
3	OCB	197
4	Turnover	202
5	POS	110
6	Transformational leadership	116
7	LMX	109
8	Performance	122
9	Innovative behavior	84
10	Job performance	83

Source: Authors' elaboration

Figure 3 – Network analysis



Source: Authors' elaboration

Table 5 – Administrative justice node

Keywords	Degree centrality
Administrative justice	18
OCB	16
Turnover	14
Job satisfaction	13
POS	10
Organizational commitment	10
Procedural justice	8
Innovative behavior	8
Job performance	7
Court delay reduction	5

Source: Authors' elaboration

Table 6 – Digitalization node

Keywords	Degree centrality
Digitalization	26
Big data	22
Administrative justice	18
Organizational justice	13
Procedural justice	8
Court delay reduction	7
Performance	7
Change management	6

Source: Authors' elaboration

Thanks to the network analysis we have identified the two streams of research on which focusing our attention in order to identify best practices useful to practitioners. We deal with this in the following.

The studies linked to the Administrative justice node are those most connected to the issues of caseflow management. In fact, in some works such as trial court as organization (Ostrom, Ostrom, Hanson, & Kleiman, 2007) the need for an active management of the proceedings is emphasized through a concrete and real division of labor between the administrative staff and the judges.

Practical methodologies have been identified to speed up the proceedings, such as for example delegating all the bureaucratic activities to the registrars, or favoring a rapid and effective exchange of information between all the stakeholders. This node also includes studies dealing with performance management where in the first phase performance indicators are identified: quality of court decisions, productivity, and timeliness (Borgia, Das, Di Virgilio, & La Torre, 2024; Deidda Gagliardo, Borgia, Di Virgilio, & La Torre, 2024). We identify the methodologies to ensure constant monitoring.

The studies linked to the digitalization node describe how information technology can facilitate the work of the courts. In this case, the most relevant issues are related to digital management systems of the documents, tools for the digital transmission of documents, etc. Case management systems deserve an in-depth analysis. These systems allow the registration of cases, the management of the documents, the possibility of searches and queries and the reporting based on the data entered in the system, practice which ensure the transparency of the judicial system. The fundamental objective of the systems is to allow an overview of pending cases, their state of process and the next necessary procedural actions (Steelman, Goerdt, & McMillan, 2000).

5 Conclusions and future researches

According to Osborne's analysis (2018), the study demonstrates how interest in HRM in public sector research has grown. This analysis, reveals a process of quantification of HRM research in public sector. This is apparent from the prevalence of quantitative research, particularly in public administration and public management journals, and close examination of employees' behavior and attitudes at individual level.

The focus is to ensure a high level of performance through innovative HRM and determine the cross-fertilization between HRM and innovation (Mondal, Di Virgilio, & Das, 2022). Digitization plays a fundamental role in this process of redefining and reorganizing HR. This process of integration between HRM and digitization has not yet been addressed in court trial management. The paper highlights that the added value of HRM for public sector performance is mostly unexplored and therefore must be investigated empirically. The concept of added value of HRM stems from research conducted mainly in the private sector. When this topic is investigated in the context of public sector, the attention is shifted on individual worker performance using cross-sectional data.

Last but not least, the rapprochement of HRM and digitization in court trial management depends on editorial policies, which often prove less interdisciplinary than many such journals' mission statements suggest. Including more scholars from the field of public administration in the editorial boards of

organizational journals, publishing special issues on public organization and organizing, and generally encouraging more submissions to journals of organization studies from the field of public administration would help strengthen the ties between these two fields.

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The Effects of Unfair Trading Practices in the Agri-Food Chain from an Environmental Perspective: A Review

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Abstract

Nowadays, an agri-food system based on fair practices is fundamental to ensure ethical and sustainable production. These practices can have repercussions both on the quality of the product and on the environment, in addition to the economic and social implications. This research study is based on a scoping literature review, following the PRISMA methodology, to identify the effects that unfair trading practices could have on agri-food production in terms of environmental effects. A total of 47 articles were included in the review. The results highlight that commercial practices play a fundamental role in determining market competitiveness, and the environmental impacts can be seen through the phenomenon of food waste and loss. Due to the lack of research on the relationship between the unfair trading practices and their environmental impacts, further study is required to guarantee fairness throughout the supply chain and a sustainable production process.

Keywords – Unfair Trading Practices; Environmental Impact; Agri-food; Climate Change; Food Loss.

Paper type – Literature Review

Sommario

Gli effetti delle pratiche commerciali sleali nella filiera agroalimentare da una prospettiva ambientale: una revisione. – Oggigiorno, un sistema agroalimentare basato su pratiche eque è fondamentale per garantire una produzione etica e sostenibile. Tali pratiche possono avere ripercussioni sia sulla qualità del prodotto che sull'ambiente, oltre alle implicazioni economiche e sociali. Questo studio si basa su una revisione della letteratura di *scoping*, seguendo la metodologia PRISMA, per identificare gli effetti che le pratiche commerciali sleali potrebbero avere sulla produzione agroalimentare in termini di effetti ambientali. Nella revisione sono stati inclusi 47 articoli in totale. I risultati evidenziano che le pratiche commerciali svolgono un ruolo fondamentale nel determinare la competitività del mercato e gli impatti ambientali possono essere visti attraverso il fenomeno dello spreco e della perdita di cibo. A causa della scarsità di ricerche sulla relazione tra le pratiche commerciali sleali e i loro impatti ambientali, sono necessari ulteriori studi per garantire l'equità lungo tutta la filiera e un processo di produzione sostenibile.

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1 Introduction

Agri-food chains based on equity and the adequate distribution of value are considered an increasingly important issue according to the sustainable development goals, with particular reference to SDG12 on consumption and production patterns (Moreira-Dantas, Martínez-Zarzoso, & Torres-Munguía, 2023).

These supply chains are a multidimensional multi-actor system, involving different sectors and stakeholders, such as farmers, intermediaries, retailers, and consumers (Khan, Behrendt, Papadas, & Arnold, 2024).

Therefore, food systems are complex networks of processes that include all the inputs and outputs associated with production, processing, distribution, and purchasing. In this sequence, issues related to unfair trading practices may occur, which can have serious repercussions depending on the actors involved. Market unfairness can be of various types, such as aggressive and fraudulent behaviours towards consumers, those between direct competitors, and those among different actors in the same supply chain (Del Prete, Golossenko, Gorton, Tocco, & Samoggia, 2024).

Unfair behaviour towards consumers is one that induces them to purchase error, limiting their decision-making ability through false and insufficient product information. These can include propaganda campaigns, fake consumer product reviews, and false advertising.

Among competitors, unfair behaviours can consist of excessive price reduction (dumping), counterfeiting the products of competitors, and violating intellectual property rights.

Regarding those between different actors of the supply chain, they can include delayed order payments, last-minute cancellations, and unilateral supplier contract modifications (Sujianto et al., 2024). This paper focuses on this kind of unfair behaviour, often referred to as “B2B” unfairness.

According to the EU 2019/633 regulation, Unfair Trading Practices (UTPs) are broadly defined as practices that grossly deviate from good commercial conduct and fair dealing, as well as being often unilaterally imposed by one trading partner onto another. This asymmetry causes contractual imbalances that benefit the more powerful partner, who is capable of negotiating more favourable prices or better terms and conditions (Kononets, Treiblmaier, & Rajčániová, 2022). These practices are detrimental to the weaker actors in the supply chain, particularly small farmers, causing both socio-economic and environmental repercussions, as well as negative effects on product quality.

Disparities in economic size and power are prominent in agri-food supply chains, for instance, between small-scale producers and farmers on one hand and large multi-national food processors and retailers on the other. Due to agriculture occupying one-half of the world’s habitable land and agri-food systems producing one-third of all greenhouse gas emissions, these supply chains are being questioned concerning the transition towards more responsible production and consumption.

Recent research shows that individual farmers and small and medium enterprises lose, on average, 2.27% of their total annual turnover due to the harmful effects of unfair trading practices caused by power asymmetries (Kononets, Treiblmaier, & Rajčániová, 2022). UTPs can cause enormous losses, which can take the form of lost profits, wasted expenditure, spoiled or unsold goods and wasted time. Therefore, practical solutions are needed to address this problem in the food industry (Merlino, Borra, Bargetto, Blanc, & Massaglia, 2020).

From an economic point of view, a possible solution could be that of guaranteeing fair compensation to farmers and a fair price to consumers. This would be beneficial for contributing to economic equity, providing a basis for more sustainable agricultural practices and responsible management of resources, as well as influencing the availability of accessible, nutritious, and safe food. More recently, both academic and practitioner interests have shifted to holistic, "triple bottom line" (profit, people, planet) approaches in support of supply chains that are fairer economically, socially, and environmentally (Del Prete, Golossenko, Gorton, Tocco, & Samoggia, 2024).

With this study, the information expected to be obtained will serve as a preliminary basis for other researchers to conduct further investigations and for policymakers to reinforce legislation regarding UTPs.

2 Methodology

Despite UTPs becoming an interesting political topic and the attention placed on their ethical impact, from the study conducted, there is relatively little research on the consequences from an environmental perspective. In light of these premises, a scoping review was conducted to map out the state-of-the-art of the peer-reviewed literature and to identify any existing gaps in the knowledge available. Therefore, the following research question was composed: what are the potential environmental impacts of unfair trading practices in the agri-food chain?

2.1 Methodological approach

Based on the current literature, a scoping review was undertaken to analyse the main issues related to the agrifood chain and unfair trading practices. Colquhoun et al. (2014) defines scoping reviews as "a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically

searching, selecting, and synthesising existing knowledge". This approach was selected because the findings of the study can serve as a foundation for a future systematic review.

The review was conducted in accordance with the *Preferred Reporting Items for Systematic reviews and Meta-Analysis Protocols extension for Scoping Reviews* (PRISMA-ScR) (Page et al., 2021). This literature review method involves a series of steps that rigorously apply the selection criteria to systematically analyse, reinterpret, expand, and deepen the existing literature while facilitating knowledge dissemination.

The scientific articles were collected between November and December 2024. Scopus, Google Scholar, and Web of Science were the main bibliographic databases used to carry out the search. A draft of the search strategies was discussed by the research and further refined. A specific string of keywords was defined, and papers were selected from the results obtained from the search within the titles, abstracts and author keywords: ("market power" OR "unfair trade" OR "market share") AND ("environmental sustainability" OR "climate change" OR "product quality"). These keywords were chosen to identify papers focused on market competitiveness, unfair trading, and environmental effects.

2.2 Review protocol

From Table 1, for reviewing papers needed to be centred around the environmental impacts of unfair practices on the agri-food supply chain. According to the review protocol, papers were considered if they were: published between in the period of 2015-2024, written in English, involved primary or secondary studies, and described agri-food supply chain and fairness. Qualitative, quantitative, as well as mixed-method studies, were included in order to consider the various issues that may induce the occurrence of unfair practices. This study has included conference proceedings in order to extract all possible insights into this emerging research field. All other elements of grey literature were not considered. Furthermore, the references of the selected papers were examined to enhance the selection process. The reference citation management tool utilized for the final results was Zotero.

To ensure consistency in the review process, a sample of 10 random articles were screened by two reviewers and subsequently discussed to create a homogenous reviewing criterion.

The papers which resulted from the initial search underwent a second selection process which examined the full articles. An Excel spreadsheet was utilised to record the data of the selected studies to favour a more efficient interpretation and analysis during the review process.

Table 1 – Review protocol

Item	Description
Keywords	Market power; Unfair trade; Market share; Environmental sustainability; Climate change; Product quality.
Inclusion	Primary and secondary sources; Published articles, reviews, books, book chapters and conference proceedings; Papers with qualitative, quantitative methods and conceptual studies on unfair practices only in the agri-food chain, indicators, impacts of these practices on the environment.
Exclusion	Papers not written in English; All other forms of grey literature; Papers that do not focus on the agri-food supply chain; Studies centered only on legislative, economic and social aspects.
Publishers	Springer; Taylor & Francis; Elsevier; MDPI; Wiley; IEEE; Emerald; ACM.
Time Period	January 2015 to December 2024.

Source: Authors'elaboration

3 Results

As shown in the PRISMA flow diagram (see Figure 1), the search strategy initially produced 799 papers which amounted to 485 papers after duplicate removal. As a first step the remaining articles were screened by title and abstract in order to include only studies that met all the review protocol criteria (see Table 1) for the full-text analysis. This final extraction phase produced a total of 47 records.

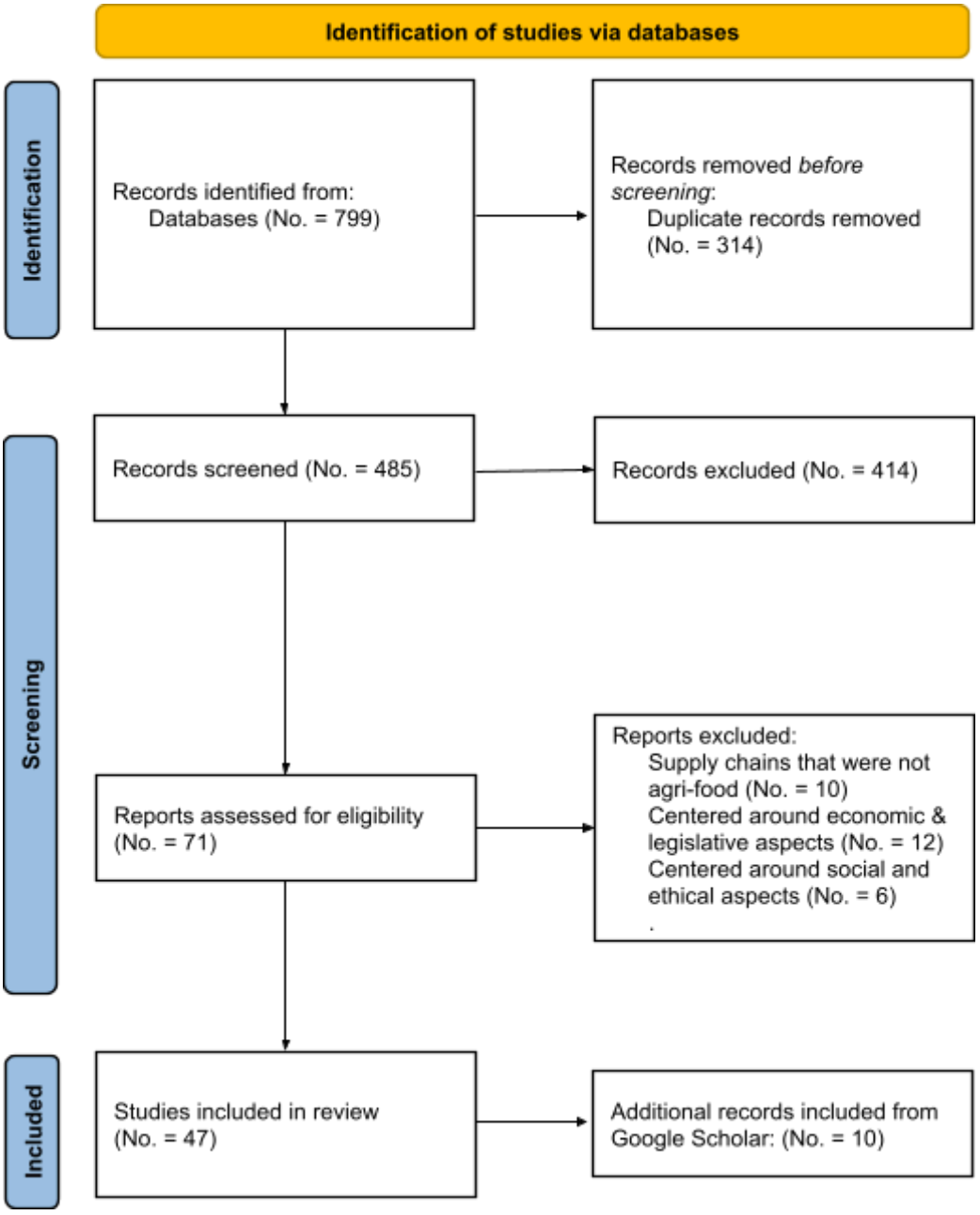
The main recurring issues on which each paper focuses have been identified (see Appendix, Table 2) and include product quality (20), environmental impacts (15), labelling and branding (7), food loss and waste (6), and competitiveness (6).

Figure 2 shows that there has been an increase in the number of publications in the last five years, with 2024 being the year with the most publications. This incrementation can be explained by the introduction of the EU directive 2019/633 on unfair trading practices in the agricultural and food supply chain. More than 70% of all publications dealing with the environmental impacts of UTPs appeared within the last five years, as academic interest increased greatly.

The software VosViewer was utilised to conduct a network analysis uncovering the co-occurrence relationships based on the keyword frequency. As shown in Figure 3, the connections between the various nodes, which represent the keywords, can be visualised. The dimension of the nodes shows how often a keyword has been used in the records reviewed. It can be noted that the largest keyword community is that of "competition", which has a stronger connection with the nodes "commerce", "climate change" and "sustainability". It can be deduced that this word is strongly correlated with the concepts of market power and environmental impact. "Climate change" is the other most frequently mentioned keyword community, in association with "co-creation", and "cosmetic appearance". It seems

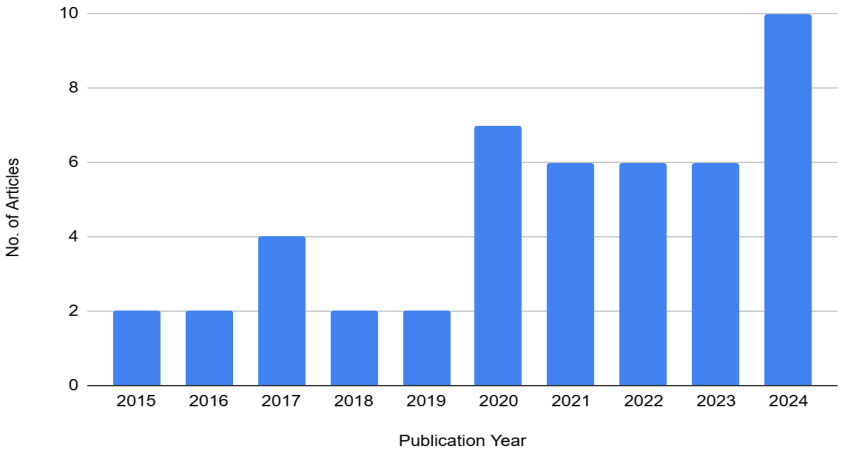
that this keyword has a significant connection with the concepts of value creation, product appearance, and commercialization.

Figure 1 – PRISMA flow diagram



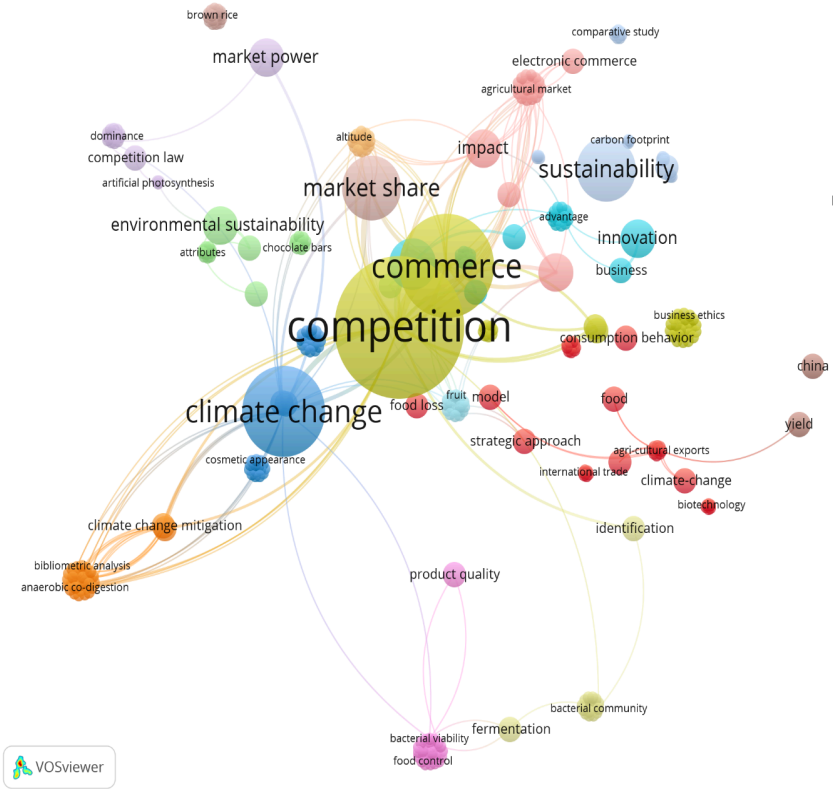
Source: Authors'elaboration

Figure 2 – No. of articles published per year



Source: Authors'elaboration

Figure 3 – Keyword co-occurrence network



Source: Authors' elaboration

4 Discussion

From the results, it has been difficult to find a direct correspondence between UTP and environmental issues. However, there is evidence of a connection between market competition and the relative impacts on the environment.

4.1 Market competitiveness

Every enterprise aims to satisfy the needs of their consumers in order to create a strong customer loyalty in a more efficient way than that of their competitors. UTPs can intervene in this scenario causing imbalances in the market. Furthermore, if UTPs yield a competitive advantage for one actor, others might be forced to follow suit to avoid losing their competitive edge. Among the consequences there is the lack of market transparency, asymmetry along the entire food supply chain, private retailer marketing standards and inequalities in bargaining power (Fałkowski, Ménard, Sexton, Swinnen, & Vandevelde, 2017).

From the study, one of the indirect effects of the regulation (EU 2019/633) is the loss of investments in advanced technology which would favour the transition towards a green production system (Midingoyi, Kassie, Muriithi, Diiro, & Ekesi, 2019; Ogutu, Gödecke, & Qaim, 2020). From an economic perspective in which producers are oriented towards Agriculture 4.0, investments in smart technologies cannot be contained, if the producer is to remain competitive on the market. Generally, to increase profit margins, the simplest and fastest solution for producers is to reduce the cost of production, for example through the use of unsustainable farming methods. However, this would lead to a reduction in the quality of their products. To avoid this, a more sustainable long-term option would be the introduction of new technologies that allow farms to increase production and maximize yields while also incrementing competitive market pressures (Faleri, 2022; Martin-Ortega et al., 2024).

Another possible solution could be to implement a product differentiation strategy which takes into account sustainability attributes that reflect environmental and social pressures (Sok, Borges, Schmidt, & Ajzen, 2021). In fact, in recent years, agricultural producers have introduced innovative technological production and processing systems in order to achieve high standards of product sustainability. Additionally, investments are made to favour positive communication strategies through the divulgation of claims, such as the use of recycled materials in packaging, reducing pesticide use, etc. (Edwards, Sonnino, & Cifuentes, 2024; Merlino, Borra, Bargetto, Blanc, & Massaglia, 2020). Moreover, from the articles reviewed, it emerges that to differentiate the product offering, producers must generate food products that conform to high-quality standards.

Certification plays a fundamental role in guaranteeing compliance with high-quality production standards by following specific production protocols. For example, products with a certified origin and guarantee of traceability, i.e. PDO, PGI, TSG, are deemed of high quality.

Other certifications include those issued by the International Organization for Standardization (i.e. ISO 14001, ISO 14025), which address the problem of sustainable production, including economic, social and environmental needs (Gil, Ruiz, Escrivá, & Manyes, 2017). One of the most important private voluntary certifications for primary production is the GlobalGAP system, which sets standards and procedures for good agricultural practices, food safety, environmental protection, food traceability, and human health (Merlino, Borra, Bargetto, Blanc, & Massaglia, 2020).

On the market, certified products compete with those without certification, where quality controls and origin are not always clearly defined. Achieving certification standards can offer different benefits for producers, such as the possibility of opening up to several markets and improving business performance. Additionally, it helps to manage and mitigate risks related to major environmental concerns, such as emission control and biodiversity loss (Corticeiro, Brás, Tomé, Lillebø, & Vieira, 2024; Verbruggen & Laes, 2021). From a consumer point of view, certification can greatly impact their trust in the brand and their buying decisions (Ab Talib, 2017). UTPs can indirectly influence certification processes, as they are associated with creating unequal value distribution, which can potentially cause economic loss for the producer who is forced to leave the certification procedure.

Consequently, it can be deduced that market competitiveness is linked to the adoption of ethical business practices and responsible consumer purchasing behaviour.

4.2 Environmental impacts

4.2.1 Determination of indirect impacts

From the literature analysis, no direct environmental consequences from UTPs emerge. However, two indirect impacts were identified: the first is the generation of food loss and waste, and the second is the operation of unsustainable production systems. These impacts are caused by imbalances in commercial relationships between suppliers and traders regarding the management of orders and returns and the lack of investment in sustainable technologies. In terms of orders, issues related to discontinuity in delivery requests are most frequent, as well as over-ordering, last-minute orders and unexpected cancellations. In terms of fresh products, there is a loss of the value of unsold goods, which generates food waste and loss. Regarding non-perishable goods, there are extra storage costs to cover. Returns, on the other hand, can be classified as UTPs in case of the return of conforming unsold products. These

practices are characterised by a one-sided, unpredicted nature and lack of transparency. Current systems lack the implementation of technologies that make the production process more sustainable from an economic, social and environmental perspective. Thus, without adequate investment allocation and management, enterprises cannot improve their performance and progress.

According to Porter, Reay, Bomberg, and Higgins (2018), the greatest drivers of food loss and waste are "aesthetic imperfection" and "over planting" of produce. In supply contracts established between producers and retailers, conditions on quantities and delivery times are imposed by the buyer, along with strict product quality standards in terms of aesthetics and features. These private marketing standards are set under the retailers' hypothesis that customers would not be willing to buy suboptimal products (Amicarelli and Bux, 2021; Pietrangeli, Herzberg, Cicatiello, & Schneider, 2023). This kind of behaviour can be classified as a UTP only when it is used strategically to reject conforming products.

Farmers are forced to meet their contractual obligations and deliver a specified tonnage of produce that meets particular standards. In fact, in many cases, if a portion of the yield does not meet the established aesthetic criteria, it is difficult to sell and possibly even to harvest. These aesthetics-centred quality criteria, derived from physical characteristics of attractiveness alone, are imposed on many producers by downstream actors (such as regulators, retailers, and consumers).

According to the Food Waste Index Report (UNEP, 2024), one-fifth of the food produced for human consumption is lost or wasted, the equivalent of one billion meals a day, causing significant environmental, social and economic consequences. When food is lost, the resources, such as water, land, energy, and the materials necessary for production, are lost too.

Food loss and waste generate up to 10% of global greenhouse gas (GHG) emissions, primarily nitrous oxide (N_2O) and nitrates from nitrogenous fertilizers, methane (CH_4) from fermentation and carbon dioxide (CO_2), resulting in 22,500 kt CO_2-eq emissions annually in the European Economic Area (Kazancoglu, Ekinci, Mangla, Sezer, & Kayikci, 2021). Porter, Reay, Bomberg, and Higgins (2018) estimated avoidable food loss and waste from on-farm aesthetic grade-outs of up to 51,500 kt yr1 in the European Economic Area. Furthermore, the use of fresh water for irrigation also contributes to environmental impacts; in fact, agriculture is said to be the largest water exploiter in the world (Berry, 2015).

However, knowledge of losses and waste is not equally recorded along the food chain. In fact, for some phases, there is a lack of primary data necessary to estimate the problem. Certainly, the phases from the post-harvest to the logistics process are the most sensitive, where times and temperatures influence the storage, processing and transportation of food. Packaging is one of the critical phases of the supply chain because it protects the product, especially in the case of perishable foods, and it displays a series of information about the product. In fact, according to some authors, the quality of the

packaging impacts the shelf-life, and the use of improper raw materials can cause damage to the product, deterioration, or the risk of contamination which all lead to food loss (Riesenegger & Hübner, 2022). For example, in Europe 5% of fruit and vegetables are lost in postharvest handling and storage, 2% during processing and packaging, and an additional 10% of fresh and 2% of processed fruit and vegetables during distribution (Surucu-Balci & Tuna, 2021).

Recently, producers have begun promoting their sustainably produced products using green communication strategies in labelling. According to Hartling (2019), eco-labelling can help to regulate and promote climate change mitigation and carbon footprint reduction. However, unfair behaviour may occur, generating negative environmental impacts. In some cases, producer's adopt strategies to convey environmentally friendly production methods using claims, ambiguous wording, green-coloured packaging and nature-evoking images without reflecting an actual environmental commitment, thus deceiving consumers. This phenomenon is known as *Greenwashing* and constitutes a threat to the development of an environmentally and economically sustainable market (Boncinelli, Gerini, Piracci, Bellia, & Casini, 2023).

4.2.2 Potential resolutive scenarios

Among the possible solutions identified, a short supply chain planning period, with fewer production phases and intermediaries, greater transparency in communication strategies, as well as rapid access to local markets, could help to reduce waste, generating fewer impacts and promote adaptation to climate change (Amahnui, Vanegas, Verchot, & Castro-Nunez, 2025; Zeilinger, Kantelhardt, & Niedermayr, 2025).

Another strategy can be to intervene in the supplier-retailer interface in terms of take-back agreements. In this case, retailers can adopt so-called "buy-and-burn strategies" where products are over-purchased and the unsold goods are sent back through reverse returns, while the supplier is forced to accept the returns and cover the extra transport and processing costs. The management of these returns exerts strong pressures in environmental terms and are among the main factors responsible for generating loss and waste of natural resources in the agri-food supply chain (Ghosh & Eriksson, 2019). The environmental impacts of these dynamics have not yet been considered in the current literature. For future research, it would be interesting to implement monitoring systems and raise awareness on the sustainability of these practices.

Some suggestions can be drawn from this study. For producers, it is certainly necessary to focus on targeted agricultural sustainable management. The reuse of residual waste biomass from the returned goods, appropriately treated, could be used in a recovery process for the production of biogas or compost, which would generate a lower impact on the environment by producing environmental credits.

Furthermore, it is necessary to encourage political decision-makers to create proposals that incentivise retailers to improve management of products that are close to the use by date, to opt for products that are locally produced and in season, and to redistribute excess goods by offering discounts or through donations.

The lack of research present on the environmental impact of UTPs in the agri-food sector is more than likely due to the lack of data in agricultural production in terms of impact analysis, because of the fact that this sector is subject to an intrinsic variability that is not present in industrial manufacturing. Scientific research offers various tools capable of assessing the environmental impact of human activities and proposing possible mitigation actions to fill the gaps in the literature. Among these, the methodology that has become a standard in recent decades is the Life Cycle Assessment (LCA), which allows the analysis of an entire production cycle by identifying possible critical points and proposing possible improvements. Another possible approach is that of the analysis of specific case studies with semi-structured interviews in order to obtain timely and comprehensive data, to estimate the economic and environmental effects of the supply chain, and to construct a decision-making framework on the sustainable orientation of commercial practices.

5 Conclusion and outlook

A food supply chain comprises all activities which move food items from a primary producer to final consumers. The farmers represent the first stage of the agri-food chain, where there is a risk of unfair trading practices taking place. These could translate into low bargaining power and anti-competitive practices. Whereas, the consumers represent the final stage of the chain, which, through the adoption of fairness-oriented food choices and perceived value of fair food, can contribute to the sustainable development of the agri-food chain.

From the review, it is clear that these UTPs can generate impacts on an environmental level, such as producing emissions generated from unsold food products, thus contributing to climate change.

Further research is necessary, as there are limited studies available regarding the indicators that measure the level of environmental impact generated from UTPs.

A future prospect could be that of improving the flow of information throughout the supply chain in order to enable a more efficient demand and order forecasting. Additional studies could be conducted on the implementation of blockchain technology in the recording of data throughout the supply chain to increase transparency and quantify both upstream and downstream losses and waste. Therefore, further exploration of problems related to fairness in food value chains and the development of possible

solutions to increase product quality and fairness perceptions among consumers will be conducted in the future.

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Appendix

Table 1 – References of articles reviewed

No.	Authors	Year	Title	Journal/ Book Source	Theme	Keywords
1	Porter, Reay, Bomberg, & Higgins	2018	Avoidable food losses and associated production-phase greenhouse gas emissions arising from application of cosmetic standards to fresh fruit and vegetables in Europe and the UK	*Journal of Cleaner Production*	Food loss and waste	Climate change mitigation, Food supply chain, Cosmetic standards, Fresh fruit and vegetables, Embedded emissions, Food loss and waste
2	Basso, Neves, & Grossi-de-Sa	2024	Agriculture evolution, sustainability and trends, focusing on Brazilian agribusiness: a review	*Frontiers in Sustainable Food Systems*	Sustainable innovation	Biotechnology, Climate changes, Disruptive technologies, Molecular sciences, Scientific research, Sustainable agriculture
3	Ab Talib	2017	Motivations and benefits of *halal* food safety certification	*Journal of Islamic Marketing*	Certification	*Halal*, *Halal* certification, *Halal* food, Food safety certification
4	Bataineh, Sánchez-Sellero, & Ayad	2024	Green is the new black: How research and development and green innovation provide businesses a competitive edge	*Business Strategy and the Environment*	Competitiveness / Product quality	Bias-correction estimation in panel data, Competitive advantage, Fuzzy difference-indifference, Green innovation, Propensity score matching, R&D
5	Berry	2015	Breeding the dairy cow of the future: What do we need?	*Animal Production Science*	Environmental impacts	Genetics, Heritability, Genomic, Breeding objective
6	Boncinelli, Gerini, Piracci, Bellia, & Casini	2023	Effect of executional greenwashing on market share of food products: An empirical study on green-coloured packaging	*Journal of Cleaner Production*	Labelling	Marketing strategy, Choice experiment, Segmentation, Labelling, Environmental sustainability
7	Bruce & Faunce	2015	Sustainable fuel, food, fertilizer and ecosystems through a global artificial photosynthetic system: Overcoming anticompetitive barriers	*Interface Focus*	Environmental impact	Artificial photosynthesis, Carbon dioxide, Fixation, Food and fuel security, Environmental sustainability, Competition law

8	Corticeiro, Brás, Tomé, Lillebø, & Vieira	2024	Forest certification and economic insights: A European perspective	*Frontiers in Forests and Global Change*	Certification	Forest management, Sustainability, FSC, PEFC, Policy, Market share
9	Edenbrandt & Lagerkvist	2024	Can gene-editing accelerate the protein shift? Consumer acceptance of an upcycled meat-substitute	*Food Policy*	Food loss and waste / Environmental impact	Upcycled food, Gene-edited food, Market prediction, Food loss, Food waste, Consumer behaviour
10	Faunce & Bruce	2016	Governing the global food system towards the sustainocene with artificial photosynthesis	*International Food Law and Policy*	Environmental impact	-
11	Federici,Gentilucci, Bernini,Vittadini, & Pellegrini	2021	Ready to eat shelf-stable brown rice in pouches: Effect of moisture content on product's quality and stability	*European Food Research and Technology*	Product quality / Packaging	Brown rice, Ready to eat, Shelf life, Rice texture
12	Gazdecki, Leszczyński, & Zieliński	2021	Food sector as an interactive business world: A framework for research on innovations	*Energies*	Sustainable innovation	Business networks, Business relationships, Co-creation, Open innovations, Food markets, Sustainable food supply
13	Gerber,Dix, & Cash	2024	Marketing plant-based versus animal-sourced foods in online grocery stores: A comparative content analysis of sustainability and other product claims in the United States	*Business Strategy and the Environment*	Product quality / Labelling	E-commerce, Food labels, Health, Marketing, Plant-based, Sustainability
14	Gilbert, Koska, & Oladi	2022	Foreign market entry, upstream market power, and endogenous mode of downstream competition	*Review of International Economics*	Product quality/ Competitiveness	Cournot-Bertrand-Nash equilibrium, Horizontal product differentiation, International trade, Upstream market power, Vertical product differentiation
15	Ginting & Malik	2020	Crude palm oil product quality control using seven tools (case study: XYZ Company)	*IOP Conference Series: Materials Science and Engineering*	Product quality	-
16	Glare & O'Callaghan	2019	Microbial biopesticides for control of invertebrates: Progress from New Zealand	*Journal of Invertebrate Pathogeny*	Environmental impact	Microbial control, Bacteria, Fungi, Nematodes, Regulation, New Zealand, Biological control

17	Hartling	2019	Design a successful program for voluntary carbon footprint reduction	*International Journal of Supply Chain Management*	Labelling / Environmental impact	Eco-label, Sustainability, Carbon footprint, Voluntary program, Corporate social responsibility
18	Hong	2016	Effects of exchange rate and world prices on export price of Vietnamese coffee	*International Journal of Economics and Financial Issues*	Product price / Product quality / Branding	Price, Coffee, Export, Vietnam, Fluctuation
19	Hossain M. A., Hossain M. S., & Akter	2023	Challenges faced by plant growth-promoting bacteria in field-level applications and suggestions to overcome the barriers	*Physiological and Molecular Plant Pathology*	Fertilization	Bacteria, Biofertilizer, Bioinoculant, Formulation, Crop production
20	Iacovides & Vrettos	2022	Falling through the cracks no more? Article 102 TFEU and sustainability: The relation between dominance, environmental degradation, and social injustice	*Journal of Antitrust Enforcement*	Competitiveness / Environmental impact	Competition law, Antitrust, EU law, Monopolisation, Dominance, Market Power, Resilience, Public policy, Environment, Climate change, Social justice, Undertakings, Consolidation, Human rights
21	Küçükgöz & Trząskowska	2022	Nondairy probiotic products: Functional foods that require more attention	*Nutrients*	Product quality / Environmental impact	Fermentation, Functional food, Nondairy food, Plant foods, Probiotic, In vitro digestion
22	Kulikova & Kondratenko	2024	Eco-branding and consumer behavior: Innovative marketing strategies in ecology and environmental sciences	*E3S Web of Conferences*	Branding/Environmental impact	-
23	Liu & Zhang	2020	Green product design considering consumer's income and environmental awareness	*IOP Conference Series: Earth and Environmental Science*	Product quality / Environmental impact	-
24	Liu, Xu M., Xu J., Zhang, Li, Yuan, et al.	2024	Humic acid urea enhanced productivity and reduced active nitrogen loss in summer maize-winter wheat cropping system: A field lysimeter experiment	*Field Crops Research*	Fertilization	Humic acid urea, High-efficiency fertilizer, Nitrogen uptake, Nitrogen loss, Nitrogen footprint, Field lysimeter

25	Lokonon & Egbendewe	2022	Global warming, intermediary market power, and agricultural exports: Evidence for cotton and cashew nuts in West Africa	*Studies in Agriculture Economics*	Market power / Environmental impact	Climatic change, Intermediary market power, Monte Carlo simulations, Price endogenous partial equilibrium, Agricultural exports
26	Lu,Jia, Lev, Zhang, Gao, Zhao, et al.	2021	How to understand "salable fake goods" and "unsalable quality goods"? An insight from the view of quality responsibility and consumers' brand loyalty	*Technology in Society*	Sustainable innovation / Branding / Product quality	Quality responsibility, Consumer loyalty, Technology commitment, Corporate reputation, Brand identification
27	Merlino, Borra, Bargetto, Blanc, & Massaglia	2020	Innovation towards sustainable fresh-cut salad production: Are Italian consumers receptive?	*AIMS Agriculture and Food*	Information asymmetry / Environmental impact	Best-worst scaling, Consumer preferences, Fresh-cut salads, Purchasing decision, Sustainability claims
28	Mézes, Szenteleki, & Gaál	2017	Simulation model for sour cherry product lines	*Computers and Electronics in Agriculture*	Sustainable innovation	Product line, Sector model, Decision support system, Sour cherry
29	Ming, GuoHua, & Wei	2021	Study of the game model of e-commerce information sharing in an agricultural product supply chain based on fuzzy big data and LSGDM	*Technological Forecasting & Social Change*	Information asymmetry / Product quality	Agricultural product supply chain, Evolutionary game, Information sharing, Fuzzy big data, LSGDM, GDM
30	Nassyrova, Yessymkhanova, Issayeva, Omarkhanova, Niyazbekova, Berzhanova, et al.	2020	Kazakhstan meat industry analysis: Import substitution, delivery and statistics	*Entrepreneurship and Sustainability Issues*	Competitiveness / Product quality	Competitiveness, Meat production, Innovation, Import substitution strategy, State regulation
31	Pinedo-López, Baena-Navarro, Carriazo-Regino, Urrea-Ortiz, & Reyes-Guevara	2024	Sustainability strategies: A proposal for food sector SMEs, based on the integration of life cycle assessment and ESG strategies	*Journal of Infrastructure, Policy and Development*	Sustainable innovation / Environmental impact	Sustainability, SMEs, Life cycle assessment, ESG, Clean technologies, Competitiveness, CO2 emissions
32	Pratama & Saragi	2018	Cassava quality classification for tapioca flour ingredients by using ID3 algorithm	*Indonesian Journal of Electrical Engineering and Computer Science*	Product quality	Algorithm, Cassava, ID3, Image, Processing

33	Uyeh, Asem-Hiablie, Park, Kim, Mikhaylov, Woo, et al.	2021	Could Japonica rice be an alternative variety for increased global food security and climate change mitigation?	*Foods*	Product quality / Environmental impact	Rice cultivation, Rice carbon emissions, Hidden hunger, Parboiling, Rrice quality, Rice preference
34	Velásquez & Banchón	2023	Influence of pre-and post-harvest factors on the organoleptic and physicochemical quality of coffee: A short review	*Journal of Food Science Technology*	Product quality	Cofea arabica, Cofea canephora, Organoleptic quality, Coffee
35	Verstraeten, Heeremans, Geuens, & Vermeir	2023	How online grocery shopping drives private label food purchases	*Journal of Business Research*	Labelling	Shopping channel, External product cues, Heuristics, Store brands, Grocery shopping
36	Villas-Boas, Bonnet, & Hilger	2021	Random utility models, wine and experts	*American Journal of Agricultural Economics*	Information asymmetry / Product price / Product quality	Counterfactual simulations, Expert opinion, Field experiment, Information, Labels, Market power, Product attributes, Product differentiation, Random utility models, Structural random coefficients discrete choice models, Structural supply models, Welfare changes, Willingness-to-pay, Wine
37	Zhang & Yang	2022	Influence of greenwashing strategy on pricing: A game-theoretical model for quality heterogeneous enterprises	*Proceedings of the 3rd International Conference on Green Energy, Environment and Sustainable Development*	Market power / Product quality / Competitiveness	Greenwashing behavior, Product quality, Success rate, Pricing decisions
38	Zhang, Bai, & Wang	2024	Green vs. brown: Climate risk showdown – who's thriving, who's diving?	*Journal of International Money and Finance*	Market power	Climate risk, Green firms, Brown firms, Cash flow
39	Gil, Ruiz, Escrivá, Font, & Manyes	2017	A decade of Food Safety Management System based on ISO 22000: A GLOBAL overview	*Revista de Toxicología*	Certification	Food safety, ISO 22000, HACCP, Food processing, Food services
40	Sujianto, Pribadi, Saptati, Mahendri, Santoso, Sondakh, et al.	2024	Assessing Indonesian nutmeg commodity trade competitiveness and developing sustainable strategies in the global market	*Agris on-line Papers in Economics and Informatics*	Competitiveness / Product quality	Trade performance, Competitiveness, Comparative advantage, Nutmeg

41	Xu, Sun, Fan, Teng, Xiong, Zhu, et al.	2017	The brewing process and microbial diversity of strong flavour Chinese spirits: A review	*Journal of the Institute of Brewing*	Product quality	Chinese Baijiu, Strong flavour Chinese spirit, Microorganism, Brewing process
42	Vazquez & Balderas	2023	Sustainability and wine tourism: New challenges and opportunities for a more conscious consumer – The Case of Gramona Wineries	*Handbook of Research on Sustainability Challenges in the Wine Industry*	Product quality	-
43	Maciel-Silva, Buller, Gonçalves, Rostagno, & Forster-Carneiro	2020	Sustainable development in the Legal Amazon: energy recovery from açaí seeds	*Biofuels, Bioproducts & Biorefining*	Product quality	Açaí seeds, Bibliometric analysis, Green energy, Bioeconomy
44	Surucu-Balci & Tuna	2024	Investigating logistics-related food loss drivers: A study on fresh fruit and vegetable supply chain	*Journal of Cleaner Production*	Food loss & waste	Food loss, Food loss drivers, Fruit and vegetable supply chain, Logistics activities, 24 MCDM, Turkey
45	Kazancoglu, Ekinci, Mangla, Sezer, & Kayikci	2021	Performance evaluation of reverse logistics in food supply chains in a circular economy using system dynamics	*Business Strategy and the Environment*	Food loss & waste / Environmental impact	Reverse logistics, System dynamics, Green business performance and environmental impact, Food supply chain, Circular economy
46	Riesenegger & Hübner	2022	Reducing food waste at retail stores: An explorative study	*Sustainability*	Food loss & waste	Assortment, Forecasting, Inventory management, Fresh products, Sustainability
47	Amicarelli & Bux	2021	Food waste measurement toward a fair, healthy and environmental-friendly food system: a critical review	*British Food Journal*	Food loss & waste	Food waste, Food safety, Food security, Food waste measurement, Nutritional security

Source: Authors'elaboration

Table 2 – Main themes present in articles reviewed

Theme	Articles
Product quality	Bataineh et al., 2024; Federici et al., 2021; Gerber et al., 2024; Gilbert et al., 2023; Ginting & Malik, 2020; Hong, 2016; Küçükgöz & Trząskowska, 2022; Liu & Zhang, 2020; Lu et al., 2021; Ming et al., 2021; Nassyrova et al., 2020; Pratama & Saragi, 2018; Uyeh et al., 2021; Velásquez & Banchón, 2023; Villas-Boas et al., 2021; Zhang & Yang, 2022; Sujianto et al., 2024; Xu et al., 2017; Balderas-Cejudo & López, 2023; Maciel-Silva et al., 2022.
Environmental impacts	Berry, 2015; Bruce & Faunce, 2015; Hartling, 2019; Edenbrandt & Lagerkvist, 2024; Faunce & Bruce, 2016; Glare & O'Callaghan, 2019; Iacovides & Vrettos, 2022; Kazancoglu et al., 2021; Küçükgöz & Trząskowska, 2022; Kulikova & Kondratenko, 2024; Liu & Zhang, 2020; Lokonon & Egbendewe, 2022; Merlino et al., 2020; Pinedo-López et al., 2024; Uyeh et al., 2021.
Labelling/Branding	Boncinelli et al., 2023; Hartling, 2019; Gerber et al., 2024; Hong, 2016; Kulikova & Kondratenko, 2024; Lu et al., 2021; Verstraeten et al., 2023.
FWL	Amicarelli & Bux, 2021; Edenbrandt & Lagerkvist, 2024; Kazancoglu et al., 2021; Porter et al., 2018; Riesenegger & Hübner, 2022; Surucu-Balci & Tuna, 2021; Pietrangeli et al., 2023.
Competitiveness	Bataineh et al., 2024; Gilbert et al., 2023; Iacovides & Vrettos, 2022; Nassyrova et al., 2020; Sujianto et al., 2024; Zhang et al., 2022.
Sustainable innovation	Basso et al., 2024; Gazdecki et al., 2021; Lu et al., 2021; Mézes et al., 2017; Pinedo-López et al., 2024.
Certification	Ab Talib, 2017; Corticeiro et al., 2024; Gil et al., 2017.
Market power	Lokonon & Egbendewe, 2022; Zhang et al., 2024; J. Zhang et al., 2022.
Information asymmetry	Merlino et al., 2020; Ming et al., 2021; Villas-Boas et al., 2021.
Product price	Hong, 2016; Villas-Boas et al., 2021.
Fertilization	Hossain et al., 2023; M. Liu et al., 2024.
Packaging	Federici et al., 2021.

Source: Authors'elaboration