The Growth of Human Resource Accounting Research: A Bibliometric Review

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Abstract

This study presents a comprehensive bibliometric analysis of human resource accounting research from 1960 to 2025. Using data from the Scopus database via Publish or Perish software, 200 journal articles were analyzed through RStudio's bibliometrix package and VOSviewer to identify publication trends, research focus, and intellectual development. The findings show a steady growth in scholarly interest beginning in the late 1990s, peaking in 2015, followed by a decline in publication volume but continued citation activity in recent years. Early research primarily explored conceptual foundations and measurement approaches, while recent studies have focused on practical application, interdisciplinary integration, and strategic relevance. The increasing recognition of human capital's role in organizational performance has driven continued academic interest in human research accounting. This study contributes to the literature by mapping the evolution of the field and highlighting current trends and future directions for research and practice.

Keywords : *accounting research, bibliometric analysis, human resource accounting, research growth*.
JEL Codes : M12, M41, J24

INTRODUCTION

Human resources represent one of the most assets an organization can have, and investment in workforce substantially contribute to improved business outcomes; however, despite this significance, human resources are not recognized as assets in the company's financial statements or balance sheet, while tangible assets such as infrastructure, inputs, and outputs are duly accounted for (Patra & Khatik, 2003). Human resources denote the individuals employed by an organization, encompassing their skills, knowledge, and abilities, which constitute valuable assets essential to achieving the organization's objectives. These individuals have competencies and capabilities that are cultivated and managed to support the organization's adaptability and success, particularly ongoing digital transformation. Moreover, the well-being, satisfaction, and commitment of employees play a critical role in enhancing organizational performance (Peña et al., 2024; Piwowar-Sulej et al., 2024; Ye & Li, 2024). This exclusion makes a long-standing limitation in conventional accounting systems, which were primarily developed for manufacturing-based economies with a focus on physical and financial assets.

To address this oversight, Human Resources Accounting (HRA) is a field of accounting that focuses on quantifying and reporting the value of an organization's human capital. Human resource accounting is a concept that promised to be a valuable tool for both management and accounting practices (Powell et al., 1976). According to (Flamholtz, 1974), human resource accounting refers to the practice of recognizing individuals as critical organizational assets and involves the measurement of both the cost and the value that human resources contribute to the organization. He also considers human resource accounting can be defined as the systematic process of identifying, quantifying, and conveying information regarding human resources to facilitate informed decision-making.

The need for a new form of accounting arises from the limitations of traditional accounting systems, which were primarily designed for manufacturing firms where physical and financial assets are predominant as highlighted by (Rhode et al., 1976) service-oriented organizations rapidly expanding sectors, human resources often hold greater strategic value than tangible or financial assets. Financial reporting significantly enhanced by incorporating the value of human capital, thereby providing more accurate and meaningful information for decision-making. Competencies such as critical thinking, problem-solving, professional skepticism, and effective teamwork recognized to professional practice,

often being valued on par with or even exceeding the importance of technical proficiency in principles and standards (Flaming & Mosca, 2019). The research made by (Surarchith & Vaddadi, 2019) shows human resource accounting practices are expected to have a significant positive impact on the decision-making processes of senior management.

The research made by (Euske & Rock, 1983) stated about when human capital theory evolved, the concept of human resource valuation emerged, and successive refinements ultimately led to the establishment of human resource accounting as a distinct area within the field of accounting. The integration of human resources into organizational accounting frameworks began to emerge around the mid-1960s (Gröjer & Johanson, 1998). This was a period marked by the widespread presence of radical thought across the Western. Additionally, the concept of accounting for society stands as a clear example of countercultural thinking, offering an alternative to the dominant practices and culture of corporate accounting at the time (Roslender et al., 2015). He also said that human resource accounting emerged as a significant research focus in the mid-1970s; however, due to the lack of practical insights on integrating labor into balance sheets or improving labor control, its prominence waned rapidly after 1980. Between the nineteenth century and the mid-twentieth century, cost accounting became increasingly important across industries due to substantial investments in factories, natural resources, and equipment (Hemamalini et al., 2011). Despite early momentum, the research made by (Ha et al., 2020) shows industrial 4.0 is significantly reshaping the human resource across various sectors, including accounting, consequently, firms are increasingly compelled to adapt and improve working environments and practices to align with the evolving demands and technological advancements brought about by this industrial transformation.

This study undertakes a bibliometric review of human resource accounting to explicitly trace the intellectual and conceptual development of the field. The increasing emphasis on critical soft skills such as problem-solving, critical thinking, and teamwork alongside technical expertise highlights evolving expectations within the accounting profession. Research shows that human resource accounting practices can notably enhance senior management's decision-making, underscoring the role of human capital in organizational. Organizations must adapt their accounting practices to reflect the value of human capital and to keep pace with workforce changes and technological advancements.

Understanding the intellectual progression of human resource accounting for bridging this gap and providing organizations with tools to better capture the strategic value of their workforce. As businesses face rapid technological change and shifting workforce dynamics, accurately accounting for human capital becomes increasingly important for effective decision-making, organizational adaptability, and sustained success. Ultimately, this study aims to contribute to advancing accounting practices that reflect the true drivers of organizational value in the modern economy.

RESEARCH METHOD

This study uses a quantitative bibliometric approach to analyze the development and trends in human resource accounting research. The bibliographic data used in this study retrieved from Scopus, one of the most comprehensive and widely used academic databases for bibliometric research. To retrieve relevant literature on human resource accounting, the author used the Publish or Perish software, sourcing data from the Scopus database. No restrictions were placed on subject areas or document types, as the objective was to capture a comprehensive view of how human resource accounting has been applied across various academic fields, not only within economics or accounting.

Scopus restricts export to a maximum of 200 documents via this method, the search was limited accordingly. Total 200 documents related to human resource using the search terms "Human Resource Accounting" from the period from 1960 to 2025 and limited to English-language. Although many sources identify the mid-1960s as the period when human resource accounting formally began gaining attention, selecting 1960 as the starting point allows for the inclusion of early foundational works and precursory discussions that laid the groundwork for the field. The dataset consists of 171 journal articles, 24 review papers, 3 conference papers, and 2 short surveys. RStudio was used to conduct descriptive statistics, publication trend analysis, and other advanced bibliometric evaluations using tools such as the bibliometrix R package. In parallel, VOSviewer was specifically used for network visualization and overlay visualization of co-occurrence.

To ensure the accuracy and relevance of the data used for bibliometric research, the dataset has been meticulously curated to include only journal publications. This deliberate focus excludes other type's outputs such as books, book chapters, conference proceedings, or reports, thereby maintaining consistency and specificity in the analysis. By limiting the dataset exclusively to journal articles, the study ensures a standardized format of academic contributions, which enhances the reliability of the findings and allows for more precise trend identification and comparison over time. Furthermore, in order to streamline the data organization and facilitate efficient sorting and filtering, the term "journal" has been systematically included in the publication name field. Incorporating this naming convention improved data accuracy by minimizing the risk of including non-journal publications that could otherwise introduce inconsistencies or bias into the analysis.

RESULTS AND DISCUSSION

Based on data retrieved from the Scopus database, 200 documents collected for analysis. The data presented according to the year of publication and the number of articles published annually. The selected timeframe spans from 1960 to 2025. The starting point of 1960 chosen as the integration of human resources into organizational accounting frameworks began to take shape in the mid-1960s, marking the initial development of human resource accounting as a formal area of study. Year of publication and number of articles can be seen in Figure 1.
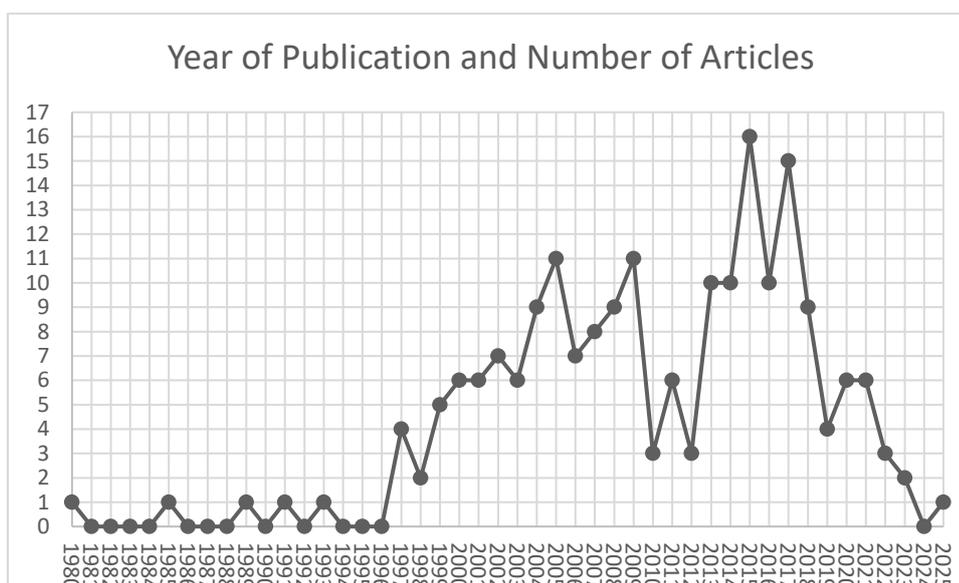

Figure 1. Year of Publication and Number of Articles

The bibliometric data spanning from 1980 to 2025 presents a comprehensive overview of the publication trends associated with the selected research domain. During the initial period from 1980 to 1996, scholarly output was minimal, with only a few isolated publications recorded. This phase is indicative of limited academic engagement, possibly due to the nascent stage of the field or a lack of widespread recognition within the scholarly community. A notable increase in publication activity began in 1997, marking the transition into a period of gradual growth. Between 1997 and 2006, there was a steady rise in the number of publications, reflecting growing interest and emerging relevance of the topic in academic discourse. This momentum continued and intensified significantly from 2007 to 2021, a period characterized by sustained high output and scholarly maturity. The peak observed in 2015, with 16 publications, followed closely by 2017 with 15 publications. These figures suggest that the topic had reached a prominent position within the academic landscape, likely driven by technological advancements, policy developments, or increased research funding. However, the trend changed in the subsequent years. From 2022 onwards, there has been a discernible decline in publication volume. The years 2022 and 2023 saw only a handful of publications, while 2024 recorded none, and only one article published in 2025 to date. This decline attributed to a range of factors, including shifts in research priorities, delays in indexing within academic databases, or a potential saturation in the field.

Table 1. Top 10 Most Cited Journals

Rank	Journal	Citations
1	Journal of Health Psychology	3,728
2	Journal of Operations Management	2,120
3	Academy of Management Journal	1,189
4	Journal of the American College of Surgeons	753
5	Journal of Clinical Epidemiology	718
6	Journal of Hand Surgery	649
7	Open AIDS Journal	640
8	European Management Journal	609
9	Academy of Management Journal	595
10	International Journal of Technology Management	588

The citation distribution among the top 10 journals reveals significant variability, with the Journal of Health Psychology emerging as the most cited journal, recording 3,728 citations. This substantial citation count indicates the journal's role in the dissemination of research related to human capital, particularly in areas concerning employee health and well-being. Following closely, the Journal of Operations Management records 2,120 citations, underscoring the relevance of operations management to the field of Human Resource Accounting, especially as organizations increasingly recognize the value of human capital in their operations. The Academy of Management Journal, with citation counts of 1,189 and 595 in the third and ninth positions respectively, highlights the journal's significant and sustained influence in the field of management research, particularly in areas intersecting with human resource management and accounting. These citation figures demonstrate the ongoing academic interest in human resource accounting -related topics within organizational studies. Other journals, such as the Journal of the American College of Surgeons (753 citations) and Journal of Clinical Epidemiology (718 citations), although more focused on clinical and medical research, contribute to the citation network surrounding human resource accounting, suggesting that human resource accounting research is relevant across various sectors, including healthcare. The continued prominence of journals in management and healthcare suggests that future research in Human Resource Accounting may increasingly address the role of human capital in both corporate and healthcare sectors. As organizations continue to recognize the importance of their human resources, there will likely be a growing focus on developing sophisticated methods for quantifying and managing human capital.
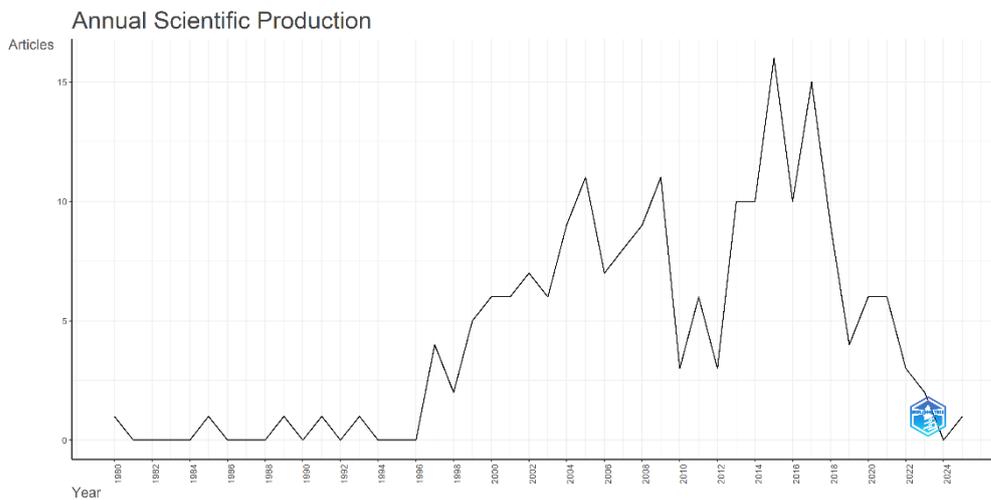

Figure 2. Annual Scientific Production (R-Studio)

Based on the data presented. The graph shows the yearly volume of scholarly publications in the field of human resource accounting from 1980 to 2025. The vertical axis represents the number of articles, ranging from zero to 20, while the horizontal axis denotes the years.

1. Early Period (1980–1996): Scientific production was minimal and sporadic, with only five years (1980, 1985, 1989, 1991, and 1993) recording one article each. The intervening years show no recorded publications, suggesting either limited research activity or selective reporting during this period.
2. Growth Phase (1997–2009): A marked increase in productivity began in 1997, with four articles published, and followed by a sustained period of activity. The peak during this phase occurred in

2005, with 11 articles. The years 2004 (nine articles), 2008 (nine articles), and 2009 (11 articles) also reflect high productivity. This period indicates a consolidation of research efforts and likely an expansion of research capacity or collaboration.

3. Fluctuations (2010–2017): The period saw fluctuating output, with a low of three articles in 2010 and 2012, and a peak of 16 articles in 2015. The year 2017 also recorded a high output of 15 articles, suggesting a resurgence in productivity. These fluctuations may reflect changes in funding, research focus, or external factors such as collaborations or institutional priorities.

4. Recent Period (2018–2025): Productivity declined after 2018, with nine articles in 2018, followed by a sharp drop to four articles in 2019. The years 2020 and 2021 maintained moderate output (6 articles each), but 2022 and 2023 saw further declines (3 and 2 articles, respectively). No articles were published in 2024, and only one article is recorded for 2025. This recent decline may indicate a change in research focus, resource constraints, or incomplete data for 2024–2025.

The data suggests a research entity with a slow start, a productive middle period, and a recent decline in output. The peak in 2015 and high output in 2017 may correspond to significant research projects, funding availability, or collaborative efforts. The decline in recent years could reflect external factors (e.g., shifts in research priorities, reduced funding, or global disruptions such as the COVID-19 pandemic) or incomplete data, particularly for 2024 and 2025. The single article in 2025 may indicate ongoing but reduced activity or preliminary data for the year. The apparent paradox of declining output alongside rising impact underscores a potential maturation of the field. The apparent paradox of declining output alongside rising impact underscores a potential maturation of the field. Human resource accounting research may now be entering a phase where its foundational theories are well-established, and the focus has shifted toward real-world applications, policy influence, and methodological refinement rather than expanding the literature base.
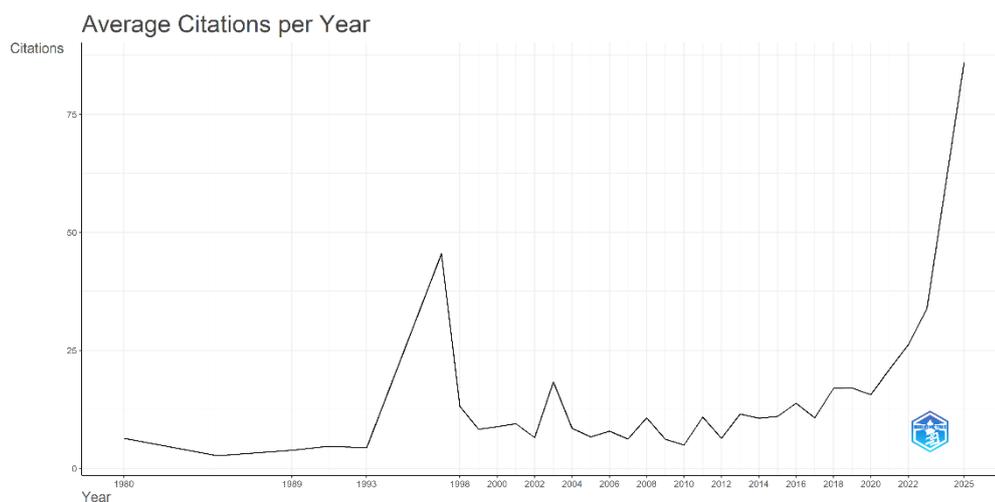

Figure 3. Average Citations per Year (R-Studio)

Based on the data presented. The chart provides valuable insights into the changing impact of published research in human resource accounting over time. By analyzing the average number of citations received by articles published each year between 1980 and 2025 it shows the vertical axis represents the citation count, ranging from zero to 100, while the horizontal axis denotes the years.

1. Early Period (1980–1993): Citation rates were relatively low, with MeanTCperYear ranging from 2.68 (1985) to 6.37 (1980). Each of these years had only one article, limiting the sample size. The low citation rates may reflect limited visibility, smaller research communities, or the nascent stage of the field during this period.

2. Emerging Impact (1997–2003): A significant spike occurred in 1997, with a MeanTCperYear of 45.44 for four articles, indicating highly impactful publications. The year 2003 also showed a strong citation rate (18.33 for 6 articles). These years suggest the publication of influential works that garnered substantial attention over time.

3. Stable but Variable Impact (2004–2017): Citation rates fluctuated, with MeanTCperYear ranging from 4.96 (2010) to 13.79 (2016). Notable years include 2008 (10.71), 2011 (10.88), 2013

(11.52), 2014 (10.59), 2015 (11.02), 2016 (13.79), and 2017 (10.71). This period reflects consistent citation impact, with articles generally receiving moderate to high annual citations.

4. Recent Period (2018–2025): Citation rates increased significantly in recent years, with MeanTCperYear values of 16.94 (2018), 17.04 (2019), 15.61 (2020), 21.00 (2021), 26.17 (2022), 33.83 (2023), and an exceptionally high 86.00 (2025). The high values in 2022–2025, despite fewer articles, suggest that recent publications are highly impactful or cited in a short time frame. However, the 2025 value (based on one article) may be an outlier or reflect incomplete data.

The growth in 1997 suggests the publication of seminal works that continue to influence the field, as evidenced by high citations over 29 citable years. The stable citation rates from 2004 to 2017 reflect consistent scholarly impact, with articles maintaining relevance over time. The sharp increase in citation rates from 2018 onward, particularly in 2022–2025, suggests that recent publications are either highly relevant to current research trends or published in high-visibility venues. However, the 2025 value of 86.00, based on a single article, requires cautious interpretation, as it may reflect a highly cited article or data limitations (e.g., a single high-impact citation in a short time frame). Taken together, these trends reveal an important transition: human resource accounting research may be changing away from volume-based academic output toward selective, high-impact contributions that resonate more deeply within and beyond the discipline. The rising citation impact—even amid declining publication rates—suggests a maturing field with growing strategic and societal relevance.
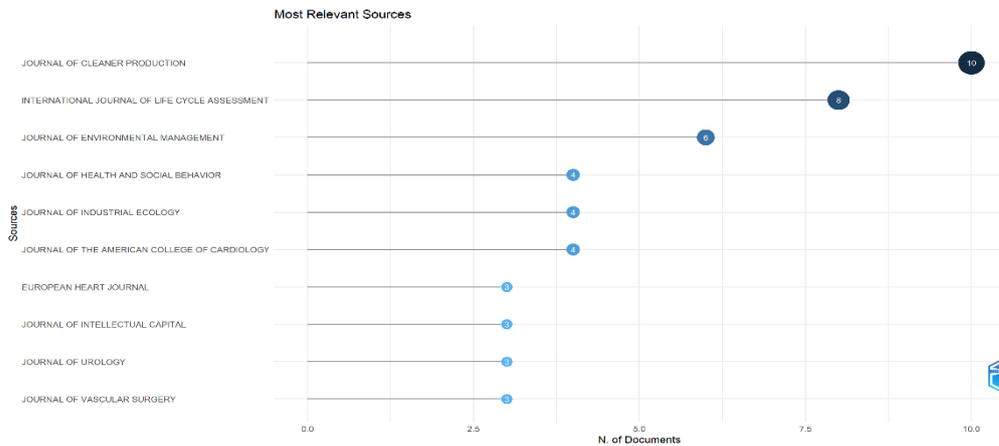

Figure 4. Most Relevant Sources (R-Studio)

Based from the figure above. The chart identifies the academic journals that have published the highest number of documents included in the dataset, thereby highlighting the primary outlets for research in the field of human resource accounting. The vertical axis displays the names of the journals, while the horizontal axis represents the corresponding number of publications, ranging from zero to ten.

1. Journal of Cleaner Production
   This journal is the most prolific source, with 10 documents published. Its focus on sustainable production and environmental management suggests that the dataset includes a significant amount of research related to sustainability, cleaner technologies, or environmental impact mitigation.
2. International Journal of Life Cycle Assessment
   This journal has eight documents and journal ranks second. Its emphasis on life cycle assessment indicates that the dataset contains research focused on evaluating the environmental impacts of products or processes across their entire life cycle, aligning with sustainability themes.
3. Journal of Environmental Management
   This journal has published six documents, making it the third most relevant source. Its focus on environmental management practices suggests that the dataset includes studies on managing environmental resources, pollution control, or policy development.
4. Journal of Health and Social Behavior, Journal of Industrial Ecology, Journal of the American College of Cardiology
   Each of these journals has published four documents. The presence of these journals indicates a diversity of research themes within the dataset, including social aspects of health, industrial sustainability, and cardiovascular health.

5. European Heart Journal, Journal of Intellectual Capital, Journal of Urology, and Journal of Vascular Surgery
    Each of these journals has published three documents. Their inclusion highlights additional research areas, such as cardiology, intellectual capital management, urology, and vascular surgery, suggesting that the dataset spans multiple disciplines.

This trend indicates human resource accounting increasingly being framed not just as a financial or human resource management concern, but as a component of organizational sustainability and accountability. The integration of human capital considerations into environmental and social impact assessments reflects an interdisciplinary broadening of the field. This diversity in publication venues reflects a growing acceptance and application of human resource accounting concepts across sectors, and may be partially responsible for the rise in citation impact observed in recent years. Publishing in high-visibility, interdisciplinary journals likely expands the audience for human resource accounting work, boosting both scholarly influence and practical relevance.
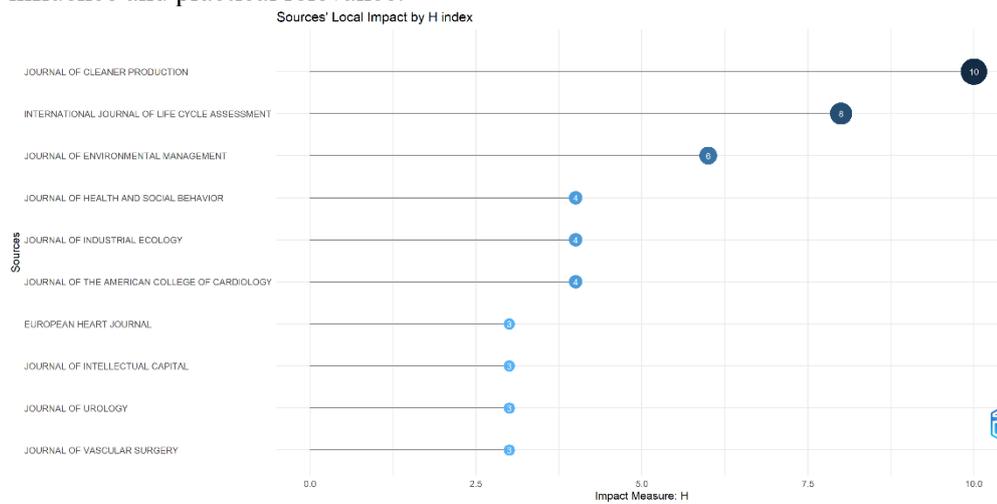

Figure 5. Sources' Local Impact by H index (R-Studio)

Based on the figure above. The chart shows the scholarly impact of various journals within the dataset, as measured by their H-index. The H-index is a widely recognized metric that quantifies both the productivity and citation impact of a journal, where a journal with an H-index of h has published h papers, each of which has been cited at least h times.

1. Journal of Cleaner Production leads with the highest H-index of 10, indicating that it has 10 articles that have each been cited at least 10 times within the dataset. This suggests that the journal is a dominant source of impactful research in this field, likely focusing on sustainability and environmental management topics.
2. International Journal of Life Cycle Assessment follows with an H-index of eight, reflecting a strong influence in life cycle assessment research, a critical area for evaluating environmental impacts across product life cycles.
3. Journal of Environmental Management has an H-index of six, indicating a notable but lesser impact compared to the top two journals. It likely publishes research on environmental policy, management practices, and sustainability.
4. Journal of Health and Social Behavior, Journal of Industrial Ecology, and Journal of the American College of Cardiology each have an H-index of four, showing moderate local impact. These journals span diverse fields, including social behavior, industrial ecology, and cardiology, suggesting interdisciplinary relevance within the dataset.
5. European Heart Journal, Journal of Intellectual Capital, Journal of Urology, and Journal of Vascular Surgery each have an H-index of three, indicating a lower but still significant local impact. These journals cover specialized fields such as cardiology, intellectual capital, urology, and vascular surgery, reflecting the dataset's broad scope.

The H-index distribution affirms the growing concentration of human resource accounting influence in high-visibility, interdisciplinary journals—particularly those emphasizing sustainability, organizational

performance, and lifecycle assessment. This shift likely contributes to the surge in citation rates observed in recent years, further signalling a maturation of the field.
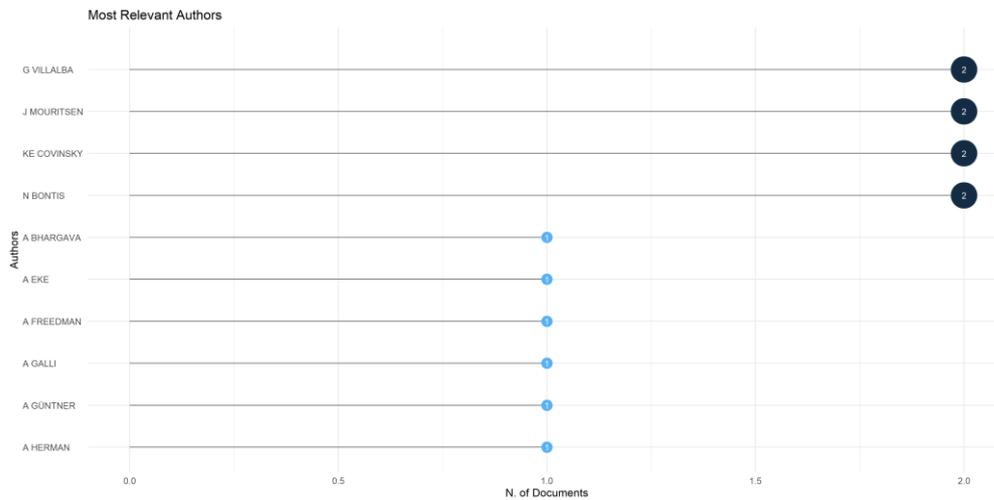

Figure 6. Most Relevant Authors (R-Studio)

Based on the figure above. The chart ranks authors according to the number of publications they have contributed to the dataset, offering a clear indication of their research productivity and active engagement within the field of human resource accounting.

1. G. Villalba, J. Mouritsen, K.E. Covinsky, and N. Bontis each have authored two documents, making them the most prolific contributors in the dataset. Their consistent output suggests they are key figures in the research area, potentially specializing in the dominant themes of the dataset, such as environmental management or health-related topics.
2. Bhargava, A. Eke, A. Freedman, A. Galli, A. Guntner, and A. Herman each have one document, indicating lower productivity but still notable relevance within the dataset.

This pattern may reflect the emerging and interdisciplinary nature of human resource accounting research, where expertise and contributions are spread across a diverse pool of scholars rather than concentrated in a small number of specialists. The presence of several authors with multiple publications also signals the potential formation of core research groups or collaborative networks driving ongoing scholarship.
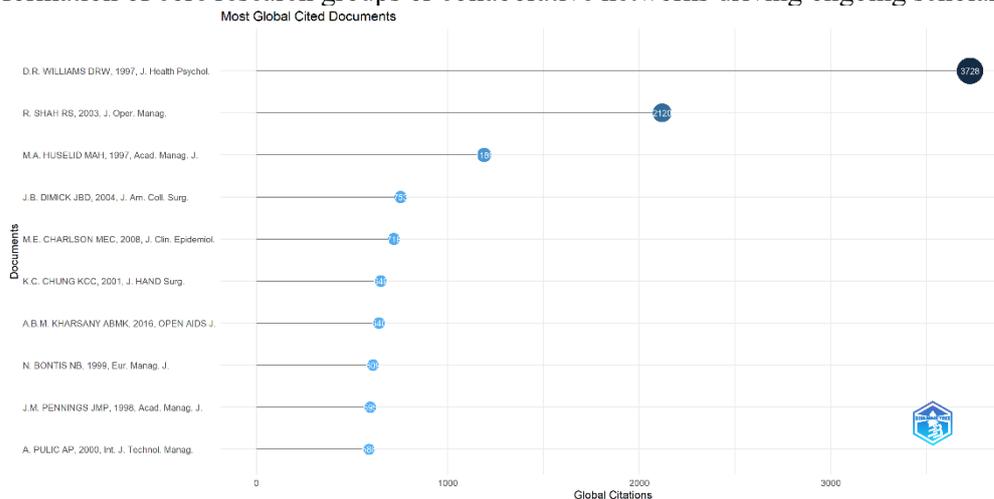

Figure 7. Most Global Cited Documents (R-Studio)

Based on the figure above. The chart presents a ranked list of the top scholarly works based on the total number of global citations they have received. This metric reflects the worldwide academic influence and recognition of each document, indicating their significance and impact within the broader field of research.

1. D.R. Williams (1997), J. Health Psychol. is the most cited document with 3728 citations, indicating its seminal influence, likely in health psychology, possibly addressing social determinants of health.
2. R. Shah (2003), Oper. Manag. has 2120 citations, suggesting significant impact in operations management, potentially focusing on supply chain or sustainability practices.
3. M.A. Huselid (1997), Acad. Manag. J. has 1189 citations, reflecting influence in management research, likely on human resource management or organizational performance.
4. J.B. Dimick (2004), Am. Coll. Surg. has 753 citations, indicating relevance in surgical research, possibly related to cardiovascular or general surgery outcomes.
5. M.E. Charlson (2008), Clin. Epidemiol. has 716 citations, suggesting impact in clinical epidemiology, likely focusing on comorbidity indices or health outcomes.
6. C. Chung (2001), Hand Surg. has 540 citations, indicating influence in hand surgery, possibly on surgical techniques or outcomes.
7. A.B.M. Kharsany (2016), Open AIDS J. has 540 citations, reflecting impact in HIV/AIDS research, likely addressing epidemiology or public health interventions.
8. N. Bontis (1999), Eur. Manag. J. has 505 citations, showing influence in management, possibly on knowledge management or intellectual capital.
9. J.M. Pennings (1998), Acad. Manag. J. has 502 citations, indicating relevance in management research, potentially on organizational behavior or strategy.
10. Pulic (2000), Int. J. Technol. Manag. has 486 citations, suggesting impact in technology management, likely on intellectual capital or innovation.

The discrepancy between the highly cited journals and the most prolific sources in the dataset likely reflects the nature of interdisciplinary influence and citation patterns in human resource accounting research. Journals appear among the most cited because they publish influential articles that are frequently referenced by human resource accounting researchers, even if the volume of human resource accounting-specific publications in these journals is relatively low. This suggests that impactful human resource accounting -related work may be embedded within broader research topics in these journals. Conversely, journals with higher publication counts on human resource accounting may focus more directly on the field but have fewer landmark papers that achieve widespread citation. The citation impact reflects not just volume but also the cross-disciplinary relevance and influence of the research and the importance of considering both quantity and citation quality in bibliometric analyses.
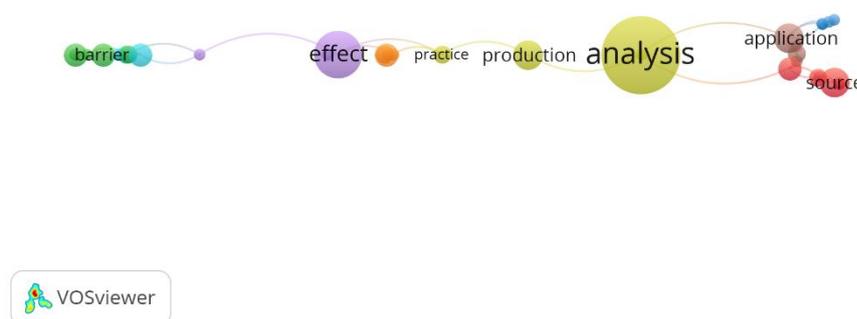

Figure 8. Network Visualization (VOSviewer)

Network Visualization shows the relationships between key terms extracted from the dataset, likely derived from titles, abstracts, or keywords of scholarly documents. The links between nodes indicate co-occurrence relationships, where the thickness of the lines represents the strength of the association between terms (i.e., how often they appear together in the same document). The visualization identifies four primary terms: barrier, effect, practice, and analysis with an additional term source closely associated with analysis. These terms are likely keywords or concepts central to the research area under investigation.

1. The terms "barrier," "effect," "practice," "production," "analysis," "application," "source," and "systematic review" form a single interconnected cluster, indicating that these concepts are closely related within the research domain. This suggests a field where barriers, effects, practices, production processes, analytical methods, applications, data sources, and systematic reviews are studied in conjunction, reflecting an integrated research approach.
2. The term "analysis" serves as a central node, with direct links to "practice," "production," "application," and "source." This centrality underscores the pivotal role of analytical methods in tying together various aspects of the research.
3. "Barrier" is linked to "effect," and "effect" is connected to "practice," a linear progression that suggests a research focus on understanding how barriers influence the effects of certain practices.
4. "Application" and "source" are both directly linked to "analysis," indicating that the application of research findings and the identification of data or resource sources are closely tied to analytical processes.
5. "Systematic review," while not visible in the initial visualization, is now identified as part of the network. It is likely connected to "analysis," as systematic reviews often involve analytical synthesis of existing research, aligning with the dataset's emphasis on evidence-based evaluation.

The node for "barrier" is moderately sized, indicating a notable frequency of occurrence. Barriers might relate to challenges in adopting sustainable practices, implementing environmental policies, or addressing health interventions, aligning with journals like the Journal of Cleaner Production. The term "effect" is prominent and strongly linked to "barrier" and "practice," suggesting a focus on the impacts of barriers or practices, potentially in environmental or health contexts. The term "practice" is connected to "effect" and "analysis," indicating a focus on evaluating specific practices (e.g., sustainable or clinical practices). The term "production" is linked to "practice" and "analysis," suggesting a focus on production processes, possibly related to sustainable production or health-related production. The largest node, "analysis," reflects its critical role in evaluating practices, production processes, applications, and sources. The term "application" is linked to "analysis," indicating a focus on applying research findings in practical contexts. The term "source" is connected to "analysis," suggesting that identifying or evaluating sources (e.g., data, energy, or resources) is a recurring theme. The newly identified term "systematic review" likely plays a significant role in the dataset, as systematic reviews are comprehensive syntheses of existing research, often used to consolidate findings on barriers, effects, practices, and analytical methods. Its connection to "analysis" is inferred, given the analytical nature of systematic reviews.
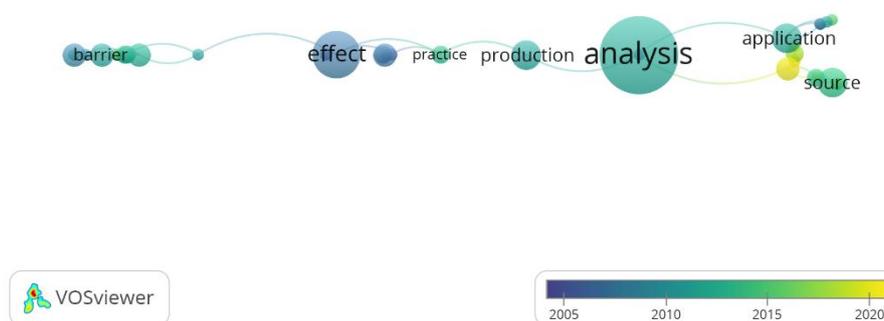

Figure 9. Overlay Visualization (VOSviewer)

Overlay Visualization builds on the Network Visualization by adding a temporal dimension. Each node is color-coded to indicate the average publication year of documents associated with the term, with the color gradient ranging from blue (earlier years, around 2005) to yellow (later years, around 2020). This visualization provides insights into the evolution of research focus over time.
1. The node for "effect" is colored in a dark blue shade, corresponding to an average publication year around 2005. This suggests that research on the effects of certain practices or barriers was

prominent in the earliest years of the dataset. This could reflect foundational studies on the impacts of barriers or practices, such as the environmental effects of industrial processes or the health outcomes of specific interventions.

2. The node for "barrier" is in a slightly lighter blue-green shade, indicating an average publication year around 2005–2010. This suggests that research on barriers was also prominent in the early years, though slightly later than the focus on effects, possibly as a follow-up to identify the barriers contributing to those outcomes.

3. The node for "practice" is in a greenish hue, corresponding to an average publication year around 2010–2015. This indicates that research on practices gained traction in the middle of the dataset's timeline, potentially reflecting a shift toward evaluating and implementing solutions to address the barriers and effects identified earlier.

4. The term "production" is in a similar greenish shade, also corresponding to an average publication year around 2010–2015. This suggests that production processes became a focus during the same period as practices, possibly reflecting a growing interest in sustainable production or health-related production processes.

5. The node for "source" is now identified as being in a greenish shade, similar to "practice" and "production," corresponding to an average publication year around 2010–2015. This indicates that the focus on sources—such as data sources, energy sources, or resource origins—was prominent during this mid-period, likely reflecting the need to evaluate sources as part of the evaluation of practices and production processes.

6. The term "analysis" is in a light green shade, suggesting an average publication year around 2015. This indicates that analytical studies became more prominent in the mid-to-late period of the dataset, likely reflecting advancements in analytical methods or a growing emphasis on evidence-based research.

7. The node for "application" is now identified as being the same shade as "analysis," which is a light green shade, corresponding to an average publication year around 2015. This suggests that the focus on applying research findings emerged around the same time as the focus on analysis, likely reflecting the need to translate analytical findings into practical outcomes.

8. The node for "systematic review" is in a yellow shade, corresponding to an average publication year around 2020. This indicates that systematic reviews are a recent development within the dataset, likely reflecting a trend toward synthesizing existing research to provide comprehensive overviews of the field.

Overlay Visualization in VOSviewer show a compelling narrative about the evolution of research within this field. The progression from "effect" and "barrier" (2005–2010) to "practice," "production," and "source" (2010–2015) to "analysis" and "application" (2015) to "systematic review" (2020) indicates a clear temporal evolution in research focus. Early research likely concentrated on understanding the effects of certain practices or interventions and identifying the barriers that influence those effects. By 2010–2015, the focus changed toward studying specific practices to address these barriers and effects, exploring production processes, and evaluating sources. This period likely saw an increase in solution-oriented research, evaluating how practices, production methods, and sources could mitigate identified challenges. Around 2015, the emphasis on "analysis" and "application" suggests a maturation of the field, with researchers focusing on rigorous analytical methods and the practical application of findings. The most recent period (2020), marks a notable transition—suggesting the field is now mature enough to consolidate existing knowledge and assess its cumulative progress. This trajectory from problem identification to applied research and finally to synthesis through reviews strongly indicates a maturing, structured research domain.

CONCLUSION AND SUGGESTION

This bibliometric analysis provides a comprehensive view of the evolution and current state of human resource accounting research over a 65-year span. The study reveals a field that developed gradually, gaining momentum in the late 1990s, peaking in 2015, and entering a phase of consolidation in recent years. Publication volume has declined post-2018, citation impact and scholarly influence have increased, suggesting a change from foundational research toward application, refinement, and synthesis.

Analysis using VOSviewer confirms research focus from early inquiries into effects and barriers to more sophisticated studies of practices, production, analysis, and systematic reviews. This change suggests that

human resource is transitioning from an exploratory to a mature phase, characterized by interdisciplinary integration, practical application, and evidence-based synthesis. This study reaffirms that human resource accounting is a dynamic and evolving field.

As organizations increasingly recognize human capital as central to value creation, research in human resource accounting will likely continue to expand its boundaries—bridging traditional accounting with emerging themes such as sustainability, organizational behavior, and health outcomes. Future research should explore the practical implementation of human resource accounting frameworks and their policy implications, ensuring that academic developments translate into tangible benefits for organizations and society.

REFERENCES

Euske, K. J., & Rock, C. T. (1983). Integrating human resource accounting into the public policy process: An Illustration. *Journal of Accounting and Public Policy*, *2*(2), 99–114. Doi.org:10.1016/0278-4254(83)90003-0

Flamholtz, E. (1974). Human resource accounting: A review of theory and research. *Journal of Management Studies*, *11*(1), 44–61. Doi.org:10.1111/j.1467-6486.1974.tb00872.x

Flaming, L., & Mosca, J. (2019). Should accounting majors have human resource training in compliance, coaching, team-building and mentoring skills? *Journal of Higher Education Theory and Practice*, *19*(5), 73–82. Doi.org:10.33423/jhetp.v19i5.2283

Gröjer, J., & Johanson, U. (1998). Current development in human resource costing and accounting. *Accounting, Auditing & Accountability Journal*, *11*(4), 495–506. Doi.org:10.1108/09513579810231501

Ha, S. T., Ha, H. H., Xuan, T., Nguyen, H., Quynh, T., Duong, L., & Do, D. T. (2020). A study on the quality of accounting human resources in Hanoi. *International Journal of Innovation, Creativity and Change*, *13*(1), 861–875.

Hemamalini, P., Anitha, R., & Devasenathipathi, T. (2011). Human resource accounting: An effective strategy for human assets control. *Prabandhan: Indian Journal of Management*, *4*. Doi.org:10.17010//2011/v4i2/62092

Patra, R., & Khatik, S. K. (2003). Human resource accounting policies and practices: A case study of Bharat Heavy Electricals Limited, Bhopal, India. *International Journal of Human Resources Development and Management*, *3*(4), 285–296. Doi.org:10.1504/IJHRDM.2003.003407

Peña, I., Andrade, S. M., María Muñoz, R., & Barba-Sánchez, V. (2024). Wellness programs, perceived organizational support, and their influence on organizational performance: An analysis within the framework of sustainable human resource management. *SAGE Open*, *14*(1). Doi.org:10.1177/21582440241229358

Piwowar-Sulej, K., Blštáková, J., Ližbetinová, L., & Zagorsek, B. (2024). The impact of digitalization on employees' future competencies: Has human resource development a conditional role here? *Journal of Organizational Change Management*, *37*(8), 36–52. Doi.org:10.1108/JOCM-10-2023-0426

Powell, James Donald, Sciullo, Henry A, & Mattson, Gertrude. (1976). Human resource accounting: Why the delay? *Journal of Management*, *2*(2), 25–31. Doi.org:10.1177/014920637600200204

Rhode, J. G., III, E. E. L., & Sundem, G. L. (1976). Human resource accounting: A critical assessment. *Industrial Relations: A Journal of Economy and Society*, *15*(1), 13–25. Doi.org:10.1111/j.1468-232X.1976.tb00620.x

Roslender, R., Marks, A., & Stevenson, J. (2015). Damned if you do, damned if you don't: conflicting perspectives on the virtues of accounting for people. *Critical Perspectives on Accounting*, *27*, 43–55. Doi.org:10.1016/j.cpa.2014.06.002

Surarchith, N. K., & Vaddadi, K. M. (2019). Impact of human resource accounting practices on decision making in the organization – evidence from a private company in Kurdistan Region of Iraq. *International Journal of Innovative Technology and Exploring Engineering*, *8*(9S3), 1251–1254. Doi.org:10.35940/ijitee.I3276.0789S319

Ye, W., & Li, Z. (2024). The impact of socially responsible human resource management on employees' environmental citizenship behavior: The role of psychological safety and contingent reward leadership. *SAGE Open*, *14*(2). Doi.org:10.1177/21582440241254272