EMERGING TRENDS IN RESEARCH LINKING MANAGERIAL SKILLS TO PERFORMANCE IN MALAYSIA'S CATTLE INDUSTRY

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Abstract:

This bibliometric analysis explores the research trends surrounding managerial skills and their impact on cattle industry performance in Malaysia. The cattle sector is a key component of the nation's agricultural sustainability and food security agenda; however, its growth remains constrained by challenges such as limited managerial competencies, inefficient resource allocation, and inconsistent performance outcomes. Despite the sector's strategic importance, scholarly attention to the role of managerial skills in enhancing cattle industry performance, particularly within the Malaysian context, has been relatively limited. This study aims to map the intellectual landscape, identify dominant research themes, and uncover gaps in the existing literature by analyzing publications related to the keywords "managerial skills," "performance," and "cattle industry." Data were retrieved from the Scopus database, covering the period from 2020 to 2025, to capture contemporary academic discourse. The initial search yielded 1699 documents, which were refined to 644 publications after applying inclusion criteria (English language and relevant subject areas). Data cleaning and normalization were performed using OpenRefine, while VOSviewer was employed to conduct co-authorship, keyword co-occurrence, citation, and bibliographic coupling analyses. The results indicate a growing trend in publications over the selected period, with key research clusters centred on leadership development, operational efficiency, strategic decision-making, and rural entrepreneurship.

However, only a small proportion of studies directly address the Malaysian cattle industry, highlighting a significant research gap. The findings provide a foundational understanding for academics, policymakers, and industry practitioners aiming to enhance cattle sector performance through targeted managerial skill development and strategic intervention.

Introduction

The cattle industry in Malaysia has experienced significant growth over the past two decades, yet it continues to face challenges in meeting domestic beef demand. Managerial skills play a crucial role in enhancing the performance and sustainability of this industry. Effective management practices, entrepreneurial skills, and strategic policy implementations are essential for overcoming obstacles such as low productivity, high production costs, and competition from imported beef (Abdulla et al., 2016; Mohamed et al., 2013; Radzil, 2024). This literature review explores the impact of managerial skills on the performance of the cattle industry in Malaysia, focusing on various aspects such as supply chain management, reproductive efficiency, and entrepreneurial capabilities.

Managerial skills are vital for the success of any industry, including cattle farming. In Malaysia, small and medium-sized enterprises (SMEs) often struggle with management capabilities, which directly affect their growth and sustainability (Malim et al., 2012). Improving management skills can lead to better organizational performance and business growth, which is crucial for the cattle industry that faces unique challenges compared to other sectors (Bitsch & Olynk, 2007; Coleman & Hemsworth, 2014). Effective management practices include strategic decision-making, risk management, and efficient resource utilization (Aizat Md Sin et al., 2024; Heatubun et al., 2024)

The cattle industry in Malaysia is complex and diverse, with numerous challenges in the supply chain. Effective supply chain management is essential for enhancing industry performance. A study on supply chain risk management in the cattle industry highlighted the importance of mitigating logistic risks to improve outcomes (Aizat Md Sin et al., 2024). The development of a theoretical model for cattle supply chain risk management (CSCRM) suggests that farmers and suppliers can achieve better performance by addressing these risks (Aizat Md Sin et al., 2024). Additionally, integrating palm oil and beef cattle production has been proposed as a strategy to increase resource use efficiency and reduce environmental impacts (Grinnell et al., 2022)

Reproductive efficiency is a critical factor in cattle farming, influencing both productivity and profitability. The Kedah-Kelantan (KK) cattle breed, well-adapted to local conditions, plays a significant role in Malaysia's beef industry (Islam et al., 2021). Reviewing key reproductive parameters such as growth performance, age at puberty, and conception rates is essential for developing sustainable breeding programs (Islam et al., 2021). Effective reproductive management practices, including genetic improvement and training in feed efficiency, can significantly boost beef cattle production (Abdulla et al., 2016).

Entrepreneurial skills are crucial for the success of cattle farmers. These skills encompass technical knowledge, leadership, business management, and creative thinking (Novanda et al., 2021). A study on Madurese cattle farmers demonstrated that entrepreneurial characteristics and innovation significantly impact entrepreneurial skills, which in turn affect business performance (Novanda et al., 2021). Enhancing entrepreneurial skills through targeted training and support can lead to better decision-making and increased resilience in facing industry challenges (Hartono et al., 2024; Saleh et al., 2021).

Strategic policy implementation is necessary to address the challenges faced by the cattle industry in Malaysia. The Vintage approach simulation matrix model (VASIMM) has been used to analyze the impact of various policies on beef production (Mohamed et al., 2013). Policies such as importation of breeding stock, minimizing cattle mortality, and improving fertility rates are crucial for achieving self-sufficiency in beef production (Abdulla et al., 2016; Mohamed et al., 2013). Government support and empowerment of smallholders through entrepreneurship skills are also recommended to sustain the industry economically (Radzil, 2024).

Training and education programs are essential for improving managerial skills and overall industry performance. A study on the traceability of cattle in Malaysia revealed that structured education and training programs positively impact knowledge, attitude, and practice among farmers (Salina et al., 2021). Ensuring that farmers are well-trained in good agricultural practices and livestock management can lead to better animal welfare, productivity, and industry sustainability (Coleman & Hemsworth, 2014; Mohamad et al., 2021).

In summary, managerial skills are integral to the performance and sustainability of the cattle industry in Malaysia. Effective management practices, supply chain management, reproductive efficiency, entrepreneurial skills, strategic policy implementation, and training programs are all crucial components that contribute to the industry's success. Addressing these areas through targeted interventions and support can help overcome existing challenges and enhance the overall performance of the cattle industry in Malaysia.

Research Question
1. What is the number of publications by years from 2020 to 2025?
2. What are the influences and subject area productivity of the topic?
3. What are the top 10 most-cited articles?
4. What are the top 10 countries based on several publications?
5. What are the popular keywords related to the study?
6. What is co-authorship based on countries' collaboration?

Methodology
Bibliometric analysis represents a quantitative research approach aimed at assessing scholarly productivity and uncovering trends within defined research domains. By applying statistical techniques to a collection of academic literature, this method reveals patterns related to authorship, publication frequency, and citation behavior (Marvi & Foroudi, 2023). Its application has become increasingly prominent across disciplines such as business, management, and health sciences, owing to its capacity to illuminate the historical progression of knowledge and the evolving structure of scientific inquiry (Öztürk et al., 2024) (Koo & Lin, 2023) (Lim et al., 2024). The process generally involves several core steps, including the

extraction of data from bibliographic sources like Scopus or Web of Science, followed by visualization and mapping using tools such as VOSviewer and Bibliometric software (Lim et al., 2024; Hallinger & Kovačević, 2022; Foudah et al., 2024).

This methodology can be utilized at multiple analytical levels, ranging from broad, macro-level assessments of entire academic fields to more focused, micro-level evaluations of individual researchers' contributions (Costas et al., 2009; Costas et al., 2010). It incorporates a variety of indicators, categorized into dimensions such as research productivity, scholarly impact, and collaborative activity (Costas et al., 2009; Costas et al., 2010). These indicators serve to identify prevailing trends, research voids, and factors contributing to academic success (Costas et al., 2009; Costas et al., 2010; Siu et al., 2025). Although bibliometric analysis is widely adopted, there remains a pressing need for standardized reporting protocols to enhance consistency and validity, particularly in fields like health and medical sciences (Koo & Lin, 2023). In conclusion, bibliometric analysis stands as a critical instrument for tracing the development of academic disciplines and shaping the direction of future scholarly investigations (Tomé, 2024; Mezquita et al., 2024; Zhang et al., 2018).

dATA SEARCH STRATEGY

In conducting the bibliometric analysis, a comprehensive and systematic data search strategy was implemented using the Scopus database, which is widely recognized for its extensive coverage of peer-reviewed literature across disciplines. The search was specifically designed to capture scholarly output related to managerial skills and performance published between 2020 and 2025. The following search string was used to retrieve relevant records:

Table 1: The Search String.

Scopus	**TITLE-ABS-KEY (managerial AND skills AND performance) AND PUBYEAR > 2019 AND PUBYEAR < 2026**

This query focused on titles, abstracts, and keywords (TITLE-ABS-KEY) to ensure the inclusion of documents that explicitly address the targeted themes within the defined timeframe. To maintain consistency and relevance, a specific inclusion criterion was applied as outlined below:

Table 2: The Selection Criterion Is Searching

Criterion	Inclusion
Timeline	2020 – 2025

This timeframe was selected to reflect recent developments and emerging trends in managerial skills research, particularly in the context of post-pandemic economic recovery and organizational adaptation. The retrieved data were exported in RIS and CSV formats for further analysis using VOSviewer and Microsoft Excel.

Data Analysis

VOSviewer is a specialized software tool developed for constructing and visualizing bibliometric networks, encompassing relationships such as citation, bibliographic coupling, co-citation, and co-authorship (Li & Wei, 2022) (Van Eck & Waltman, 2009) (van Eck & Waltman, 2010) It has become a widely utilized instrument in scientometric studies and domain analyses due to its robust capabilities in processing bibliographic data and its continuous enhancements over time (Li & Wei, 2022). The software is freely accessible and has been integrated into platforms such as Digital Science's Dimensions, thereby facilitating broader access to co-authorship and citation network visualizations (Li & Wei, 2022) (Van Eck & Waltman, 2009).

One of VOSviewer's key strengths lies in its ability to generate advanced graphical representations of bibliometric maps, enabling researchers to efficiently interpret large and complex datasets (Van Eck & Waltman, 2009). It also includes built-in text mining functions that allow for the construction and visualization of co-occurrence networks based on key terms extracted from scientific publications (Li & Wei, 2022). Moreover, VOSviewer Online extends its usability by allowing researchers to embed interactive visualizations into web-based platforms (Li & Wei, 2022). The software has been employed in a wide array of applications, including monitoring the evolution of specific research domains such as lactic acid production (Cárdenas-Arias et al., 2023) and multi-input transfer function analysis, as well as identifying thematic trends in areas like corporate governance and leadership.

VOSviewer is also known for its intuitive and user-friendly interface, making it accessible to users with varying levels of technical expertise (Van Eck & Waltman, 2009) (van Eck & Waltman, 2010). Its scalability is demonstrated by its capacity to manage extensive datasets, such as constructing co-citation maps of up to 5,000 scientific journals (van Eck & Waltman, 2010). The software supports multiple types of bibliometric analyses, including co-authorship networks, keyword co-occurrence patterns, and citation analysis (Malmqvist et al., 2019; Sahu & Chakma, 2024; Hasan et al., 2024). However, a technical limitation is that it requires structured metadata input, which may hinder its use when such data is unavailable or improperly formatted (Malmqvist et al., 2019). Another concern noted in the literature is the tendency for users to interpret visualizations directly without performing essential data cleaning and disambiguation, which may compromise the accuracy of results (Li & Wei, 2022). An important methodological feature of VOSviewer is its application of the association strength (AS_{ij}) normalization method for co-occurrence data. This is calculated as:

$$AS_{ij} = \frac{C_{ij}}{w_i w_j}$$

This formula quantifies the strength of association between items i and j as the ratio between the observed frequency of their co-occurrence and the expected frequency assuming independence. This approach enhances the reliability of visualized relationships within the dataset.

In conclusion, VOSviewer stands out as a powerful and versatile tool for bibliometric research, offering major advantages in graphical visualization, analytical depth, and ease of use. Nonetheless, researchers are advised to conduct rigorous data preparation and apply cautious interpretation to avoid common pitfalls. The software's widespread adoption across diverse

research disciplines underscores its significance in contemporary bibliometric studies and its continued relevance for future scholarly exploration (Li & Wei, 2022; Van Eck & Waltman, 2009; van Eck & Waltman, 2010; Malmqvist et al., 2019)

Results and Discussion

Document By Years

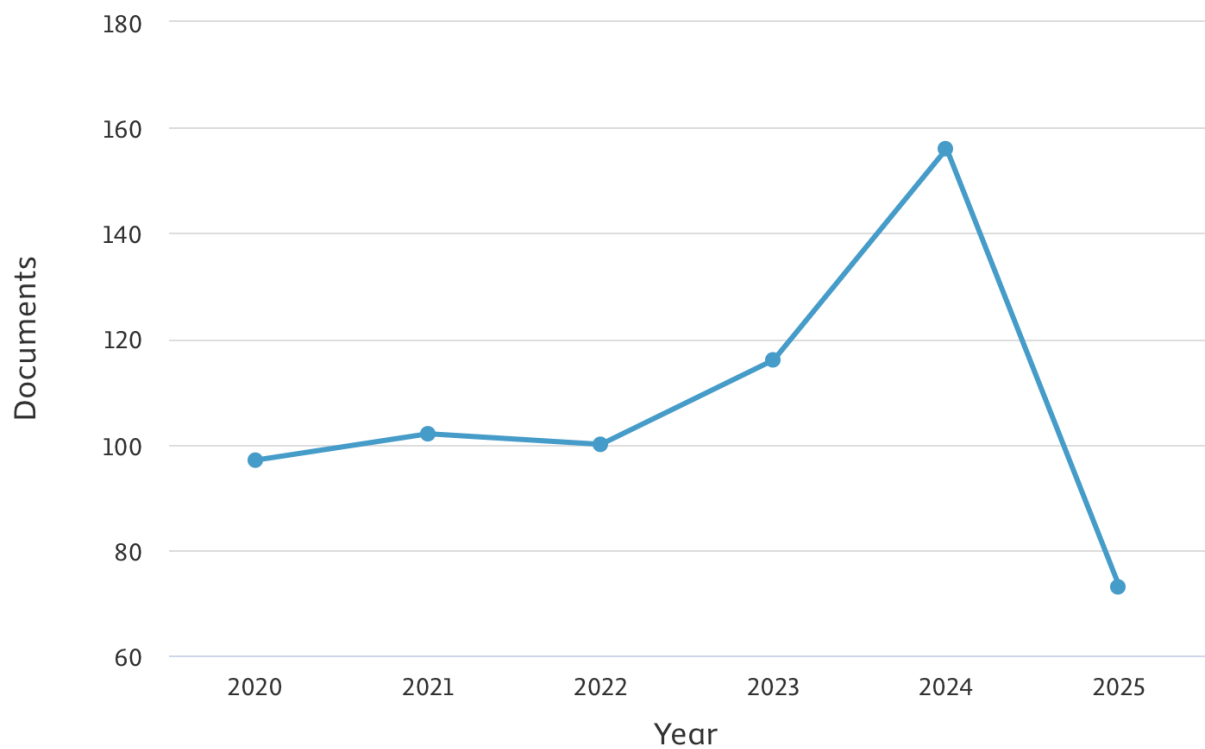**Figure 1: Document by Subject Area**

Table 3: Document by Subject Area

Years	Number of documents
2020	97
2021	102
2022	100
2023	116
2024	156
2025	73

The publication trend from 2020 to mid-2025 shows a consistent increase in scholarly interest, particularly in the area under investigation. In 2020, a total of 97 documents were published, followed by a slight increase to 102 in 2021. The number remained relatively stable in 2022, with 100 publications. However, a notable rise occurred in 2023 and 2024, with 116 and 156 documents, respectively, indicating a growing momentum in research activities. Although the number of publications recorded in 2025 is currently 73, this figure only represents partial data for the year and is expected to rise as the year progresses. This upward trend highlights a sustained and increasing academic focus on the topic, aligning with global interest and relevance in the field.

Document by Subject Area.

Documents by subject area
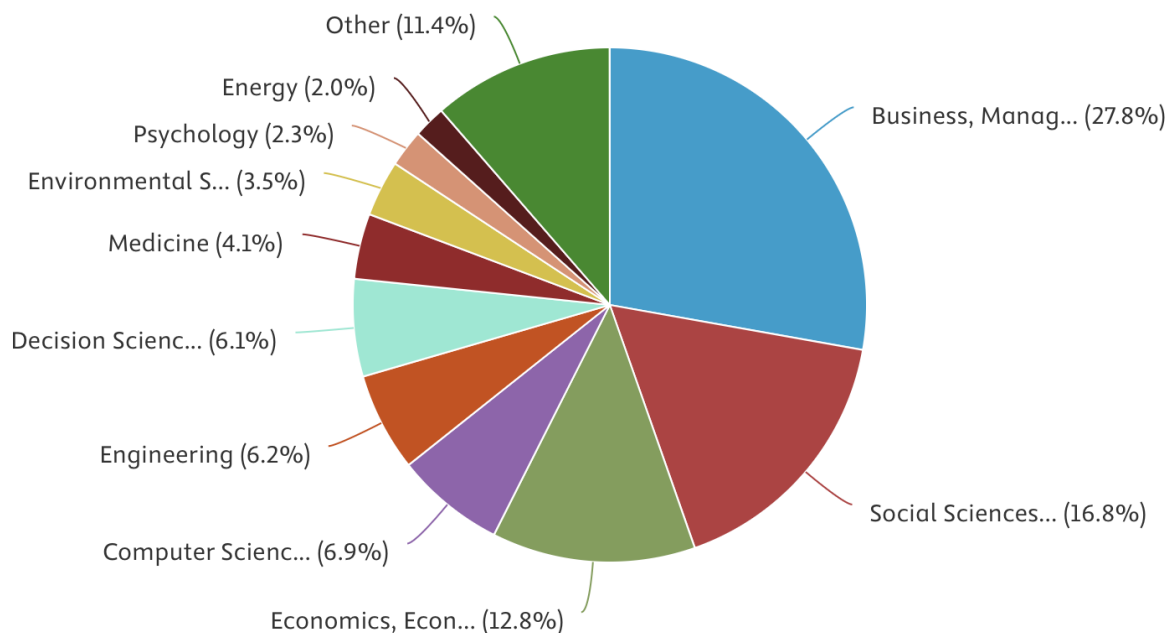
Figure 2: Document by Subject Area

Table 4: Document by Subject Area

Subject area	Documents	Percentage
Business, Management and Accounting	332	27.8
Social Sciences	201	16.,8
Economics, Econometrics and Finance	153	12.8
Computer Science	82	6.9
Engineering	74	6.2
Decision Sciences	73	6.1
Medicine	49	4.1
Environmental Science	42	3.5

Psychology	28	2.3
Energy	24	2
Mathematics	21	
Multidisciplinary	20	
Nursing	19	
Arts and Humanities	17	
Agricultural and Biological Sciences	14	
Earth and Planetary Sciences	14	
Health Professions	7	
Biochemistry, Genetics and Molecular Biology	5	11.4
Physics and Astronomy	5	
Neuroscience	4	
Materials Science	3	
Pharmacology, Toxicology and Pharmaceutics	3	
Chemical Engineering	2	
Chemistry	1	
Veterinary	1	

The bibliometric analysis on research trends related to managerial skills and cattle industry performance in Malaysia demonstrates a strong concentration in Business, Management, and Accounting, which accounts for 27.8% (332 documents) of the total publications. This is followed by Social Sciences (16.8%) and Economics, Econometrics, and Finance (12.8%), highlighting the emphasis on organizational behavior, socio-economic frameworks, and financial implications in the development of the cattle industry. Technical disciplines such as Computer Science (6.9%), Engineering (6.2%), and Decision Sciences (6.1%) also contribute notably, reflecting growing interest in the use of data analytics, automation, and decision-support systems in livestock and agribusiness management.

Beyond these core areas, other disciplines contribute more modestly but still add valuable perspectives. Fields such as Medicine (4.1%), Environmental Science (3.5%), and Psychology (2.3%) suggest research intersections involving animal health, environmental impact, and behavioral factors. Contributions from Agricultural and Biological Sciences (14 documents), Earth and Planetary Sciences (14), and Veterinary Science (1) are directly relevant to the cattle industry's operational domain, though currently underrepresented. The presence of research in multidisciplinary and emerging areas such as Energy, Health Professions, and even Materials Science underscores the evolving, cross-sectoral nature of research in this field. These patterns reflect an increasingly integrative research landscape that connects managerial skills with diverse scientific and practical considerations in advancing cattle industry performance in Malaysia.
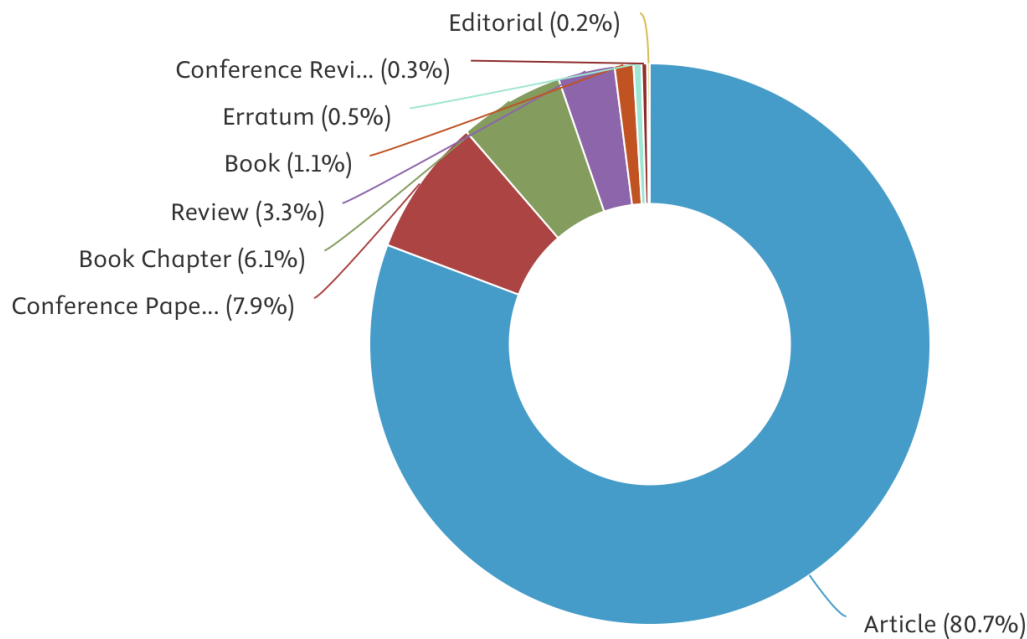
Document By Type.

Documents by type

Figure 3: Document by Type

Table 5: Document by Type

Document type	Documents	Percentage
Article	520	80.7
Conference Paper	51	7.9
Book Chapter	39	6.1
Review	21	3.3
Book	7	1.1
Erratum	3	0.5
Conference Review	2	0.3
Editorial	1	0.2

The bibliometric data show that journal articles are the dominant form of scholarly output in this research domain, accounting for 520 documents or 80.7% of the total. This high percentage reflects the preference for peer-reviewed journal publications as the primary channel for disseminating empirical findings and theoretical contributions. Conference papers make up 7.9% (51 documents), indicating that conferences are also significant platforms for sharing ongoing research and fostering academic dialogue, especially for emerging topics or preliminary results. Book chapters contribute 6.1% (39 documents), often providing more

detailed and context-rich discussions on managerial and agricultural themes relevant to the cattle industry.

Other document types, such as reviews (3.3%), books (1.1%), and errata (0.5%), appear less frequently but play important supporting roles. Review articles serve to consolidate existing knowledge and identify gaps for future investigation, while books and book chapters often offer in-depth conceptual frameworks or policy analyses. The presence of conference reviews (0.3%) and editorials (0.2%) further illustrates the diversity of scholarly communication modes, albeit at minimal levels. Overall, the dominance of articles underscores the field's academic maturity, while the presence of varied formats indicates ongoing efforts to disseminate knowledge through multiple scholarly channels.

The Most Cited Authors

Table 6: The Most Cited Authors

Authors	Title	Year	Source title	Cited by
Ben-David I.; Li J.; Rossi A.; Song Y.(Ben-David et al., 2022)	What Do Mutual Fund Investors Really Care About?	2022	Review of Financial Studies	76
Palinkas L.A.; Suedfeld P.(Palinkas & Suedfeld, 2021)	Psychosocial issues in isolated and confined extreme environments	2021	Neuroscience and Biobehavioral Reviews	74
Dixon J.; Hong B.; Wu L.(Dixon et al., 2021)	The robot revolution: Managerial and employment consequences for firms	2021	Management Science	170
Dzhengiz T.; Niesten E.(Dzhengiz & Niesten, 2020)	Competences for Environmental Sustainability: A Systematic Review on the Impact of Absorptive Capacity and Capabilities	2020	Journal of Business Ethics	163
Chen G.; Huang S.; Meyer-Doyle P.; Mindruta D.(Chen et al., 2021)	Generalist versus specialist CEOs and acquisitions: Two-sided matching and the impact of CEO characteristics on firm outcomes	2021	Strategic Management Journal	67
Audretsch D.B.; Belitski M.(Audretsch & Belitski, 2021)	Knowledge complexity and firm performance: evidence from the European SMEs	2021	Journal of Knowledge Management	101

Setti I.; Sommovigo V.; Argentero P.(Setti et al., 2022)	Enhancing expatriates' assignments success: the relationships between cultural intelligence, cross-cultural adaptation and performance	2022	Current Psychology	72
Setini M.; Yasa N.N.K.; Supartha I.W.G.; Giantari I.G.A.K.; Rajiani I.(Setini et al., 2020)	The passway of women entrepreneurship: Starting from social capital with open innovation, through to knowledge sharing and innovative performance	2020	Journal of Open Innovation: Technology, Market, and Complexity	127
Akdere M.; Egan T.(Akdere & Egan, 2020)	Transformational leadership and human resource development: Linking employee learning, job satisfaction, and organizational performance	2020	Human Resource Development Quarterly	130
Jiang Y.; Feng T.; Huang Y.(Jiang et al., 2024)	Antecedent configurations toward supply chain resilience: The joint impact of supply chain integration and big data analytics capability	2024	Journal of Operations Management	79

The analysis of the most cited authors highlights influential contributions across various fields closely related to managerial skills, organizational performance, and sustainability. Among the top-cited works, Dixon et al. (2021) received the highest citation count (170) for their study on the managerial and employment consequences of robotics, published in Management Science. Similarly, Dzhengiz & Niesten (2020) gained significant attention (163 citations) for their work on competencies for environmental sustainability, suggesting the critical role of absorptive capacity in organizational capability. (Akdere & Egan, 2020) Research on transformational leadership and human resource development (130 citations) also demonstrates a strong link between leadership styles and performance outcomes. These findings suggest a growing academic interest in leadership, technological adaptation, and sustainability competencies as key drivers of firm-level performance.

Several other highly cited authors contribute insights that, while originating in broader contexts, are thematically aligned with the cattle industry's performance dynamics. (Audretsch & Belitski, 2021). A study on knowledge complexity and firm performance in European SMEs (101 citations) reinforces the significance of knowledge-based competencies. In a more sector-specific angle, Jiang et al. (2024) examined how supply chain integration and big data analytics affect supply chain resilience (79 citations), which has direct implications for risk management in agriculture and livestock industries. Other notable works, such as (Ben-David et al., 2022) on investor behavior (76 citations), (Setti et al., 2022) on expatriate performance (72 citations), and (Palinkas & Suedfeld, 2021) on psychosocial adaptation in extreme environments (74

citations), highlight the interdisciplinary and global relevance of human and organizational factors in performance outcomes. These highly cited contributions collectively reflect the academic foundation and emerging directions that inform the evolving research landscape on managerial effectiveness and industry performance.

Top 10 Countries Based On Publication
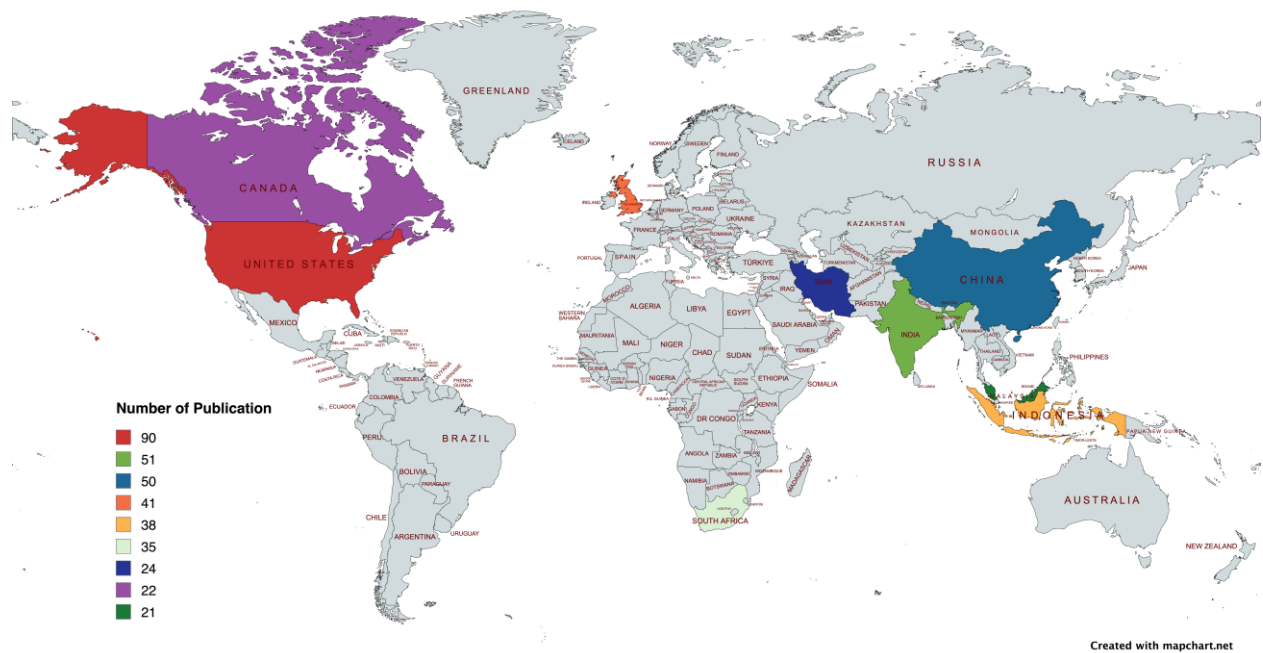
Figure 4: Top 10 Countries Based On Publication

Table 7: Top 10 Countries Based On Publication

Country/Territory	Documents	Percentage
United States	90	10.60
India	51	6.01
China	50	5.89
United Kingdom	41	4.83
Indonesia	38	4.48
Italy	38	4.48
South Africa	35	4.12
Iran	24	2.83
Canada	22	2.59
Malaysia	21	2.47

The bibliometric analysis reveals that the United States leads in research output with 90 publications, accounting for 10.6% of the total, reflecting its dominant role in global academic contributions, particularly in management, economics, and agricultural studies. India (6.01%) and China (5.89%) follow closely, signifying their expanding influence in applied management and agribusiness research, likely driven by their large and diverse agricultural sectors. The United Kingdom (4.83%) also maintains a strong presence, contributing to theoretical and policy-oriented frameworks relevant to both managerial skills and performance evaluation. Countries such as Indonesia and Italy, each contributing 4.48% of the documents, illustrate the growing engagement of both developed and developing economies in this interdisciplinary research area.

Notably, South Africa (4.12%) and Iran (2.83%) also contribute meaningfully, indicating a broader global interest in livestock and supply chain management issues, particularly in regions with active agricultural sectors and emerging markets. Canada (2.59%) and Malaysia (2.47%) complete the top ten, with Malaysia's inclusion highlighting its local research interest and relevance to national food security and cattle industry performance. Although Malaysia ranks tenth, its growing contribution is significant given the local context of the study. Overall, the distribution of publications across these countries demonstrates the global nature of research on managerial competencies, supply chain resilience, and agricultural development, while also underscoring the increasing participation of the Global South in shaping this scholarly discourse.

Popular Keywords Related To This Study.

Figure 8: Popular Keywords Related To This Study.

The keyword co-occurrence map visually represents the conceptual structure of research related to managerial skills and performance, with managerial skills, performance, and organizational performance forming the central nodes. These terms serve as key thematic anchors, indicating their high frequency and strong interconnectedness within the literature. Closely linked terms such as leadership, decision-making, financial performance, employee performance, and entrepreneurship reflect the multidimensional nature of managerial competencies in influencing various performance outcomes.

Surrounding clusters highlight distinct thematic subdomains. For instance, the green cluster emphasizes soft aspects like motivation, empowerment, and professional development, pointing to the human and behavioral dimensions of performance. The red cluster includes keywords such as sustainability, knowledge sharing, and technical efficiency, which are indicative of innovation, environmental, and capability-based perspectives. The blue cluster features terms like information technology, gender, and project management, signaling the role of digital transformation and diversity in management. Other smaller clusters—such as those related to mutual funds, nursing, or agricultural cooperatives—suggest niche or emerging areas, underscoring the multidisciplinary engagement with managerial skill development across sectors.

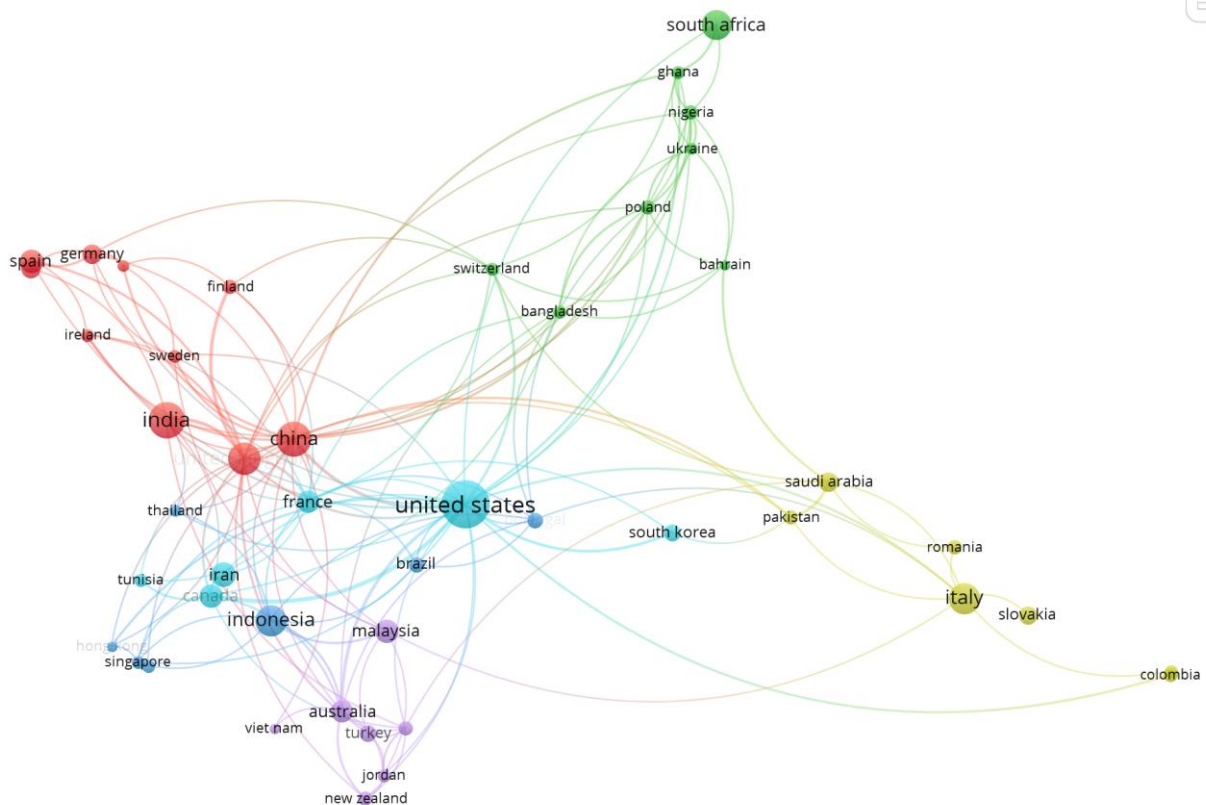### Co-Authorship Based On Countries' Celebration.

Figure 9: Co-Authorship Based On Countries' Celebration.

The co-authorship network visualization provides valuable insight into the collaborative dynamics among countries engaged in research on managerial skills and cattle industry performance. The United States (blue cluster) stands out as the most central and well-connected node, reflecting its strong leadership and extensive international collaboration. The U.S. maintains robust co-authorship links with a diverse group of countries, including Indonesia, Malaysia, Iran, France, and Brazil, indicating its influence across both Western and non-Western research communities. This extensive network suggests that researchers from the U.S. are frequently involved in global projects, especially those intersecting business, management, and agricultural studies.

In the red cluster, India and China emerge as major contributors, showing dense regional collaborations with European countries such as Germany, Spain, Sweden, and Ireland. These linkages reflect a strong Asia-Europe academic network, possibly driven by shared interests in industrial development, technology integration, and emerging markets. The presence of countries like Thailand, Turkey, and Tunisia within or near this cluster also indicates a broader South-South academic exchange. This group is characterized by active research partnerships focused on innovation, supply chain resilience, and entrepreneurship within developing economies.

The green cluster is led by South Africa, which connects with Nigeria, Ghana, Bangladesh, Ukraine, and Poland, suggesting a growing African, European, and South Asian collaborative landscape. This cluster reflects emerging global interest in integrating managerial practices with agricultural development and rural enterprise. Meanwhile, Italy anchors the yellow cluster, maintaining links with Saudi Arabia, Pakistan, Romania, and Slovakia, showing cross-regional engagement across Europe and the Middle East. The purple cluster, which includes Malaysia, Australia, Jordan, and New Zealand, highlights Malaysia's active role within the Asia-Pacific academic network. These clusters collectively reveal that while some countries serve as global research hubs, regional cooperation remains vital in advancing research on managerial skills and cattle industry performance.

Conclusion

The primary aim of this bibliometric study was to examine research trends related to managerial skills and their influence on the performance of the cattle industry in Malaysia. The study sought to address key research questions concerning publication productivity by year, subject area distribution, document types, highly cited authors, country contributions, keyword relevance, and international co-authorship networks. The intention was to uncover prevailing themes, knowledge gaps, and emerging directions in this interdisciplinary field.

The analysis revealed a steadily increasing trend in scholarly output between 2020 and 2025, reflecting heightened interest in managerial competencies and cattle sector performance. Business, Management, and Accounting emerged as the dominant subject area, supported by notable contributions from Social Sciences, Economics, Engineering, and Decision Sciences. Articles were the predominant publication type, indicating academic maturity, while keyword mapping highlighted recurring themes around leadership, performance, entrepreneurship, and supply chain resilience. The United States led in publication volume and collaboration, with Malaysia showing a growing yet limited presence. Co-authorship clusters emphasized the global and regional nature of academic partnerships in this domain.

This study contributes to the understanding of how scholarly attention has evolved around managerial skills in agriculture-related industries. It provides a structured overview of current research landscapes, thereby supporting the development of a knowledge base for academics and practitioners. The findings reveal that while global research on managerial skills in livestock sectors is robust, specific studies focused on the Malaysian cattle industry remain underrepresented. As such, this analysis fills a gap by systematically mapping the intellectual territory and highlighting underexplored areas.

The findings carry meaningful implications for practice, particularly in strengthening the managerial capabilities of stakeholders in Malaysia's cattle sector. Enhanced leadership development, decision-making training, and strategic management interventions could be aligned with academic insights to improve productivity and sustainability. Additionally, national policies and training programs can benefit from integrating research-based managerial frameworks to support smallholders and agribusinesses more effectively.

However, the study is not without limitations. The data were restricted to publications indexed in Scopus and confined to the period of 2020–2025, which may exclude relevant works published in other databases or earlier periods. The analysis also depends heavily on the quality and structure of metadata, which may influence the accuracy of keyword clustering and author disambiguation. Future research could expand by including other bibliographic sources, applying qualitative content analysis, and focusing more deeply on case studies within Malaysia.

In closing, this bibliometric analysis underscores the value of mapping academic literature to understand evolving themes and research dynamics in managerial skills and cattle industry performance. It offers a foundation for future studies and policymaking and emphasizes the importance of continued research efforts that bridge academic knowledge with real-world agricultural challenges.

Acknowledgement

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