

Bibliometric Analysis I

Editors

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PREFACE

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Chapter 1

AN OVERVIEW OF COMPARATIVE ANALYSIS OF BIBLIOMETRIC ANALYSIS AND SCIENTIFIC MAPPING IN LITERATURE REVIEW

Emine Banu BURKUT¹

INTRODUCTION

Bibliometric analysis has emerged as a critical tool in the field of architecture, offering a systematic and quantitative approach to understanding the evolution, trends, and impact of academic research. As the architectural discipline continues to expand, incorporating interdisciplinary approaches and addressing global challenges such as sustainability, urbanization, and technological innovation, bibliometric analysis provides valuable insights into the dynamics of scholarly communication and knowledge production.

One of the primary contributions of bibliometric analysis in architecture is its ability to map the intellectual structure of the field. By analyzing citation patterns, co-authorship networks, and keyword co-occurrences, researchers can identify influential works, emerging topics, and the relationships between different subfields. For instance, studies have revealed the growing emphasis on sustainable design, digital fabrication, and smart cities, reflecting the discipline's response to contemporary societal and environmental challenges. This mapping not only aids in understanding the current state of research but also helps in identifying gaps and opportunities for future investigations.

Moreover, bibliometric analysis facilitates the assessment of research impact and productivity. By examining metrics such as citation counts, h-index, and journal impact factors, stakeholders can evaluate the influence of individual researchers, institutions, and publications. This is particularly important in an era where academic performance and funding decisions are increasingly tied to measurable outcomes. For architecture, a field that blends theoretical inquiry with practical application, bibliometric analysis provides a means to quantify

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in architecture and related disciplines. By embracing interdisciplinary approaches and leveraging technological innovations, researchers can further optimize these methods to facilitate a more comprehensive and nuanced understanding of academic progress. As the demand for data-driven research evaluation increases, the synergy between bibliometric analysis and scientific mapping will remain a pivotal force in shaping the future trajectory of scholarly inquiry.

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Chapter 2

EXPLORING THE FRONTIERS OF HEALTH SCIENCES RESEARCH: A BIBLIOMETRIC OVERVIEW FROM 2020 TO 2024

Nursel ALP DAL¹
Demet ÖZER²

INTRODUCTION

‘Science’ is a broad term derived from Arabic “ilim”, Latin “scio, scientia” and English “science”, which means “to know”. Science has been shaped by the development of humanity and efforts to understand the nature of humanity (1,2). In the early ages, explanations of biological events were associated with mythological or religious beliefs. However, over time, especially the currents of change that started in Ancient Greece provided observation and logical justification. Philosophical ideas emerged in which thinkers such as Thales and Aristotle started to make logical inferences through observation. Although the development of scientific thoughts, which were intertwined with dogmatic thoughts in the Middle Ages, was limited, important scientific studies were carried out in fields such as mathematics, astronomy and medicine in the Arab Islamic world. Scientific methods and researches such as experimentation and observation by scientists such as Copernicus, Galileo, Kepler and Newton gave the word ‘science’ a more modern meaning in the New Age (3,4). Since the 18th century, especially with the Age of Enlightenment, science has not only been concerned with the course of natural phenomena, but has also assumed a key role in understanding social structures, human nature and the universe. Scientific methods and studies were developed through hypothesis tests and repetitive experiments (5). The main characteristics of science include being empirical, i.e. verifiability through observation and experimentation; providing explanations based on cause and effect; and continuous critical questioning and falsifiability (6,7). Science is divided into basic categories such as natural sciences (physics,

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that such research should be supported. In the future, different disciplines should be encouraged to collaborate to produce solutions to health problems.

Continuation of Research on COVID-19 and Global Health Issues: The COVID-19 pandemic has affected the course of research in the field of health sciences, and it is important that research on this subject continues to increase. It was concluded that more studies should be conducted on issues such as the long-term effects of the pandemic, mental health and strengthening health system.

Publishing More Conference Proceedings and Book Chapters: Conference proceedings and book chapters have an important place in different formats of academic production, but such publications are less preferred. More participation of researchers in such platforms will increase knowledge sharing and interaction.

Language Diversity and Global Collaboration: More research on health sciences in languages other than English will increase the universal contribution in this field. Publishing studies in different languages can help global health issues reach a wider audience.

Strengthening Fields Outside Health Sciences: While most of the studies focus on health and medicine, research in other important fields such as environmental science is more limited. More academic research is needed in areas such as environmental health, climate change and ecosystem health.

In conclusion, the increase in the number of academic studies in the field of health sciences shows that research in this field is becoming increasingly important and offers important opportunities for future research. However, in order to make this increase sustainable, multidisciplinary research should be encouraged, language diversity should be increased and different research formats should be supported.

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Chapter 3

BIBLIOMETRIC ANALYSIS OF SCIENTIFIC PUBLICATIONS ON CONSTRUCTION WORK ACCIDENTS IN THE WEB OF SCIENCE DATABASE

Hatice ÖZDEMİR¹
Ramazan KAYABAŞI²

INTRODUCTION

Although occupational health and safety (OHS) should have emerged alongside human labor and production, its development has taken a considerable amount of time throughout history. Consequently, efforts to improve employees' working conditions have only emerged in the past few centuries. Measures aimed at enhancing working conditions and legal regulations designed to prevent occupational accidents have emphasized the necessity of establishing decent and humane conditions in the workplace. This process began with the Industrial Revolution and has extended to significant international regulations. While the primary objective of OHS developments has been to protect health and safety, technological and social advancements, as well as political and commercial concerns, have hindered its progress. As a result, legal regulations did not reach sufficient maturity until the 21st century (1).

Occupational safety and health hazards in workplaces constitute a significant concern for both employers and employees. Work-related accidents and occupational diseases result in tangible and intangible losses; consequently, employees, employers, and the state incur substantial damages due to these adverse outcomes (2). In the 1970s, the Occupational Safety and Health Administration (OSHA) was established in the United States, and rigorous inspections were implemented regarding occupational safety and health (OSH). In Europe, standardized OSH regulations were instituted. By the commencement of the twentieth century, OSH was recognized as a global concern, and the International Labor Organization (ILO), founded in 1919, undertook significant measures to

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minimize accidents across all phases of construction, beginning with the design stage, and will significantly contribute to the sustainability of future studies in this domain.

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Chapter 4

BIBLIOMETRIC ANALYSIS ON THE CONCEPT OF “INTUITIONISTIC FUZZY SET”

Feride TUĞRUL¹

INTRODUCTION

Fuzzy Sets were introduced by Lotfi A. Zadeh in 1965 to address the limitations of classical (crisp) set theory in handling uncertainty and vagueness (1). In classical sets, an element either belongs to the set (membership = 1) or does not belong (membership = 0). However, many real-world scenarios involve imprecise concepts. For example, the notion of “tall people” can’t be precisely defined, as people’s perceptions of height vary. Fuzzy sets offer a more flexible approach by allowing partial membership, where an element’s membership degree can be any value between 0 and 1. This membership degree represents how strongly an element belongs to the set.

While fuzzy sets capture degrees of membership, they don’t account for uncertainty or hesitation in assigning these values. This limitation led to the development of Intuitionistic Fuzzy Sets (IFS) by K. Atanassov in 1983 (2). Intuitionistic Fuzzy Logic is the design of fuzzy logic systems by utilizing intuitionistic knowledge and experience. While studies on fuzzy logic continue, researchers have encountered incidents where they realized that fuzzy logic was also inadequate. The concept, which is a generalization of fuzzy logic, includes an additional degree of uncertainty by providing membership, non-membership and hesitation (uncertainty) values for each element. This improved framework is particularly useful in situations where uncertainty and ambiguity coexist and cannot be fully addressed by traditional fuzzy logic. The concept comes into play in situations where fuzzy logic cannot provide an answer or is inadequate (2-8). This approach is especially useful in complex systems that are difficult to model mathematically. It offers researchers smarter methods by imitating human problem-solving abilities.

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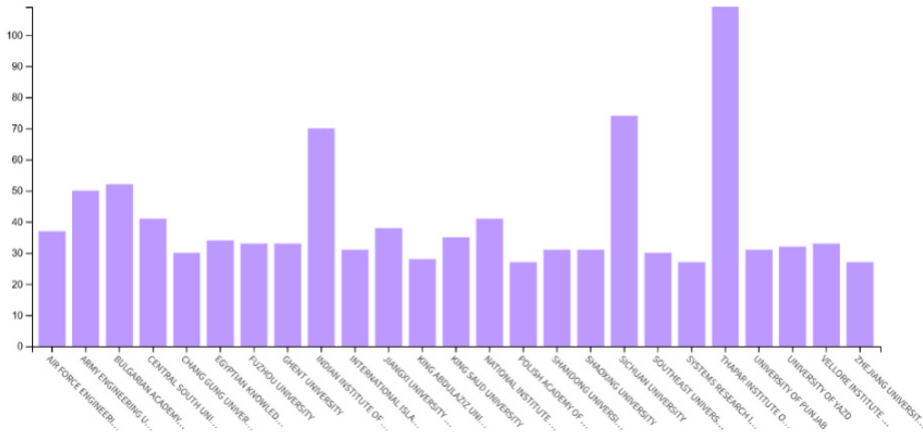


Figure 10. Distribution of institutions that work on the concept

CONCLUSION

In this study, a bibliometric analysis was conducted on the concept of 'Intuitionistic Fuzzy Set'. The Web of Science database was used as the database for the study. The obtained data was analyzed using the VOSviewer program. In this study, only the studies included in the Web of Science database are analyzed. When the analyses are examined, it is seen that the concept has attracted the attention of researchers since the day it was first defined and has gradually become a trending topic. In future studies, more detailed analyses can be conducted on this concept by examining all databases.

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Chapter 5

COST-PROFIT-VOLUME ANALYSIS: A BIBLIOMETRIC STUDY

Elifcan GÖÇMEN POLAT¹

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INTRODUCTION

In today's globalized world, competition among businesses has become increasingly intense. To remain competitive, companies must develop long-term strategies that enhance their profitability and ensure sustainable growth. The success of a business is primarily measured by its ability to generate profit. To achieve this, businesses must carefully analyze their fixed and variable costs while setting optimal selling prices. In addition to internal factors, external influences also play a crucial role in shaping a company's profitability. The impact of these factors can be effectively examined through Cost-Volume-Profit (CVP) analysis. This analytical tool not only provides valuable insights into a business's current financial position but also enables predictive assessments for future performance. By leveraging CVP analysis, businesses can proactively address uncertainties and implement strategic measures to mitigate risks. Since one of the fundamental objectives of businesses is to achieve profitability both in the short and long term, rational profit planning is essential. This study conducts a bibliometric analysis to explore the CVP framework using the Web of Science (WOS) database. The findings offer a comprehensive overview of the CVP framework, highlighting key research trends, influential studies, and methodological approaches within the field. For businesses to sustain their operations, they must generate profit in either the short or long term. To achieve this, they need to proceed in a structured and controlled manner. Businesses are influenced by both internal and external factors, with the most significant ones categorized into four main groups (1): The unit selling price of products, the sales volume of products, the unit variable cost of

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This word cloud (Figure 9) visualizes the most frequently used terms in methods related to CVP analysis, contribution margin, pricing, target profit, operating leverage, break-even analysis, and financial decision-making. Larger words indicate higher frequency in discussions on business strategy, profitability, and cost management.

CONCLUSION

The bibliometric analysis conducted in this study provides a comprehensive overview of the CVP framework, highlighting key research trends, influential studies, and methodological approaches within the field. By utilizing WOS data, the study examines publication patterns, country-specific contributions, and institutional affiliations, shedding light on the most active research hubs in CVP-related studies. The findings indicate a growing interest in profitability analysis, cost optimization, pricing strategies, and break-even analysis, with developed economies and leading academic institutions making significant contributions. The application of MAXQDA and VOSviewer software facilitates co-word and co-citation analysis, uncovering dominant themes, frequently used methodologies, and research collaborations in CVP literature. Ultimately, this study provides valuable insights into the evolution of CVP research, guiding future scholars toward emerging research opportunities and knowledge gaps within the domain. Future research could explore emerging trends such as digital transformation, sustainability, environmental assessment (20), cultural heritage (21) and industry-specific applications of bibliometric analysis. Expanding the scope to include diverse databases, advanced analytics, and cross-country comparisons would enhance the understanding of cost-volume-profit dynamics.

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Chapter 6

SUSTAINABILITY AND ENVIRONMENTAL IMPACT IN NURSING: BIBLIOMETRIC ANALYSIS AND EVALUATION OF CARBON FOOTPRINT RESEARCH

Esra ÖZKAN¹

INTRODUCTION

Increasing production and consumption worldwide are causing environmental problems to worsen. Along with the increasing dependence on fossil fuels during the urbanization process, environmental disasters such as temperature changes, floods, droughts, forest fires and hurricanes pose serious threats to human health. Failure to take timely action against this global health risk will disproportionately affect disadvantaged groups in particular. In line with Hippocrates' principle of "first do no harm", a bibliometric analysis of studies conducted in the field of nursing in reducing the carbon footprint will be examined (1,2).

GLOBAL WARMING

Global warming is defined as the increase in temperature in the atmosphere near the earth's surface, caused by natural or human influence (3). Increasing energy demand with industrialization has become a significant problem on a global scale. Energy use is seen as a great necessity for individuals to live a comfortable life and is also considered as an important indicator reflecting the level of development of countries (4,5)

As greenhouse gases such as carbon dioxide, methane and nitrous oxide continue to be released into the Earth's atmosphere, global temperatures are expected to rise and, as a result, changes in the world's climate are expected. It is stated that these changes may have an impact on weather events and, over time, may lead to transformations in environmental systems (6,7). Carbon dioxide (CO₂) is one of the largest components of greenhouse gas emissions, accounting for approximately 80% of total emissions. With the increased use of fossil fuels (coal,

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CONCLUSION

The findings of this study indicate that the subject of carbon footprint in nursing is not yet sufficiently recognized and widely integrated. This area of research, which began in 2008, indicates that sustainability and environmental impacts are becoming increasingly important in the healthcare sector. Studies focusing on issues such as reuse of perioperative textile products and waste management may guide the adoption of more sustainable practices in the field of nursing. However, the limited collaboration between authors may be attributed to the relatively new nature of the subject, but it is expected that collaboration will increase as awareness increases. The increase in carbon footprint studies, especially in clinical applications such as operating rooms and hemodialysis, suggests that more studies will be conducted in this area in the future. These findings emphasize the need to increase sustainability-related education, policy development, and research efforts in the field of nursing.

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Chapter 7

BIBLIOMETRIC ANALYSIS OF YÖKTEZ THESIS TOPICS IN INTERIOR ARCHITECTURE: A 25-YEAR REVIEW

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INTRODUCTION

This study collects data from the Higher Education Council's National Thesis Center database, with an emphasis on the investigation and analysis of interior architecture-related written papers. The study examines thesis titles in the YÖK Thesis collection from the Departments of Interior Architecture, Interior Design, and Interior Architecture and Environmental Design during the past 20 years. A large number of theses were examined, including master's and doctoral/Proficiency in Art theses from many fields. In this study, art competence and PhD were regarded synonymous and referred to as a doctorate title. Searching for "architecture" on the YÖKTEZ platform yielded more master's theses than doctorate or proficiency in art theses. The data were converted to Microsoft Excel and classified using a variety of criteria, including thesis numbers, authors, titles in Turkish and English, subjects, advisors, years, page counts, keywords, universities, academic levels, and languages. Content analysis approaches were used to find relevant keywords for theses that did not have any preset keywords. Interior architecture is considered as an interdisciplinary discipline that includes both scientific and artistic components, with doctorate and Proficiency in Art degrees being equivalent in Turkey's academic system, emphasizing the complimentary nature of both methods. A doctorate emphasizes scientific research and theoretical knowledge generation, whereas Proficiency in Art focuses on creative processes, practical projects, and artistic products. This research seeks to give a thorough review of the field's overall structure by integrating the counts of doctorate and Proficiency in Art theses.

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guarantee that interior architecture and environmental design continue to make significant contributions to environmental sustainability and societal well-being.

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