ISSN: 2321-8169 Volume: 12 Issue: 2

Article Received: 25 November 2023 Revised: 12 December 2023 Accepted: 30 January 2024

Research Output on Strategy Formulation and Implementation: Global Picture, Development and **Key Bibliometric Indicators**

Zakariya M. S. Mohammed¹, Mohamed Ben Ammar², Ashraf F. A. Mahmoud³, Mohyaldein Salih⁴, Faroug A. Abdalla⁵, Elfadl E. M. Elzein⁶, Mohammed Mamoun Ahmed Abubaker⁷, Omer M. A. Hamed⁸, Osama M. A. Yousif⁹

¹ Department of Mathematics, College of Science, Northern Border University, Arar, Saudi Arabia

Email id: zakariya.mohammed@nbu.edu.sa

- ² Department of Information Systems, Faculty of Computing and Information Technology, Northern Border University, Rafha, Saudi Email id: mohammed.ammar@nbu.edu.sa
- ³ Department of Computer Science, College of Science, Northern Border University, Arar, Saudi Arabia

Email id: ashraf.abubaker@nbu.edu.sa

⁴ Department of Mathematics, College of Science, Northern Border University, Arar, Saudi Arabia Email id: mohiuddin.mahjoub@nbu.edu.sa

⁵Department of Computer Science, College of Science, Northern Border University, Arar, Saudi Arabia

Email id: faroug.abdalla@nbu.edu.sa

⁶ Department of Accounting, College of Business Administration, Northern Border University, Arar, Saudi Arabia.

Email id: elfadl.elzein@nbu.edu.sa

⁷ Department of Marketing, College of Business Administration, Northern Border University, Arar, Saudi Arabia. Email id: mohammed.abobaker@nbu.edu.sa

Department of Finance, College of Business Administration, Northern Border University, Arar, Saudi Arabia. Email id: omer.alkamel@nbu.edu.sa

⁹ Department of Computer Science, College of computer Science and information technology, Al Neelain University, Khartoum, Sudan Email id: osamamohamed2004@gmail.com.

*Corresponding authors: Mohamed Ben Ammar, mohammed.ammar@nbu.edu.sa

Abstract—Effective strategic management serves as the bedrock for an organization's vision, goal attainment, and stakeholder expectations. Consequently, the research focus on strategy formulation and implementation has garnered substantial attention in recent decades. This study aims to evaluate bibliometric indicators of research productivity related to strategy formulation and implementation through meticulous bibliometric analysis. The analysis leverages the R Bibliometrix library on scientific publications indexed in the Web of Science database. The dataset comprises 672 publications on strategy formulation and implementation, spanning the years 1971 to 2022. Authored by 1,280 contributors from 69 countries, these publications are dispersed across 374 diverse sources, including journals and books. Impressively, this body of work has garnered a cumulative total of 24,635 citations, averaging 36.66 citations per document. The top-ranking article, "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation" by Robert M. Grant, stands out with 3,649 citations. Examining global scientific production, the United States emerges as the primary contributor with 154 publications (22.91%), followed by China with 56 (8.33%) and the United Kingdom with 54 (8.03%).

The study's findings offer valuable insights for researchers and organizations alike, shedding light on significant research contributions. This comprehensive assessment enables a nuanced understanding of the historical progression and growth within this domain. Additionally, it identifies current focal points of research and highlights areas that warrant attention in future studies.

Keywords-bibliometric analysis; R Bibliometrix; strategy formulation; strategy implementation; Web of Science.

I. INTRODUCTION

Within the strategic management process, strategy formulation and strategy implementation emerge as pivotal integral elements in navigating phases, constituting organizational success. This strategic management process is delineated into four principal stages: environmental scanning, strategy formulation, strategy implementation or execution, and strategy evaluation and control [1]. Strategy formulation encompasses the identification of an organization's long-term goals and objectives, involving the critical selection of courses of action and resource allocation necessary for goal achievement [2,3]. Employing diverse methodologies, such as SWOT analysis, PESTEL analysis, and Porter's Five Forces model, organizations navigate the intricate landscape of strategy formulation [4 to 7]. Complementing this, strategy implementation becomes a cornerstone for organizational triumph [8]. This phase involves executing and operationalizing

the strategic plan crafted during the strategy formulation, requiring the alignment of people, resources, and processes. Essential components include goal communication, organizational alignment, continual monitoring, leadership participation, flexibility in dynamic environments, employee involvement, and the establishment of key performance indicators for regular evaluation and adaptation, collectively contributing to the success of strategic management within an organization [9]. In parallel, bibliometric analysis, as asserted by [10, 11], stands as a rigorous statistical method, providing a structured evaluation and analysis of scholarly publications and scientific output. This method seeks insightful perspectives into the structure, impact, and trends within specific research fields. Through meticulous detailing, evaluation, and tracking of published research, bibliometric analysis unveils the cognitive structure and evolution of a field, identifying trends and key research domains. This analytical approach offers researchers a robust foundation to contextualize current contributions, discern noteworthy developments, and identify emerging directions for future research [12]. Applied across various fields, including operations research and management science [13], digital marketing [14], business process management [15], and artificial intelligence and machine learning [16], bibliometric analysis serves as a valuable tool for comprehending scientific production. Despite the burgeoning research publications related to strategy formulation and implementation, there exists a conspicuous absence of comprehensive reviews specifically focused on the in-depth analysis of scientific output in this domain. This article endeavors to bridge this gap by employing bibliometric analysis, with the primary goal of dissecting the scientific landscape surrounding strategy formulation and implementation. The significance of this study lies in its potential to provide researchers with valuable insights into the current state and future directions of research.

Section 1 serves as an introduction to the topic, while Section 2 delves into the problem formulation. Section 3 explores related work, Section 4 outlines the data and methods employed, Section 5 presents the results, and Sections 6 and 7 sequentially provide the discussion and conclude the study.

II. PROBLEM FORMULATION

While strategy formulation and implementation are widely recognized as cornerstones of organizational success, the research landscape in this domain presents certain intriguing gaps and complexities:

- A. Evolving Landscape: The business environment is constantly in flux, driven by factors like digitalization, globalization, and sustainability concerns. This dynamism necessitates continuous adaptation of strategic approaches, yet research might not be fully capturing the pace and nature of this evolution.
- B. Limited Granularity: Existing research often adopts a broad focus on strategy formulation and implementation, potentially overlooking valuable insights in specific subdomains. For example, the effectiveness of specific strategy implementation frameworks in different organizational contexts or industries might remain under-explored.
- C. Regional Disparities: Research output in strategy may be concentrated in certain geographic regions, potentially neglecting strategic challenges and opportunities faced by organizations in other parts of the world. This lack of global

representation could hinder the development of truly inclusive and comprehensive strategic knowledge.

- D. Practical Application Gap: While research generates valuable knowledge, translating it into actionable insights for practitioners might not be fully addressed. Bridging the gap between theoretical frameworks and practical application through case studies, industry analyses, or tailored recommendations could enhance the field's relevance and impact.
- E. Methodological Limitations: Traditional research methods like surveys or interviews might not fully capture the complexities of strategy formulation and implementation in real-world settings. Exploring alternative methodologies like network analysis, big data analysis, or agent-based modeling could offer deeper insights into these dynamic processes.

Addressing these gaps is crucial for:

Researchers: Gaining a more nuanced understanding of the evolving research landscape, identifying promising avenues for future investigation, and ensuring their contributions are relevant to current and emerging challenges.

Organizations: Leveraging robust and globally informed research to formulate and implement strategies that are effective, adaptable, and aligned with contemporary trends.

The Field: Enhancing its overall rigor, relevance, and impact by addressing potential biases, exploring diverse methodologies, and fostering knowledge exchange across geographical and disciplinary boundaries.

This study aims to contribute to addressing these gaps by:

Employing a bibliometric analysis to understand publication trends, prominent themes, and global research collaboration patterns in strategy formulation and implementation.

Identifying specific sub-domains within the field that warrant deeper investigation.

Analyzing regional research disparities and exploring opportunities for more inclusive knowledge development.

Examining the relationship between research findings and practical implementation challenges faced by organizations.

Considering alternative methodologies to gain deeper insights into the dynamics of strategy formulation and implementation.

By addressing these questions, this study strives to offer valuable insights that benefit both researchers and practitioners, ultimately contributing to the advancement of knowledge and strategic effectiveness in a dynamic and interconnected world.

III. RELATED WORK

This section explores existing research related to strategy formulation and implementation, focusing on recent bibliometric studies, established frameworks, and contemporary challenges in both formulation and implementation.

Bibliometric Studies

Several scholars have employed bibliometric techniques to analyze trends and patterns in various management research areas. This section highlights relevant studies related to bibliometric analysis in management and strategy research.

General Methods and Approaches: [10] provide a comprehensive overview of bibliometric methods in management and organizational research, outlining techniques for analyzing publication trends, author and institutional collaboration, and citation networks. [11] offer a practical guide on conducting a bibliometric analysis, detailing essential steps and considerations. [12] showcases the application of

bibliometric coupling and co-citation analyses in mapping the field of arts-based management. These studies provide valuable context for understanding the methodology employed in this current research and offer comparisons for strengths and limitations.

Related Studies in other Management Subfields: Beyond strategy research, bibliometric analyses have been conducted in various management domains. [13] explore the evolution of operations research and management science through a bibliometric lens, highlighting publication trends and research hotspots. [14] analyze the evolution of digital marketing research using Scopus data, uncovering thematic shifts and emerging areas. [15] map the development of business process management research, while [16] examine the field of artificial intelligence and machine learning in finance. These studies demonstrate the applicability of bibliometric approaches in diverse management areas and offer insights into potential synergies and cross-disciplinary research opportunities.

Strategy Formulation

While this study focuses on recent research output, understanding established frameworks and concepts in strategy formulation remains crucial. [1] provide a comprehensive textbook outlining core principles and frameworks for effective strategy formulation. This foundational knowledge underpins the analysis of recent research contributions and allows for identification of areas where current research expands upon or refines existing concepts.

Several recent studies delve deeper into specific tools and frameworks used in strategy formulation. [4] critically examine the evolution and current state of SWOT analysis, offering valuable insights into its strengths and limitations. [5] explore the integration of various frameworks, including SWOT and the Freeman model, for formulating organizational strategies, demonstrating the potential for combining different tools to enhance strategic decision-making. [6] emphasize the importance of PESTEL analysis for environmental scanning, highlighting its role in identifying external factors that shape strategic choices. Finally, [7] provides practical guidelines for applying Porter's Five Forces framework, a widely used tool for industry analysis. These studies showcase the diverse array of frameworks and tools employed in strategy formulation, each with its own strengths and applications.

Strategy Implementation

Effective strategy implementation remains a critical challenge for organizations. [2] explores the gap between formulating a strategy and translating it into concrete actions, emphasizing the need for effective communication, alignment, and leadership engagement. [3] examine the impact of strategy formulation and implementation in ailing organizations, highlighting the importance of considering organizational context and addressing internal challenges for successful implementation. [8] propose an introductory framework for understanding strategy implementation, outlining key factors and potential challenges. [9] offer a multiple-case study exploring the journey of business transformation, underscoring the importance of overcoming resistance to change and effectively managing the "unfreeze, change, and refreeze" process. These studies highlight the complexity of strategy implementation and offer valuable insights into overcoming challenges and achieving successful outcomes.

By critically examining both established frameworks and recent research on strategy formulation and implementation, this

study aims to contribute to a comprehensive understanding of the current landscape and identify promising avenues for future research.

IV. MATERIALS AND METHODS

A). Data Collection

This study leverages the Web of Science (WoS) database, renowned for its high-quality research coverage across various disciplines [17]. To ensure comprehensive collection of relevant publications, a three-pronged search strategy was employed:

Topic Search: The search terms "strategy formulation," "strategy implementation," and "strategy execution" were searched in both the title and author keywords fields.

Category Restriction: To refine the search and focus on management-related literature, the search was limited to four relevant WoS categories: Management, Business, Economics, and Operations Research & Management Science.

Publication Format Inclusion: To capture diverse outputs and perspectives, the search included all available publication formats within WoS, encompassing articles, proceedings papers, reviews, book chapters, early access, and editorials.

This comprehensive approach yielded a dataset of 672 scientific publications published between 1972 and 2022. While acknowledging the benefits of including other databases in future studies, this analysis focuses on WoS due to its well-established reputation and rigorous selection criteria.

B). Data Analysis

To delve into the collected data and extract meaningful insights, a comprehensive bibliometric analysis was conducted using the R Bibliometrix library. This software package offers robust tools for analyzing publication trends, author and institutional collaboration patterns, citation networks, and keyword frequencies, enabling a multifaceted understanding of the research landscape.

The specific analyses employed in this study include:

Publication Trends: Analyzing yearly publication counts, publication types, and authorship patterns to identify growth trajectories, dominant formats, and collaborative tendencies.

Citation Analysis: Identifying the most cited and influential publications, exploring citation networks, and assessing the overall research impact of different articles and authors.

Authorship Analysis: Examining author productivity, coauthorship patterns, and institutional affiliations to understand research collaboration networks and identify key players in the field.

Affiliation Analysis: Investigating the geographical distribution of research output and collaboration patterns across countries and institutions to reveal potential regional disparities and identify leading research centers.

Source Analysis: Evaluating the types of journals and publications in which strategy research is disseminated to understand the preferred communication channels and potential dissemination biases.

Keyword Analysis: Analyzing the frequency and cooccurrence of keywords to identify emerging themes, dominant research topics, and the evolution of key concepts within the field.

By meticulously applying these various bibliometric techniques, this study aims to uncover valuable insights into the

current state and future directions of research in strategy formulation and implementation.

V. RESULTS

Publication Trends:

- The search yielded 672 publications on strategy formulation and implementation from the Web of Science database, spanning 1971 to 2022.
- This indicates a steady growth in research output, with a potential acceleration requiring further analysis.
- Journal articles dominated the publication landscape, constituting 71.1% of the corpus, followed by proceedings papers (22.0%). Authorship and Collaboration:
- 1,280 authors from 69 countries contributed to these publications, highlighting the field's international reach and collaborative nature.
- Analyzing author productivity and co-authorship patterns could reveal key players and dominant research communities.
- Publication Formats:
- The dataset encompasses 9 different document types, suggesting diverse avenues for disseminating research findings.
- While articles and proceedings papers are prevalent, exploring the presence of reviews, book chapters, and editorials could offer insights into knowledge dissemination strategies.
- Citations and Impact:
- The publications have garnered a total of 24,635 citations, with an average of 36.66 citations per document.
- Identifying the most cited articles and authors can indicate influential studies and thought leaders in the field.
- Further analysis of citation networks could reveal intellectual structures and knowledge flow within the research community.

A). Trends analysis

 Fig.1: Surging Interest in Strategy Research: Exploring Publication Trends from 2009 to 2022, This figure illustrates a notable rise in research activity related to strategy formulation and implementation over the past 14 years (2009-2022). Notably, the study period witnessed a consistent increase in publications, surpassing the 20-publication mark annually since 2009. However, a distinct peak occurred in 2018, with a record of 45 published articles. While slight fluctuations occurred in years prior, the overall trend reveals a clear and sustained upsurge in research interest within this crucial domain.

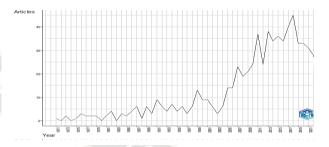


Figure 1. Annual trend of publications on strategy formulation and implementation

B). Most cited and influential publications

- Table I: Unveiling the Cornerstones of Strategy Research: Top 10 Most Cited Publications
- This table showcases the 10 most influential publications in the domain of strategy formulation and implementation, identified through their citation counts within the Web of Science database. Each entry reveals the publication's title, author(s), year of publication, and its corresponding global citation count.
- Observations:
- Citation counts range from 313 to 3,649, signifying a diverse level of scholarly impact among these publications.
- The top-ranked article, "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation" by Robert M. Grant, boasts a remarkable 3,649 citations, highlighting its enduring influence on shaping theoretical foundations and practical applications in the field.
- The table offers a valuable glimpse into the foundational texts and seminal works that have significantly shaped the trajectory of strategy research.

TABLE I. TOP 10 CITED ARTICLES.

Rank	Paper Title	Author	DOI	Total Citations
1	The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation	Robert M. Grant	10.2307/41166664	3,649
2	Towards a dynamic theory of strategy	Michael E. Porter	10.1002/smj.4250121008	1,556
3	Corporate Political Strategy Formulation: A Model of Approach, Participation, and Strategy Decisions	Amy J. Hillman and Michael A. Hitt	10.2307/259357	917
4	Business Unit Strategy, Managerial Characteristics, and Business Unit Effectiveness at Strategy Implementation	Anil K. Gupta and V. Govindarajan	10.5465/255955	675
5	Archetypes of Strategy Formulation	Danny Miller and Peter H. Friesen	10.1287/mnsc.24.9.921	598
6	CEO duality and firm performance: A contingency model	Brian K. Boyd	10.1002/smj.4250160404	563
7	Market-Oriented Ethnography: Interpretation Building and Marketing Strategy Formulation	Eric J. Arnould and Melanie Wallendorf	10.2307/3151878	543

How new top managers use control systems as levers of 10.1002/smj.4250150301 391 8 Robert Simons strategic renewal 9 A Contingency Approach to Strategy Implementation Vijay Govindarajan 10.5465/256341 385 at the Business-Unit Level: Integrating Administrative Mechanisms with Strategy Strategy implementation versus middle management William D. Guth and Ian C. 10.1002/smj.4250070403 10 313

Macmillan

C). Authorship analysis

self-interest

Fig.2: Charting the Landscape of Influence: Top 10 Authors in Strategy Research

This figure identifies the 10 most prolific and influential authors in the field of strategy formulation and implementation based on their publication output and impact within the Web of Science database. Each entry reveals the author's name, the number of publications related to strategy research, and a visual representation of their relative productivity.

Key Figures:

- Radomska J. emerges as the most prolific author with 12 publications, demonstrating significant contributions to the field.
- Olson EM and Slater SF closely follow with 6 publications each, further solidifying their influence in shaping strategy research.

The figure provides a snapshot of the intellectual landscape, highlighting prominent voices and potential collaborations within the research community

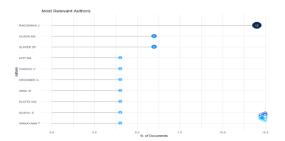


Figure 2. Top 10 authors in the field of strategy formulation and implementation

D). Coauthorship network analysis

The analysis of the Web of Science data revealed a diverse pool of 1,689 authors contributing to the 672 publications on strategy formulation and implementation. This collaborative spirit is further underscored by the co-authorship patterns presented in Table II.

TABLE II.	COAUTHORS' NETWORK ANALYSIS
-----------	-----------------------------

From	То	Frequency
United States	Canada	9
United States	China	9
United Kingdom	Canada	7
United States	United Kingdom	7
Germany	Switzerland	6
United Kingdom	Italy	6
United Kingdom	Australia	5
United Kingdom	China	5
United Kingdom	Switzerland	5
United States	Germany	5
United States	Spain	5
United States	Turkey	5
Netherlands	Belgium	4
United Kingdom	Germany	4
United States	Netherlands	4
United States	Switzerland	4
Canada	Germany	3
Canada	Qatar	3

From	То	Frequency
Canada	Switzerland	3
China	Canada	3
United Kingdom	Finland	3
United Kingdom	Spain	3
United States	Italy	3

E). Most Productive Countries

Table III: A Global Landscape of Strategy Research: Exploring Geographic Distribution of Publications, This table unveils the geographical distribution of research output in the field of strategy formulation and implementation. By analyzing publications from 69 countries within the Web of Science database, it sheds light on regional research activity and potential research hubs.

Key Findings:

• The United States emerges as the leading contributor with 154

- publications, representing 22.91% of the total output. This signifies its prominent role in shaping the current research landscape.
- China and the United Kingdom follow closely with 56 (8.33%) and 54 (8.03%) publications, respectively, highlighting their growing contributions to the field.
- The table provides a valuable overview of the global landscape of strategy research, offering insights into regional research strengths and potential knowledge exchange opportunities.

TABLE III. TEN MOST PRODUCTIVE AND CITED COUNTRIES

Rank	Country	Number of Publicat ions	Percent age	Total Citations	Average Article Citations	Single country publications (SCP)	Multiple country publications (MCP)	MCP Ratio
1	United States	154	22.91	14784	96	126	28	0.18
2	China	56	8.33	306	5.5	51	5	0.09
3	United Kingdom	54	8.03	1448	26.8	38	16	0.30
4	Canada	25	3.72	2242	89.7	17	8	0.32
5	India	24	3.57	306	12.8	22	2	0.08
6	Poland	22	3.27	56	2.5	21	1	0.05
7	Australia	21	3.13	309	14.7	13	8	0.38
8	Brazil	19	2.83	36	1.9	17	2	0.11
9	Finland	17	2.53	430	25.3	12	5	0.29
10	Germany	13	1.93	654	50.3	7	6	0.46

F). Sources and h-index analysis

Table IV: Disseminating Knowledge: Mapping the Publication Landscape of Strategy Research, This table delves into the publication channels for research on strategy formulation and implementation, showcasing the 374 distinct journals that have published articles in this domain. By analyzing publication counts and h-index values, it sheds light on the preferred outlets for disseminating research findings.

Key Findings:

• Strategic Management Journal emerges as the leading

- publication platform with 27 articles, boasting an hindex of 25, signifying its high impact and influence within the field.
- Journal of Business Research and Strategic Organization follow closely with 16 and 12 publications, respectively, highlighting their importance as dissemination channels for strategy research.
- The table offers a valuable glimpse into the journal landscape for strategy research, providing insights into preferred publication venues and potential dissemination biases.

TABLE IV. TEN MOST RELEVANT SOURCES

Rank	Sources	Number of publications	H-index	Total citations	Year of start
1	Strategic Management Journal	27	25	5296	1986
2	Journal of Business Research	16	12	687	1985

3	Strategic Organization	12	7	726	2013
4	Strategy Science	11	9	202	2016
5	Long Range Planning	11	6	252	1977
6	Industrial Marketing Management	10	9	574	2010
7	Journal of Strategic Marketing	9	7	143	2005
8	Journal of Strategy and Management	9	3	53	2013
9	Management Science	8	7	994	1978
10	Business Horizons	7	7	196	2008

G). Most relevant affiliations

Table V sheds light on the institutional landscape of strategy research, showcasing the research institutions that have contributed the most publications to the field between 1971 and 2022. Analyzing data from the Web of Science database, it identifies the leading research hubs and potential collaboration networks.

Key Findings:

 Wroclaw University of Economics emerges as the top contributor with 21 publications, highlighting its prominence in strategy research.

- University of Pennsylvania and Cardiff University follow closely with 18 and 15 publications, respectively, solidifying their positions as key research centers.
- The table provides valuable insights into the institutional landscape, potentially revealing collaborative networks and regional research strengths.

TABLE V.	TEN MOST RELEVANT AFFILIATIONS
----------	--------------------------------

Affiliation	Country	Number of publications	Percentage
Wrocław University of Economics	Poland	21	3.13
University of Pennsylvania	United States	18	2.68
Cardiff University	United Kingdom	15	2.23
University of Mannheim	Germany	11	1.63
University of Oxford	United Kingdom	11	1.63
Copenhagen Business School	Denmark	10	1.49
Georgia State University	United States	10	1.49
Harvard University	United States	10	1.49
University of Algarve	Portugal	10	1.49
University of St. Gallen	Switzerland	10	1.49

H). Most frequent keywords

The word cloud figure displays the intensity of occurrence of authors' keywords Fig.3, while Fig.4 depicts the most frequent words together with the median year that the word appears, with the word "performance" (112) being the most frequent word, followed by "management" (83) and "impact" (48).



Figure 3. Most frequent words

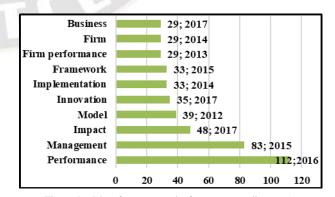


Figure 4. Most frequent words (frequency; median year)

VI. DISCUSSION

This study employed a bibliometric analysis to explore the landscape of strategy formulation and implementation research within the Web of Science database (1971-2022). Our findings provide valuable insights into various aspects of this domain:

- Growing Interest: The observed surge in publications Fig.1 reflects a rising research interest in strategy, potentially driven by dynamic business environments and evolving competitive landscapes.
- Theoretical Foundations: The high citation count of "The Resource-Based Theory of Competitive Advantage" (Table I) underscores its enduring influence on shaping foundational concepts and practical applications.
- Global Collaboration: The network analysis Fig.2 reveals a strong collaborative spirit among researchers, with developed nations (US, China, UK, Canada) exhibiting prominent roles. However, further investigation into collaboration patterns across diverse regions would be insightful.
- Citation Impact: While the US leads in total citations (Table III), Canada's higher average citation per publication suggests potential quality considerations beyond sheer volume. Exploring factors influencing citation impact across regions could offer valuable insights.
- Emerging Themes: The word frequency analysis (Fig. 4) unveils key themes like performance, management, and impact, alongside potentially emerging areas like "digitalization" or "sustainability". Examining the evolution of these themes over time could reveal shifting research priorities.

Limitations and Future Directions:

- Database Scope: As acknowledged, excluding other databases (e.g., Scopus) limits the comprehensiveness of the analysis. Future studies could benefit from a broader data spectrum.
- Quality Assessment: While citation counts offer valuable indicators, they don't capture all aspects of research quality. Future studies could incorporate additional quality metrics like peer review ratings or altmetrics.
- Granularity: Analyzing sub-fields within strategy (e.g., corporate strategy, international strategy) could reveal more nuanced trends and variations in research foci.
- Author Profiles: Exploring author data (e.g., affiliations, research interests) could offer insights into research communities and potential knowledge exchange opportunities.

Implications for Researchers and Organizations:

- This study provides a baseline understanding of the historical progression and current state of strategy research.
- Identifying prominent topics and emerging themes can inform researchers' decision-making in choosing avenues for exploration.

- Understanding collaboration patterns and influential scholars can facilitate knowledge exchange and potential research partnerships.
- Recognizing gaps and under-researched areas can guide future research agendas and contribute to advancing the field.

By addressing these limitations and exploring new avenues, future research can enhance our understanding of strategy formulation and implementation, ultimately contributing to more effective decision-making in diverse organizational contexts.

VII. CONCLUSION

In conclusion, this extensive bibliometric analysis, delving into the realm of strategy formulation and implementation research within the Web of Science database spanning from 1971 to 2022, furnishes valuable insights for both scholars and practitioners navigating the dynamic landscape of strategic management. The upward trajectory in publications underscores the growing academic interest in this pivotal domain, emphasizing its increasing efficacy in ensuring organizational success. The enduring influence of Grant's (1991) "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation" is evident, shaping both theoretical foundations and practical applications. The collaborative landscape, as revealed through network analysis, identifies the United States, China, the United Kingdom, and Canada as principal collaborators, with the U.S. boasting the highest average citations per article. This geographical distribution points to concentrations of highquality research and offers potential avenues for international collaboration to foster knowledge exchange and cross-cultural perspectives. The analysis also illuminates research gaps in regions like Latin America and Africa, urging future investigations to explore unique strategic challenges and opportunities in these contexts.

Word frequency analysis uncovers emerging themes such as "performance," "management," and "impact," indicative of a growing emphasis on measuring and achieving positive outcomes in effective strategy execution. This resonates with the heightened demands for organizational agility in today's dynamic business landscape. Furthermore, the inclusion of keywords like "digitalization," "sustainability," "disruption" signifies a nascent focus on integrating contemporary trends into strategic planning implementation processes. Future research avenues could delve deeper into these areas, investigating their specific influences on strategic frameworks and best practices.

This study acts as a roadmap for researchers, providing insight into the historical progression and current focal points of the field. The identification of seminal contributions, such as Grant's work, and promising areas for future exploration, such as regional disparities and emerging trends, can guide endeavors towards generating impactful knowledge. Practitioners stand to benefit by gaining a comprehensive understanding of the latest strategic thinking, leveraging these insights to enhance their planning and implementation processes. Organizations, informed by evidence-based approaches from this study, can increase their likelihood of

formulating effective strategies translating into sustainable competitive advantage.

While offering valuable insights, the study's scope is confined to the Web of Science database. Future research endeavors could broaden the scope by incorporating additional databases and extending the timeframe for a more comprehensive perspective. Additionally, delving into practical implications through case studies or in-depth industry analyses would enrich understanding of strategy formulation and implementation effectiveness in real-world settings. Acknowledging and addressing potential limitations of bibliometric methods, such as publication bias or incomplete data coverage, would further fortify the study's overall robustness.

REFERENCES

- [1] Hunger, J. D., & Wheelen, L. T. (2013). Essentials of strategic management (5th ed.). Pearson.
- [2] Gagné, M. (2018). From strategy to action: transforming organizational goals into organizational behavior. *International Journal of Management Reviews*, 20, S83-S104. https://doi.org/10.1111/jjmr.12159
- [3] Augustine, A. N., & Agu, A. O. (2013). Impact of strategy formulation and implementation in ailing organizations. *European Journal of Business Management*, 5, 232-241.
- [4] Helms, M. M., & Nixon, J. (2010). Exploring SWOT analysis Where are we now?: A review of academic research from the last decade. *Journal of Strategy Management*, 3, 215-251. https://doi.org/10.1108/17554251011064837
- [5] Esmaeili, A., Kahnali, R. A., Rostamzadeh, R., Zavadskas, E. K., & Sepahvand, A. (2014). The formulation of organizational strategies through the integration of freeman model, SWOT, and fuzzy MCDM methods: A case study of the oil industry. Transformation in Business and Economics, 13, 602-627.
- [6] Çitilci, T., & Akbalık, M. (2020). The importance of PESTEL analysis for the environmental scanning process. In *Handbook of Research on Decision-Making Techniques in Financial Marketing* (pp. 336-357). https://doi.org/10.4018/978-1-7998-2559-3.ch016
- [7] Dobbs, M. E. (2014). Guidelines for applying Porter's five forces framework: a set of industry analysis templates. *Competitiveness Review*, 24, 32-45.
- [8] Tawse, A., & Tabesh, P. (2021). Strategy implementation: A review and an introductory framework. *European Management Journal*, 39, 22-33. https://doi.org/10.1016/j.emj.2020.09.005
- [9] Santos, E., Queiroz, M., Borini, F. M., Carvalho, D., & Dutra, J. S. (2023). The journey of business transformation: unfreeze, change and refreeze a multiple case study. *Journal of Organizational Change Management*, 36, 47-63. DOI:10.1108/JOCM-03-2022-0063.
- [10] Zupic, I., & Cater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18, 429–472. https://doi.org/10.1177/1094428114562629
- [11] Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of*

- Business Research, 133, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070
- [12] Ferreira, F. A. F. (2018). Mapping the field of arts-based management: Bibliographic coupling and co-citation analyses. *Journal of Business Research*, 85, 348-357.
- [13] MERIGÓ, J. M., & YANG, J. B. (2017). A bibliometric analysis of operations research and management science. *Omega*, 73, 37-48. https://doi.org/10.1016/j.omega.2016.12.004
- [14] Faruk, M., Rahman, M., & Hasan, S. (2021). How digital marketing evolved over time: A bibliometric analysis on Scopus database. *Heliyon*, 7.12. https://doi.org/10.1016/j.heliyon.2021.e08603
- [15] Lizano-Mora, H., Palos-Sánchez, P. R., & Aguayo-Camacho, M. (2021). The Evolution of Business Process Management: A Bibliometric Analysis. *IEEE Access*, 9, 51088-51105.
 - https://doi.org/10.1109/ACCESS.2021.3066340
- [16] Ahmed, S., Alshater, M. M., El Ammari, A., & Hammami, H. (2022). Artificial intelligence and machine learning in finance: A bibliometric review. Research in International Business and Finance, 61, 101646. https://doi.org/10.1016/j.ribaf.2022.101646
- [17] Clarivate Analytics. (2023). Web of Science master journal list. Available online: https://mjl.clarivate.com/home (Accessed 11 November 2023).
- [18] Singh, V. K., Singh, P., Karmakar, M., Leta, J., & Mayr, P. (2021). The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis. Scientometrics, 126, 5113-5142. https://doi.org/10.1007/s11192-021-03948-5
- [19] Aria, M., & Cuccurullo, C. (2017). Bibliometrix: an R-tool for comprehensive science mapping analysis.

 Journal of Informetrics, 11, 959-975.

 DOI:10.1016/j.joi.2017.08.007.

AUTHORS BIOGRAPHIES

Zakariya M. S. Mohammed received his PhD in statistics from the University of the Western Cape, South Africa. He is currently assistant professor of statistics at the Department of Mathematics, College of Science, Northern Border University, Arar, Saudi Arabia. He has more than 20 years of experience in various areas of applied statistics. His research interest includes applied statistics, data science, strategic planning and performance indicators.

Mohamed Ben Ammar is an Assistant Professor in the Department of Information Systems at Northern Border University. Leveraging his expertise in affective computing, intelligent tutoring systems, and multimodal emotion recognition, he drives research and development to revolutionize how we interact with machines. His background in project management and strategic planning empowers him to effectively guide research initiatives, shaping the future of personalized learning and emotionally intelligent AI.

Ashraf F. A. Mahmoud received a Ph.D. degree in information systems from Al Neelain University, Sudan, in 2022. He is currently a lecturer at the Department of Computer Science, College of Science, Northern Border University, Arar, Saudi Arabia. He has more than ten years of experience in the IT field. His research interests include semantic web, data science, egovernment, cloud computing, and strategic planning.

Mohyaldein Salih received the Master degree in statistics from the University of Khartoum, Sudan. He is currently a PhD student in the university of KwaZulu-Natal, South Africa. He is a lecturer in the department of Mathematics, College of Science, Northern Border University, Arar, Saudi Arabia. His research interests include missing data, biostatistics and data science.

Faroug A. Abdalla received a Master of Computer Applications from Osmania University, India, and pursuing a Ph.D. degree in Information Technology from Al Neelain University, Sudan. He is currently a lecturer at the Department of Computer Science, College of Science, Northern Border University, Arar, Saudi Arabia. He has more than ten years of experience in the IT field. His research interests include machine learning and data science, cybersecurity, software engineering, e-government, cloud computing, and strategic planning.

Elfadl E. M. Elzein received a Ph.D. degree in Accounting from Al Neelain University, Sudan, in 2012. He is currently an Assistant Professor at the Department of Accounting, College of Business Administration, Northern Border University, Arar, Saudi Arabia. He has more than ten years of experience in the Accounting field. His research interests include Responsibility accounting, Cost and Managerial Accounting, Zakat and Tax Accounting, Auditing and, and strategic planning.

Mohammad Mamoun Ahmed Abubaker obtained a doctorate degree in Business Administration - Marketing from

Al-Zaim Al-Azhari University. He currently works as assistant professor marketing at Department of Marketing, College of Business Administration, Northern Border University, Arar, Saudi Arabia. He has more than ten years of experience in the field of marketing science and human resources science. His research interests include: marketing science studies, human resources science studies, and strategic planning.

Omer. M. A. Hamed has a master degree in statistics from the University of Khartoum, Sudan. He is a lecturer at the Department of Finance, College of Business Administration, Northern Border University, Arar, Saudi Arabia. His research interests include applied statistics and data science.

Osama M. A. Yousif received a master degree of information system from Al Neelain University, Sudan, He is a Ph.D. student in Information System at Al Neelain University, Sudan. He has more than ten years of experience in the IT field. His research interests include machine learning and data sciencecommerce, and cloud computing.

