Leaderpreneurship in Higher Education: A Bibliometric Analysis

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Abstract

This study examines the emerging concept of leaderpreneurship in higher education through a comprehensive bibliometric analysis. By analysing 162 documents from 128 sources published between 2014 and 2024, this research explores the convergence of leadership and entrepreneurship in academic settings. The findings indicate significant growth in leaderpreneurship research, with an annual increase of 4.14%, highlighting distinct patterns in both theoretical development and practical implementation. Key themes identified in the analysis include entrepreneurial leadership development, institutional transformation, and ecosystem building within higher education contexts.

Keywords: Leaderpreneurship; Higher Education; Bibliometric Analysis; Entrepreneurial Leadership; Institutional Transformation.

Introduction

The higher education landscape is undergoing significant transformations driven by technological advancements, shifting student demographics, and evolving societal needs. These forces are placing immense pressure on academic institutions to reconsider traditional leadership and management models. Historically, leadership in higher education has relied on hierarchical structures, emphasizing academic expertise and administrative skills. However, as institutional challenges grow increasingly complex, this conventional model is proving inadequate in addressing the rapidly changing environment. With rising demands for interdisciplinary knowledge, digital integration, and more inclusive student recruitment and retention, there is a pressing need for agile, innovative, and entrepreneurial leadership approaches (Ahamat et al., 2021; Al-Jubari et al., 2019).

Traditional academic leaders often lack the entrepreneurial mindset necessary to drive growth, foster innovation, and effectively respond to external pressures. This gap has led to the emergence of a new leadership paradigm in higher education: leaderpreneurship. Leaderpreneurship integrates traditional leadership qualities—such as strategic vision, decision-making, and organizational management—with entrepreneurial thinking (Baldini et al., 2007). This approach encourages creativity, risk-taking, and proactive problem-solving, offering a promising pathway for academic institutions to remain competitive, responsive, and relevant in an increasingly complex global educational landscape. Recent research underscores the growing significance of entrepreneurial thinking in academic leadership. For instance, Ahamat et al. (2021) emphasize the need for leaders capable of navigating higher education's evolving landscape while remaining committed to institutional goals.

A bibliometric analysis has identified over 160 publications at the intersection of leadership and entrepreneurship in higher education, with an average citation impact of 14.25 per document, reflecting the concept's growing academic relevance (Whittaker & Montgomery,

2022). While the field of leaderpreneurship continues to develop, its potential to shape future educational leadership practices is evident. However, despite increasing scholarly interest, comprehensive frameworks for integrating entrepreneurial principles into higher education leadership remain scarce. Implementing leaderpreneurship in academic institutions poses challenges, including resistance to change, limited resources, and the need to balance traditional academic values with innovative strategies (Hasche & Linton, 2021). While leaderpreneurship holds the potential to transform institutional management, its adoption must be both strategic and intentional.

Research Results
An extensive analysis of the Scopus database reveals notable trends in leaderpreneurship research publication from 2014 to 2024. The data indicate fluctuations in annual publication output, with a significant peak in 2021, when 25 articles were published. This surge was followed by a stabilization period between 2022 and 2024, with an average of 15 publications per year. These patterns reflect a growing academic interest in leaderpreneurship within higher education, driven by evolving global educational landscapes and shifting institutional priorities (Crow et al., 2019; Benneworth & Charles, 2005).

The observed trend suggests that leaderpreneurship is emerging as a distinct academic field, particularly as universities increasingly integrate entrepreneurial principles into leadership development programs. The continued research interest in this area underscores its relevance in addressing the challenges of modern higher education leadership.
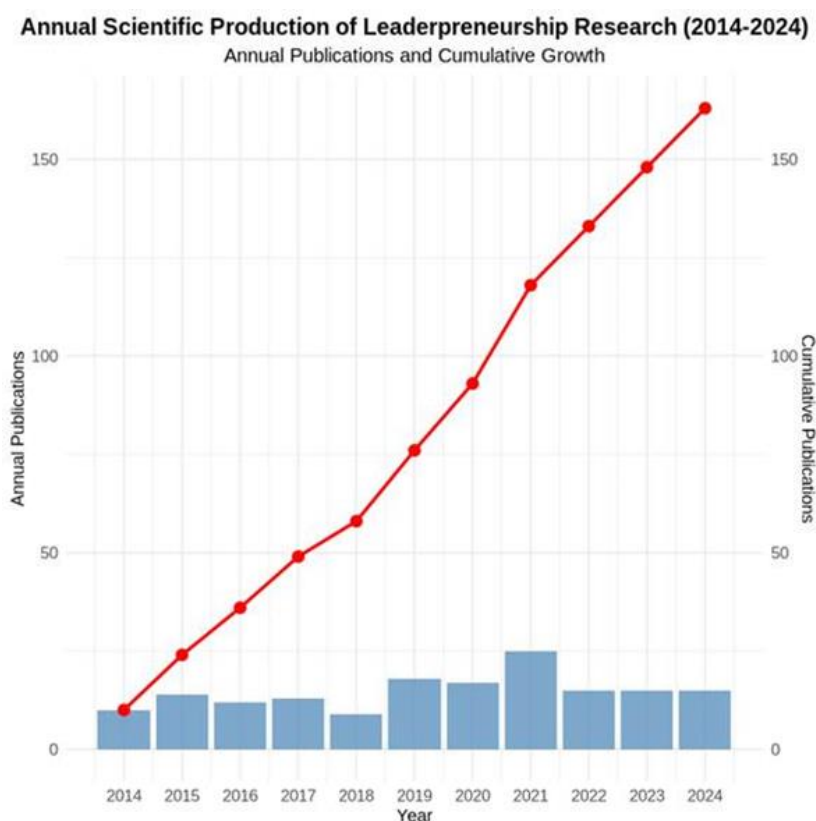

Figure 1. Annual Scientific Production of Leaderpreneurship Research (2014-2024)
Note: Data sourced from Scopus database showing publication trends over a decade.

Thematic Analysis

The bibliometric analysis of keyword occurrences in leaderpreneurship research provides insights into the thematic composition of the field. As illustrated in Figure 2, the distribution of keywords highlights its multidimensional nature, spanning educational, entrepreneurial, and developmental domains. The most frequently cited keyword, "university", appears 583 times (1.06%), underscoring the field's primary focus on higher education institutions, where leaderpreneurship theories and practices are most commonly applied. Following closely are "entrepreneurial" (540 occurrences, 0.98%) and "leadership" (516 occurrences, 0.94%), emphasizing the central role of business-minded leadership in research (Balven et al., 2018; Neves & Brito, 2020; Yusof & Jain, 2010). Additionally, "business" (484 occurrences) and "entrepreneurship" (483 occurrences) point to the practical application of leadership principles within entrepreneurial environments. The prominence of "students" (479 occurrences) and "education" (444 occurrences) further reinforces the field's focus on developing the next generation of entrepreneurial leaders (Harrison & Leitch, 1994).
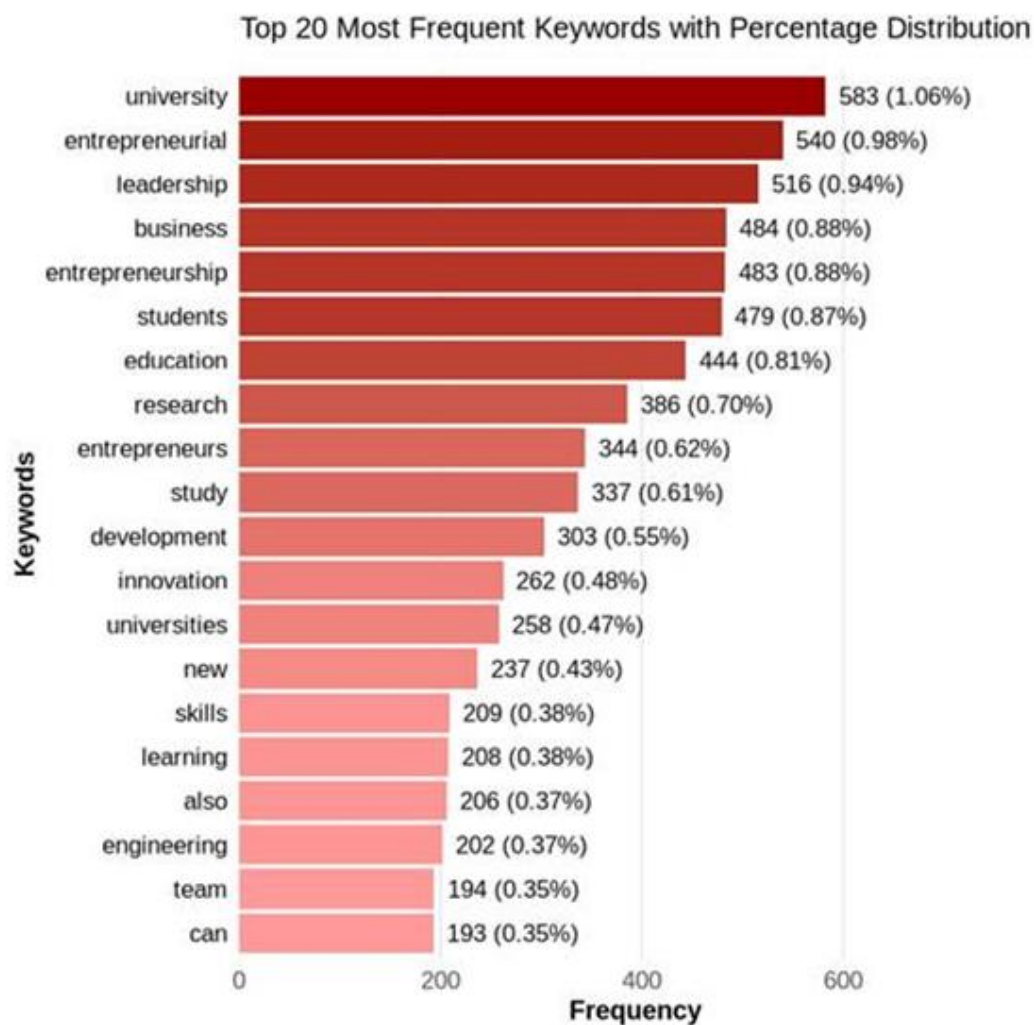
Figure 2. Top 20 Most Frequent Keywords with Percentage Distribution
in Leaderpreneurship Research
Note: Analysis based on keyword frequency in Scopus-indexed publications (2014-2024)

Thematic clustering reveals three core research dimensions shaping leaderpreneurship studies:

- *Academic Context*
  Dominated by institutional terms like "university", this cluster highlights the field's strong academic foundation. Keywords such as "students" and "education" indicate a significant emphasis on fostering leaderpreneurial skills within higher education (Wright & Phan, 2018).
- *Entrepreneurial Dimension*
  Represented by terms like "entrepreneurial," "business," and "entrepreneurship," this cluster underscores the field's integration with business practices and entrepreneurial leadership. Research in this area seeks to bridge leadership development with practical entrepreneurial activities, particularly within university settings (Peris-Ortiz et al., 2016).
- *Development Focus*
  Keywords such as "development," "innovation," and "skills" highlight the emphasis on practical applications of leaderpreneurship. This cluster reflects the growing importance of skill-building and innovation in leaderpreneurial education, advocating for hands-on, real-world learning experiences (Miranda et al., 2017).

These findings suggest that leaderpreneurship research is evolving as a distinct academic field, with increasing relevance in both theoretical discourse and practical applications.

Bibliometric Metrics and Publishing Patterns

A comprehensive review of 162 documents published across 128 academic sources reveals notable bibliometric metrics in leaderpreneurship research. The average citation count of 14.25 per document indicates a meaningful academic impact, demonstrating the field's growing relevance. Additionally, the steady annual growth rate of 4.14% reinforces the increasing academic engagement with leaderpreneurship (Kasalak et al., 2022). These metrics suggest that the field is not only expanding but also gaining scholarly recognition, as reflected in its increasing citation frequency.

Publication Venues and Sources

Leaderpreneurship research is disseminated across a variety of journals and academic conferences, reflecting its interdisciplinary nature. The ASEE Annual Conference and Exposition is the leading publication venue, with 10 articles published on the topic. Following closely are journals such as Industrial Robot (8 articles) and Sustainability (4 articles). This distribution highlights that leaderpreneurship research extends beyond educational forums to domains focusing on technology and sustainability, suggesting that the field attracts a diverse academic audience, including educators, administrators, business professionals, and technology researchers (Bodas Freitas & Verspagen, 2017).

Collaboration and Authorship Patterns

Leaderpreneurship research is characterized by strong collaborative networks, with 458 contributing authors. While 47 documents were authored by a single researcher, the majority involved multiple contributors, with an average of 2.94 authors per paper. This high level of collaboration underscores the field's interdisciplinary engagement, integrating expertise from education, business, and other related domains. Notably, Pransky J. emerges as the most prolific author, contributing 8 publications, demonstrating a significant influence on leaderpreneurship research (Kasalak et al., 2022; Crow et al., 2019).

Conceptual Structure Analysis

The Multiple Correspondence Analysis (MCA) identifies two primary research clusters in leaderpreneurship studies. The first cluster emphasizes the intersection of education and entrepreneurship, reflecting the academic foundations of the field. The second cluster highlights technology and innovation, showcasing their role in shaping leaderpreneurial practices (Baldini et al., 2007; Peris-Ortiz et al., 2016). These clusters illustrate the dual focus of leaderpreneurship research: fostering academic leadership while promoting an entrepreneurial mindset essential for success in modern industries.
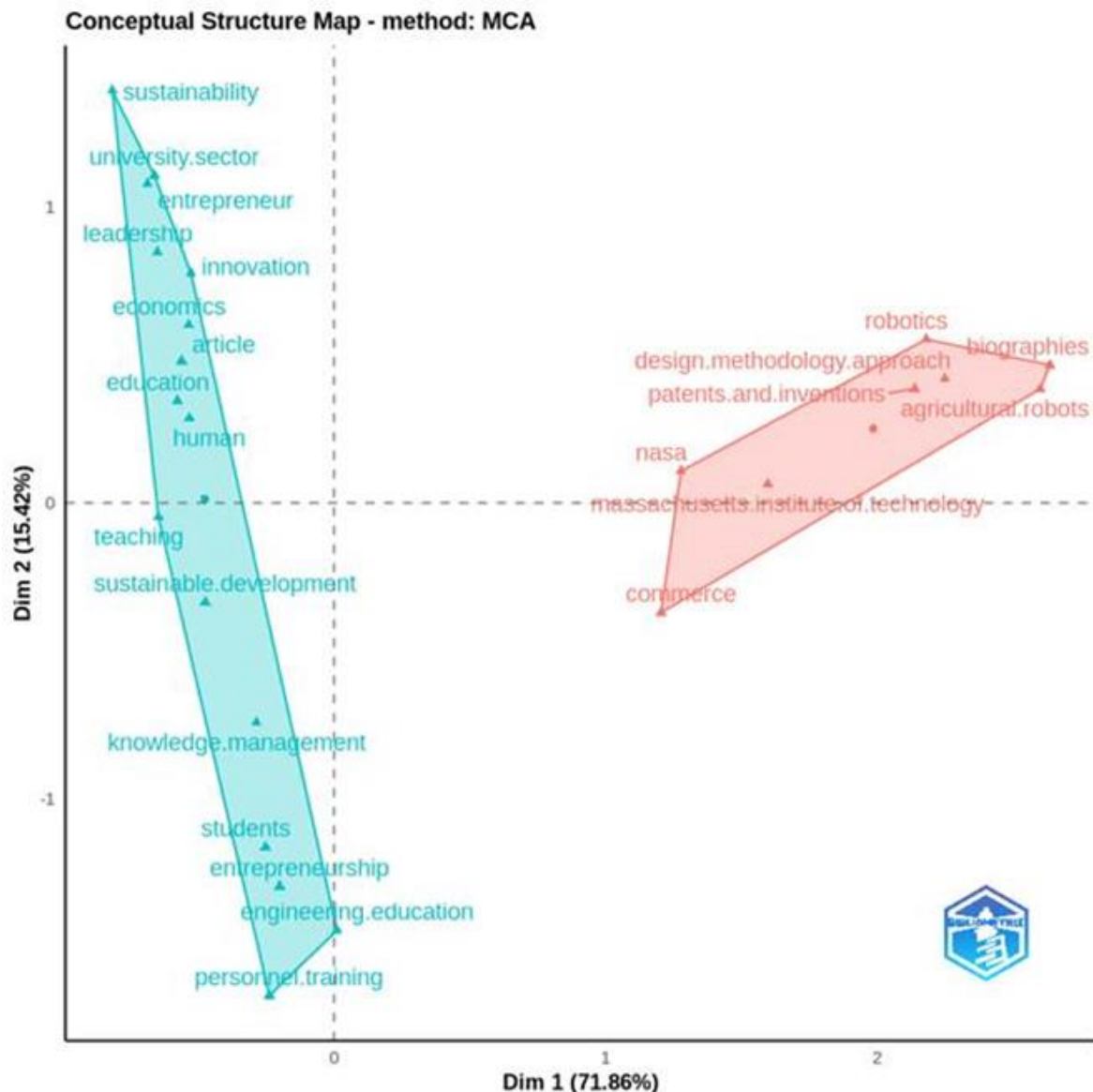
Figure 3. Conceptual Structure Map Using Multiple Correspondence Analysis (MCA)
Note: Two-dimensional representation of research themes showing educational-entrepreneurial cluster (left) and technological-innovation cluster (right).

Hierarchical Clustering Analysis

The hierarchical clustering analysis, illustrated in Figure 4, provides deeper insights into the relationships between key research themes in leaderpreneurship. The analysis reveals strong correlations between management and technology, emphasizing the interdisciplinary overlap

between these domains. Additionally, the business theme exhibits self-correlation and positive associations with other themes, reinforcing its central role in leaderpreneurship research.

Moreover, leadership and entrepreneurship demonstrate moderate correlations with innovation, suggesting that entrepreneurial leadership is closely tied to innovative practices (Hasche & Linton, 2021). These findings highlight the interconnected nature of leaderpreneurship research, where business-oriented leadership, technological advancements, and innovation-driven entrepreneurship collectively shape the field's development.
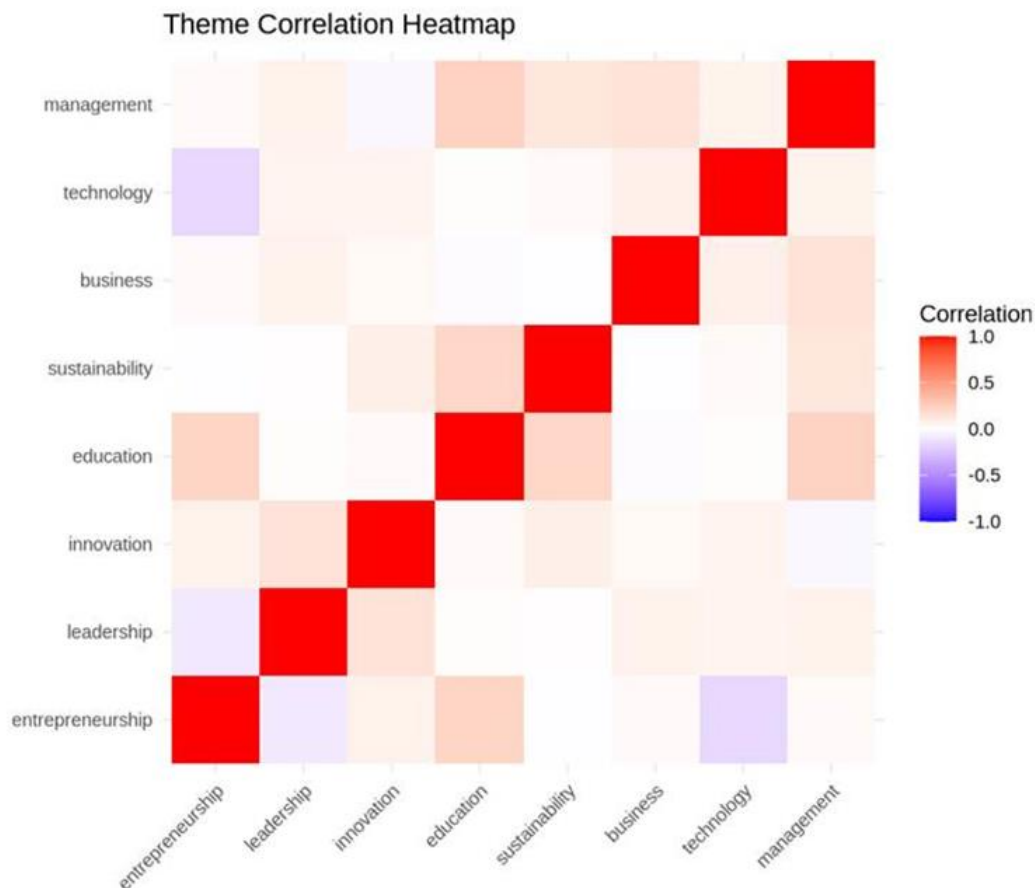

Figure 4. Theme Correlation Heatmap in Leaderpreneurship Research
Note: Red indicates positive correlation (1.0), blue indicates negative correlation (-1.0), with varying intensities showing correlation strength.

Correlation Analysis
The correlation analysis provides deeper insights into the interrelationships between key themes in leaderpreneurship research. Several important patterns emerge, shedding light on how different research domains converge or diverge within the field.

Core Theme Correlations
The analysis reveals a strong positive correlation between Management and Technology, indicating that leadership in the context of leaderpreneurship is closely intertwined with

technological advancements and managerial practices. This finding underscores the synergistic relationship between strategic management and technological innovation in modern leadership.

Additionally, the Business theme exhibits a robust self-correlation, highlighting its foundational role within leaderpreneurship literature. This self-correlation also demonstrates moderate positive associations with other themes, reinforcing the notion that business concepts are integral to leadership and entrepreneurship discussions.

Furthermore, Sustainability emerges as a distinct yet interrelated cluster, particularly linked to education-related themes. This suggests that sustainability is frequently explored within the framework of educational development and leadership training, emphasizing its role in shaping entrepreneurial leadership in higher education.

Interdisciplinary Linkages

Moderate positive correlations are observed between Leadership and Entrepreneurship, as well as with Innovation, highlighting their interconnected nature. This suggests that leadership is increasingly viewed as a key driver of entrepreneurial and innovative outcomes in higher education.

The Education theme exhibits balanced correlations across multiple domains, reflecting its central role in bridging business, technology, and sustainability within leaderpreneurship research. Meanwhile, Technology demonstrates varied correlations, showing a strong positive relationship with Management but a somewhat negative correlation with certain Entrepreneurial aspects. This suggests that while technological leadership aligns with business innovation, it may also introduce complexities that do not entirely align with all entrepreneurial practices.

Theme Independence

Certain themes exhibit relative independence within the research landscape. For instance, some aspects of Technology and Entrepreneurship show negative correlations, suggesting that these domains follow distinct research trajectories or face challenges in integration. This finding indicates that while technology and entrepreneurship are fundamental to leaderpreneurship, they are often explored through different academic lenses or methodologies, underscoring the need for a more nuanced understanding of their intersections.
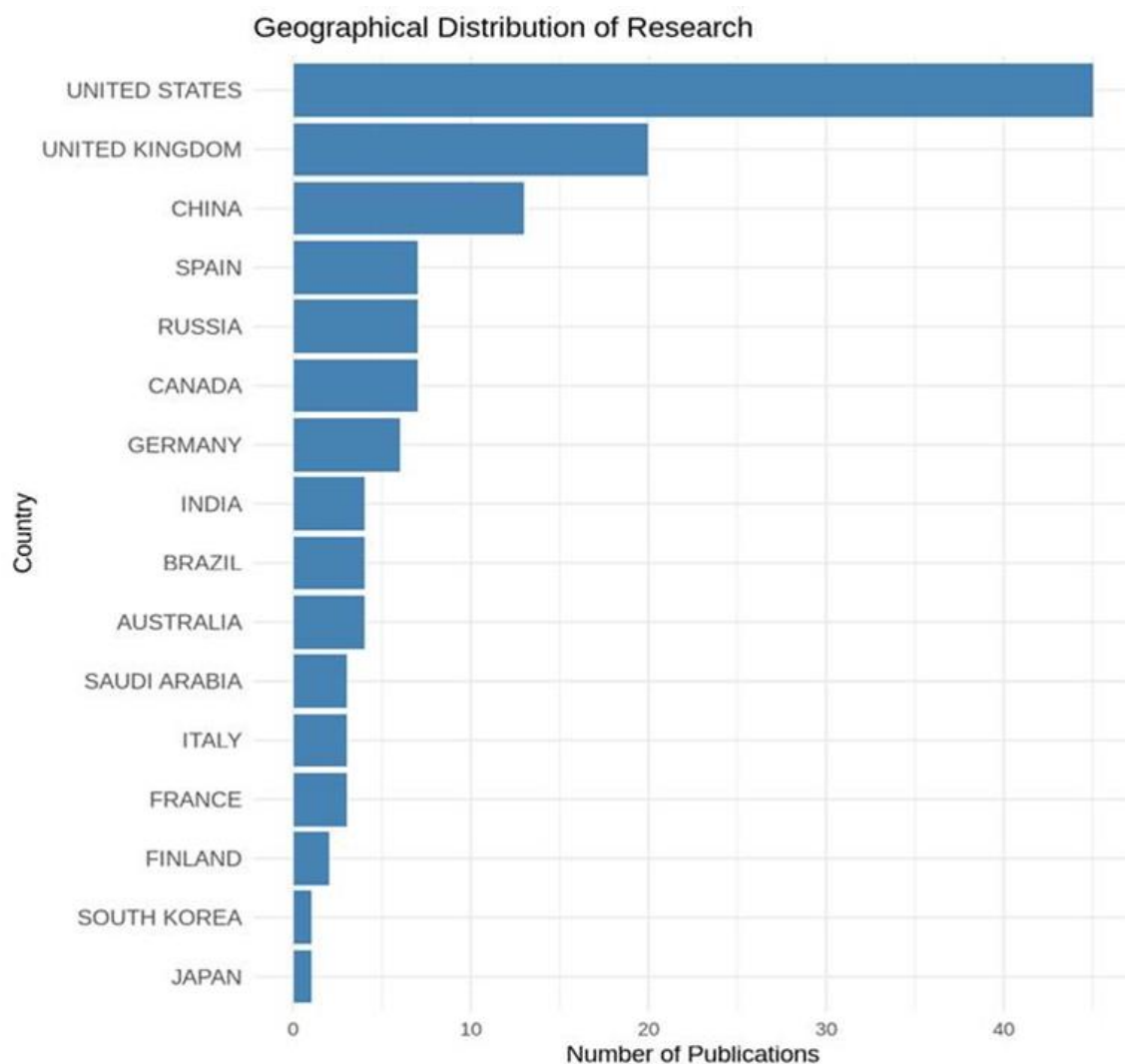
Geographical Distribution of Research

The geographical analysis of leaderpreneurship research contributions highlights broad global interest in this field. As illustrated in Figure 5, research activity is significant across various regions, with notable contributions from North America, Europe, and Asia. This widespread engagement underscores the universal relevance of leaderpreneurship, with scholars approaching the topic from diverse cultural, educational, and economic perspectives (Whittaker & Montgomery, 2022).

Moreover, the global distribution of research suggests that leaderpreneurship principles are not confined to a specific educational or regional context. Instead, they are increasingly recognized as valuable across different education systems and sectors worldwide. This reflects the growing importance of integrating leadership and entrepreneurship into university curricula, ensuring

that higher education institutions remain adaptable and responsive to contemporary challenges (Kasalak et al., 2022).

Figure 5. Geographic Distribution of Leaderpreneurship Research Publications
Note: Bar chart showing number of publications by country (2014-2024)
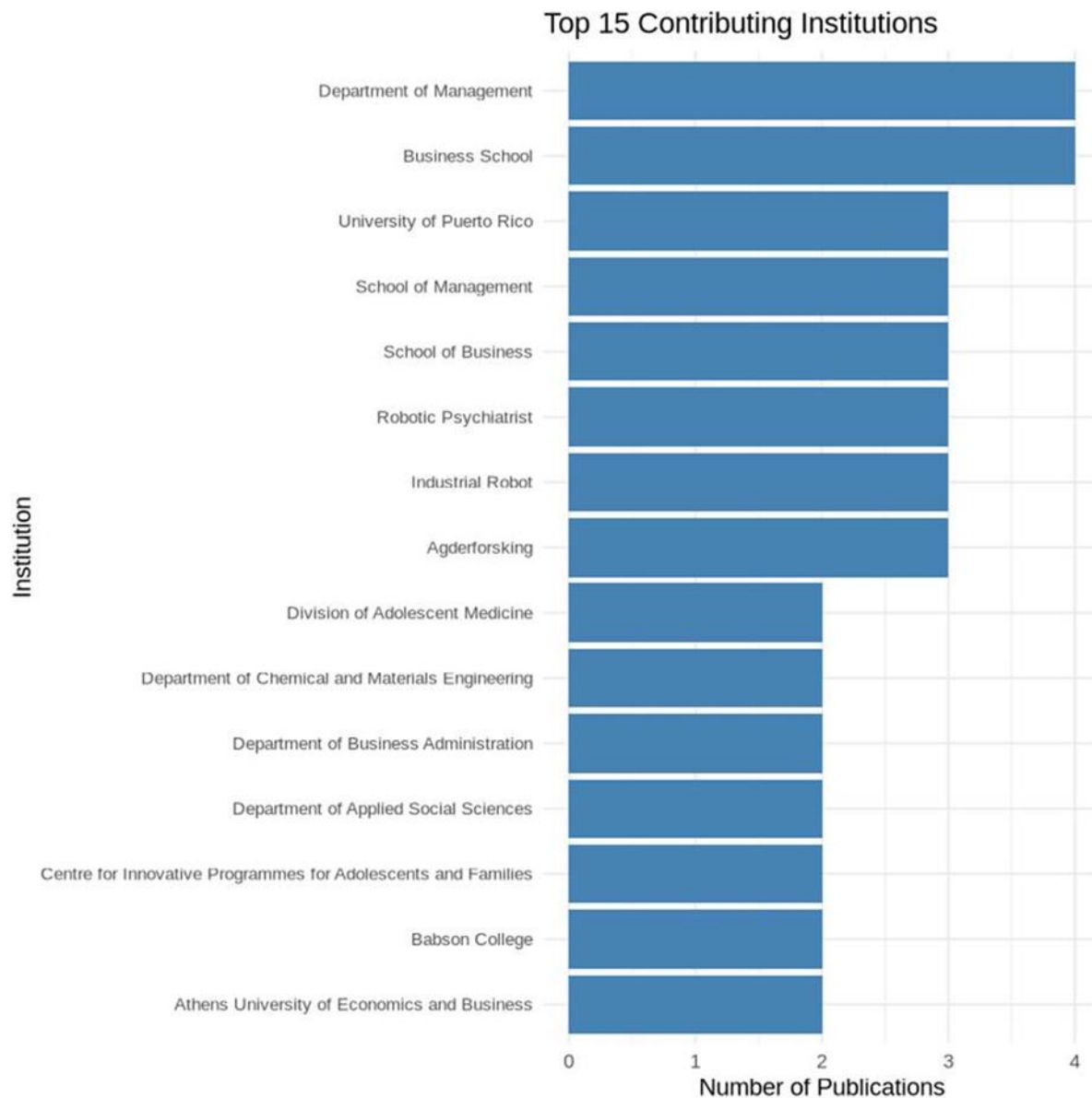
Institutional Contributions

The institutional landscape of leaderpreneurship research is characterized by contributions from a diverse range of universities and research centers, reflecting the interdisciplinary nature of this field. As illustrated in Figure 6, several academic institutions have played a pivotal role in advancing the knowledge base of leaderpreneurship.

Leading contributors include universities and specialized research centers that have significantly influenced the development, application, and dissemination of leaderpreneurship concepts. Their contributions underscore the growing academic engagement with this field, spanning areas such as education, business, entrepreneurship, and technology (Miranda et al., 2017).

The breadth of institutional involvement further highlights the global reach and academic significance of leaderpreneurship research. The increasing number of studies emerging from

diverse educational settings suggests a rising recognition of leaderpreneurship as a critical component in shaping modern leadership practices within higher education and business environments.

Figure 6. Top 15 Contributing Institutions in Leaderpreneurship Research
Note: Distribution of publications across leading institutions (2014-2024)

Topic Clustering Analysis
The hierarchical topic clustering analysis, as illustrated in Figure 7, identifies three primary clusters within leaderpreneurship research. These clusters highlight the multifaceted nature of the field, encompassing technological, educational, and managerial dimensions.

- *Technical and Applied Sciences Cluster*
  This cluster focuses on the technological applications of leaderpreneurship, particularly in fields such as agricultural robotics, automation, and emerging digital technologies. The presence of these topics suggests a strong linkage between entrepreneurial leadership and technological innovation, reinforcing the role of technology-driven strategies in higher education and industry development.
- *Educational and Human Development Cluster*
  This category examines education, training programs, and human factors, with a specific emphasis on economic sustainability and entrepreneurial development. Research within this cluster explores how leaderpreneurship principles can be integrated into curriculum design, skill development, and institutional policies, ensuring that academic leadership fosters both innovation and sustainable economic growth.
- *Management and Development Cluster*
  The third cluster revolves around knowledge management systems, teaching methodologies, and sustainable development practices. This cluster underscores the strategic role of leaderpreneurship in shaping institutional governance, leadership models, and pedagogical innovations in response to evolving educational and economic landscapes (Benneworth & Charles, 2005; Peris-Ortiz et al., 2016).

The identification of these thematic clusters demonstrates the interdisciplinary and evolving nature of leaderpreneurship research. It underscores the need for a holistic approach that integrates technological advancements, educational strategies, and effective management practices to foster entrepreneurial leadership in higher education and beyond.
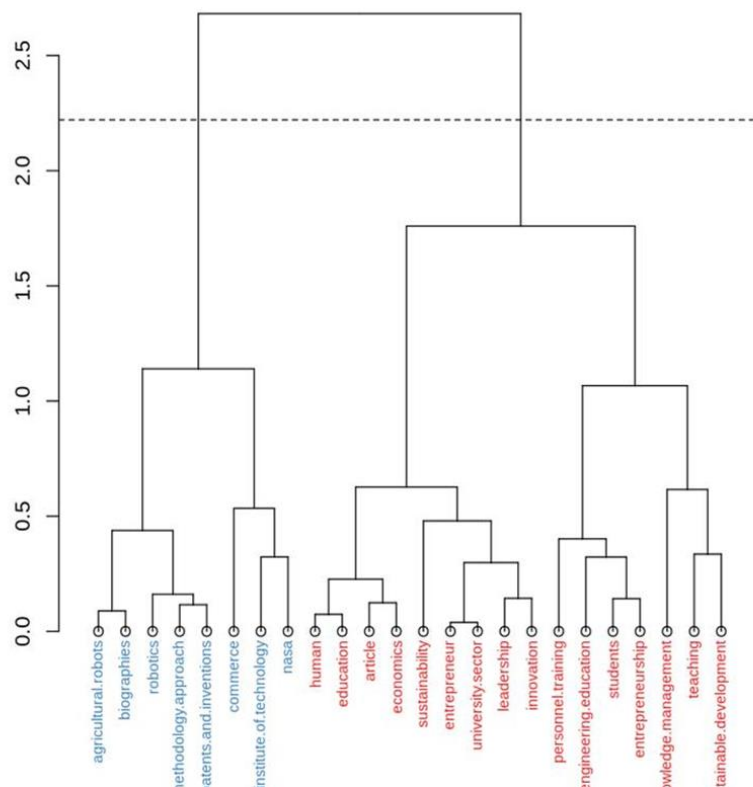

Figure 7. Hierarchical Topic Clustering Analysis in Leaderpreneurship Research
Note: Tree structure showing hierarchical relationships between research topics, with height indicating relationship strength.

Hierarchical and Methodological Analysis

In the dendrogram analysis, a deeper exploration reveals how topics within leaderpreneurship are interrelated, encompassing technological, educational, and managerial themes. The methodological findings, presented in Figure 8, indicate that qualitative research methods - particularly interviews and surveys - dominate the field, with case studies also being frequently employed. The underrepresentation of meta-analyses suggests an opportunity for future synthetic research to consolidate existing findings and provide comprehensive insights into the effectiveness of leaderpreneurship programs (Harrison & Leitch, 1994; Tranfield et al., 2003).
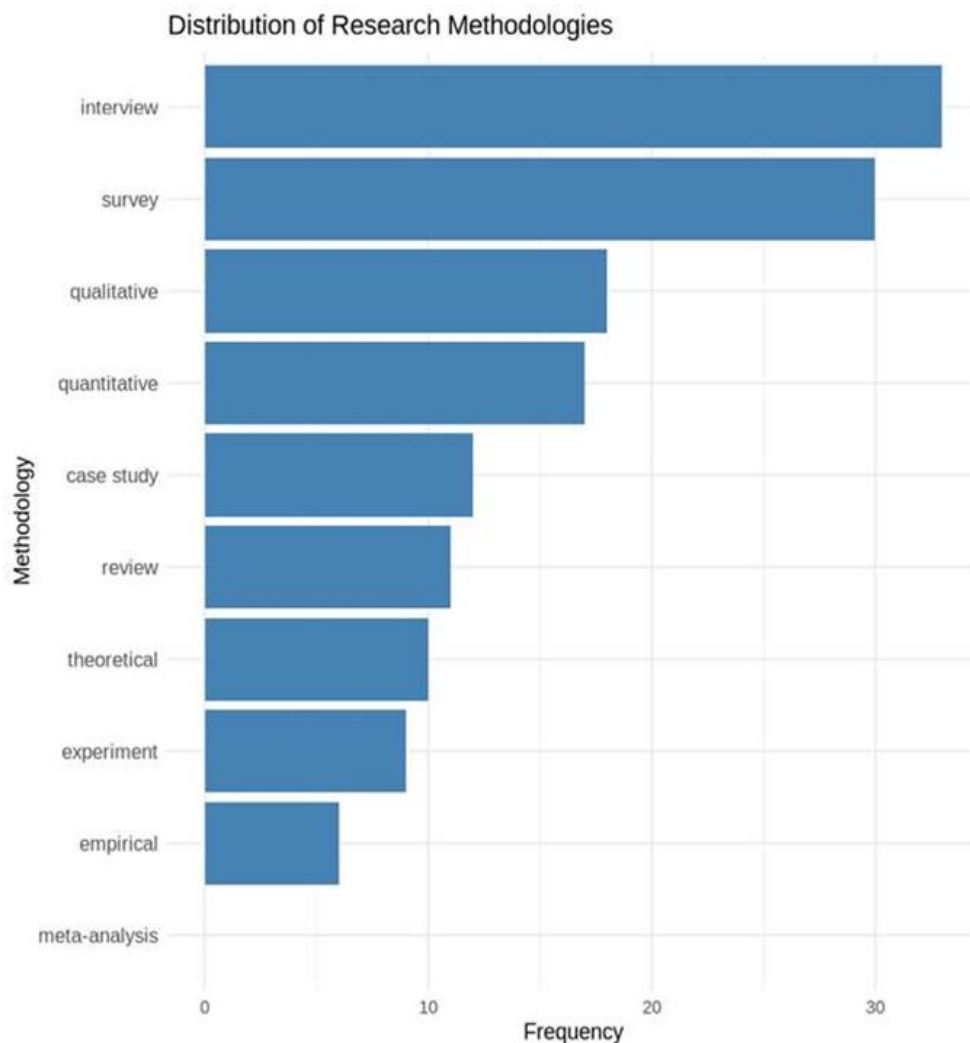
Figure 8. Distribution of Research Methodologies in Leaderpreneurship Studies
Note: Bar chart showing frequency of different research methods used in the field.

Temporal Evolution of Research Themes

The shifting priorities and maturation of the leaderpreneurship field over the past decade reveal both sustained interest in core themes and the emergence of new research areas. The analysis of the 2014–2024 period indicates that while some themes have exhibited steady growth, others have experienced significant peaks and fluctuations, reflecting the dynamic nature of the field (Wright & Phan, 2018; Ahamat et al., 2021).

Leadership has consistently been the most extensively researched theme within leaderpreneurship. The data indicate that Leadership reached its highest frequency in 2021, with over 20 occurrences, likely driven by global shifts in leadership models, the impact of the COVID-19 pandemic on higher education, and the growing recognition of leadership's role in crisis management. Following this peak, the frequency of Leadership stabilized, maintaining an average of approximately 13 occurrences per year from 2022 to 2024. This trend suggests that while leadership remains a central focus, the field is evolving to explore more specialized aspects, such as entrepreneurial leadership and innovative leadership practices (Whittaker & Montgomery, 2022).

Education has also demonstrated steady growth, albeit with some fluctuations over the years. This theme peaked in 2021, aligning with the surge in leadership research, and has remained prominent post-2022. The consistency of this theme suggests that educational strategies and outcomes are fundamental to the leaderpreneurship discourse, particularly as institutions increasingly emphasize the development of entrepreneurial competencies among students (Neves & Brito, 2020). The periodic fluctuations may reflect broader trends in educational reform and shifts in pedagogical approaches aligned with leaderpreneurship principles (Crow et al., 2019).

Innovation and Entrepreneurship have exhibited cyclical patterns, reinforcing their status as emerging but critical areas within leaderpreneurship research. Both themes demonstrated moderate growth, with notable peaks between 2021 and 2022, indicating an increasing emphasis on the integration of leadership, innovation, and entrepreneurship in higher education curricula. The convergence of these themes in recent years suggests a growing recognition of their interdependence in preparing students for the evolving workforce (Harrison & Leitch, 1994; Kasalak et al., 2022).

Sustainability, which emerged as a distinct research theme around 2019, has steadily gained prominence. This upward trajectory suggests an increasing awareness among scholars and practitioners of the necessity of embedding sustainability principles within leadership models and entrepreneurial ventures. The continued rise of this theme, particularly after 2020, aligns with global societal shifts toward sustainability and the mounting environmental challenges faced by businesses and higher education institutions (Peris-Ortiz et al., 2016; Benneworth & Charles, 2005).

Overall, this temporal analysis highlights the strong foundational presence of leadership and education in leaderpreneurship research while demonstrating the field's evolution to incorporate innovation, entrepreneurship, and sustainability. The convergence of key themes around 2021–2022 likely reflects a period of heightened academic activity and shifting global priorities, influenced by the broader impact of the COVID-19 pandemic and a renewed focus on the future of higher education.

Discussions
The bibliometric analysis of leaderpreneurship research in higher education reveals important patterns that highlight the field's evolution, integration of themes, and areas for future development. The steady growth of publications, with an annual increase of 4.14%, suggests that the field is maturing and gaining traction in academic circles. The publication peak in 2021, followed by stabilization at approximately 15 publications per year, indicates that leaderpreneurship research has reached a point of early maturity. This trend mirrors the findings

of Whittaker & Montgomery (2022), who noted a similar evolution in leadership research within higher education. As the field stabilizes, we may expect a more focused and specialized exploration of its themes (Ahamat et al., 2021).

The thematic integration within leaderpreneurship research shows strong connections between leadership and entrepreneurship, with sustainability emerging as an increasingly significant theme. This aligns with Ahamat et al. (2021), who highlighted the importance of combining various perspectives in developing academic leadership. Furthermore, the growing presence of technology and innovation-related themes suggests a shift towards more holistic approaches to leaderpreneurship, incorporating entrepreneurial skills alongside academic leadership. These findings reflect the broader trend of higher education institutions recognizing the need for leaders who can foster both academic excellence and entrepreneurial thinking (Neves & Brito, 2020).

Geographically, the bulk of research comes from the United States and the United Kingdom, followed by China, which points to a gap in research from other parts of the world, particularly developing countries. This geographic concentration limits the diversity of perspectives on how leaderpreneurship is practiced and understood in different cultural and institutional contexts. The broad range of institutions contributing to the field—from management faculties to innovation centers—underscores the interdisciplinary nature of leaderpreneurship. These findings support the argument made by Kasalak et al. (2022), who emphasized that diverse viewpoints are essential for advancing the concept of leaderpreneurship in higher education.

Methodologically, the field has demonstrated maturity with the frequent use of qualitative approaches such as interviews and surveys, which have provided deep insights into the complexities of leaderpreneurship. However, the limited presence of meta-analyses suggests a gap in synthesizing and consolidating findings across studies. This points to an opportunity for future research to develop more comprehensive reviews of the existing literature, which could help build a clearer understanding of the broader impacts of leaderpreneurship across various contexts and institutions (Tranfield et al., 2003; Bodas Freitas & Verspagen, 2017).

Several important research gaps remain. There is a need for more studies focusing on developing countries, where leaderpreneurship may face unique challenges and opportunities. Longitudinal research on the long-term effects of leaderpreneurship programs is also lacking, and such studies could provide valuable insights into the lasting impacts of these initiatives. Cross-cultural comparative studies are another area that warrants attention, as they would help explore how different educational and leadership systems implement and benefit from leaderpreneurship. Finally, the development of standardized evaluation frameworks for assessing the effectiveness of leaderpreneurship programs would help ensure that research outcomes are comparable and applicable across different regions and institutions (Hasche & Linton, 2021; Peris-Ortiz et al., 2016).

Conclusion
This bibliometric study provides a comprehensive overview of the current state of leaderpreneurship research in higher education. The findings indicate that the field is experiencing steady growth, marked by robust thematic integration and diverse methodological approaches. These trends suggest that leaderpreneurship is increasingly recognized as a key driver of academic and institutional development. However, this study also identifies critical

gaps, particularly in geographic representation and methodological diversity, highlighting the need for broader perspectives and innovative research approaches in the future.

To further advance the field, future research should prioritize expanding the geographic scope, particularly by incorporating studies from developing countries, where leaderpreneurship may face distinct challenges and opportunities. Additionally, longitudinal studies are needed to assess the long-term impacts of leaderpreneurship programs on both institutions and individuals. International collaboration should also be encouraged to ensure a diverse range of cultural and institutional perspectives, thereby enriching the global discourse on leaderpreneurship. Furthermore, adopting innovative methodologies in data collection and analysis—such as mixed-methods research, computational techniques, and experimental studies—could provide deeper insights into the evolving nature of leaderpreneurship.

While this study offers valuable contributions, its limitations -such as its reliance on the Scopus database and a specific time frame (2014–2024) - underscore the need for future research to integrate a broader range of data sources and extend the temporal scope. Doing so will provide a more comprehensive and nuanced understanding of leaderpreneurship's development over time.

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