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Bibliometric analysis of airline industry research

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Abstract

The global airline industry has experienced significant growth and expansion throughout the 21st century, transforming aviation worldwide. For the past two decades, the airline industry has become a key area of research for academicians and industry players. This bibliometric analysis explores research trends in the airline industry using VOS viewer and the Web of Science database. The analysis employs VOS viewer to visualize the results by examining 1,100 documents, the study identifies key authors, institutions, and countries contributing to this field from 2002 to 2024. Notable contributors include Martin Dresner and Federico Ciliberto with institutions like Nanjing University and the University of Maryland leading in impactful research. The USA, China, and England are the top contributing countries, reflecting a global research network. The analysis highlights the top-cited documents and journals, such as the Journal of Air Transport Management, emphasizing the interdisciplinary nature of airline industry studies. Key insights from co-citation analysis reveal influential researchers and institutions, underscoring collaborative efforts in advancing knowledge. This Study provides a comprehensive overview of the field, offering valuable insights for researchers, policymakers, and industry stakeholders. This study offers a thorough overview of the academic and research landscape of airline industry research, providing valuable insights for researchers and policymakers.

Keywords: Airline industry, low-cost airlines, co-citation analysis, bibliometric analysis

Introduction

The evolution of air travel has its roots in mankind's fascination with flight, inspired by the grace of birds. Initially, air travel was synonymous with luxury, offering a premium experience that included various complimentary services [1]. However, as the industry expanded, the industry was no longer considered a luxury. Air travel has become more common and customers today have many choices of service providers which has created a significant impact on the airline industry [2]. With the growth of the aviation market and advances in technology, the airline industry is currently more competitive than it has ever been [3]. The emergence of low-cost carriers (LCCs) revolutionized the market by adopting an "unbundling" strategy [4]. This approach allowed passengers to select and pay for specific services they desired, such as baggage, meals, and entertainment, thereby reducing the overall cost of travel [5]. Airline services now encompass a broad range of offerings enhancing the travel experience. These services include convenient booking systems, streamlined check-in processes, in-flight meals, diverse entertainment options, frequent flyer programs, and access to airport lounges. The customization and flexibility provided by LCCs have made air travel more accessible and affordable, democratizing the industry and enabling a wider demographic to enjoy the benefits of flying [6]. Service quality is a key aspect of measuring customer satisfaction [7].

The competitive landscape has pushed airlines to continuously innovate and improve their services to retain customer loyalty and attract new passengers ^[8]. Environmental concerns have also become a focal point, with airlines investing in more fuel-efficient aircraft and exploring sustainable aviation fuels to reduce carbon emissions ^[9]. The impact of global events, such as the COVID-19 pandemic, has changed the industry ^[10]. Airlines have had to adapt by implementing stringent health and safety protocols, offering flexible booking policies, and expanding cargo operations to offset the decline in passenger numbers. The future of air travel looks poised for further transformation with the advent of electric and hybrid aircraft, supersonic travel, and even the possibility of commercial space flights ^[11]. As the industry evolves, the balance between cost-efficiency, service quality, and sustainability will be crucial in determining the success of airlines in a highly dynamic market.

Methodology

Bibliometric analysis become an important tool for researchers to analyze the research trend, identify core research or authors, as well as their relationship, Author, and Institutional Productivity [12]. Bibliometrics involves the statistical analysis of written publications for various purposes, such as identifying emerging trends in article and journal performance, examining collaboration patterns and research contributors, and exploring the intellectual structure of a specific domain within the existing literature [13]. The methodology involved a bibliometric analysis using the Web of Science database. The search terms "Airline industry," "Airline business," "Civil Aviation," and "civil Aviation Industry" yielded 2,849 documents. Refinements for article type, relevant categories, and English language reduced the dataset to 1,100 documents for VOS viewer mapping.

Date of search 18/07

Selection of key topic

Airline Industry

Online database: Web of Science

Input search terms

"Airline industry", "Airline business", "Civil Aviation" or "civil Aviation Industry".

Results: 2849 documents

Refine:

Document types: (Articles) **Refined Results:** 2674 documents **Refine:** Web of science category,

Transportation, Economics, Management, Transportation science technology, operations research management, and

Business.

Refined Result 1102

Refine

Language (English)
Refined Result 1100

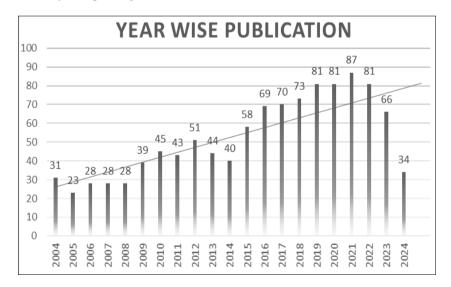
(Export for Bibliometric Mapping for VOS viewer)

Total data for analysis: 1100

| General features of data | |
|---|---------------------|
| No of publication | 1100 |
| Number of contributing authors | 2429 |
| Total number of citations | 28778 |
| Number of active years of publication | 2004-2024, 21 years |
| Average citations (AC)/year | 1370 |
| Productivity per active year of publication | 52.38 |
| Average Citation | 26.16 |
| H Index | 79 |
| Total Number of Institute | 1200 |

The data shows the yearly publication trend in the airline industry from 2004 to 2024. There is a general increase in the number of articles over the years, peaking at 79 in 2019

and 2021. Recent years, 2022 and 2023, maintain high publication numbers.



Data analysis

Using VOS viewer on the Web of Science database, the bibliometric analysis identified prominent authors, key research institutions, and influential countries in airline industry research. It highlighted top-cited documents and journals, revealing significant collaborative networks and emerging research trends from 2002 to 2024.

Top Contributing Authors

For top contributing authors, how many documents are

published are used? The bibliometric analysis of airline industry research reveals significant insights into prominent authors' scholarly contributions and impact. Among the top 10 authors identified through VOS viewer analysis on the Web of Science, Martin Dresner from the University of Maryland leads with 11 documents and a citation count of 300, achieving a mean citation of 27.27 and an H-index of 8. Federico Ciliberto from the University of Virginia follows closely, with an impressive 449 citations across 10

documents, resulting in a mean citation of 44.9 and an H-index of 7. Notable contributions also come from Yu-Hern Chang, John F. O'Connell, and Christian Hofer, each with a substantial number of citations and H-indices reflecting their influence in the field. Heesup Han from Sejong University

stands out with the highest mean citation of 54.6. This analysis highlights the diverse geographic representation and significant academic impact of researchers advancing airline industry knowledge.

| Sr. No | Author | Institute | Documents | Citations | Mean of Citations | H Index |
|--------|------------------------|--|-----------|-----------|-------------------|---------|
| 1 | Martin Dresner | University of Maryland | 11 | 300 | 27.27 | 8 |
| 2 | Federico Ciliberto | University Virginia | 10 | 449 | 44.9 | 7 |
| 3 | Yu-Hern Chang | National Cheng Kung University | 8 | 204 | 25.5 | 7 |
| 4 | John F. O'Connell, | University of Surrey | 8 | 127 | 15.88 | 6 |
| 5 | Christian Hofer | University of Arkansas System | 8 | 204 | 25.5 | 7 |
| 6 | Alessandro VM Oliveira | Instituto Tecnológico de Aeronáutica (ITA) | 7 | 133 | 19 | 6 |
| 7 | Jules Yimga | Embry-Riddle Aeronautical University | 7 | 43 | 6.14 | 5 |
| 8 | Heesup Han | Sejong University | 7 | 381 | 54.6 | 6 |
| 9 | Myongjin Kim | University of Oklahoma | 7 | 24 | 3.43 | 3 |
| 10 | Laurie A. Garrow | Georgia Institute of Technology | 6 | 91 | 15.17 | 6 |

Source: Author's analysis Web of Science

Top Contributing Institute

The bibliometric analysis of airline industry research highlights the contributions of the top 10 institutes, as determined through VOSviewer. Nanjing University of Aeronautics and Astronautics leads with 24 documents, accumulating 273 citations and a mean citation of 11.375. Cranfield University follows closely, contributing 23 documents with 656 citations, resulting in a mean citation of 28.5217. The University of British Columbia stands out with 21 documents garnering 792 citations and the highest total link strength of 14, indicative of its strong collaborative network. Embry-Riddle Aeronautical

University, while having 18 documents, has a lower citation count of 241. However, the University of Maryland demonstrates a remarkable impact with 16 documents and 1,387 citations, achieving the highest mean citation of 86.6875. Other notable contributors include Hong Kong Polytechnic University, the University of Virginia, and the Georgia Institute of Technology, each displaying substantial academic influence with high citation counts and mean citations. This analysis underscores the pivotal role these institutions play in advancing research in the airline industry, with significant contributions from diverse geographical regions.

Table 1: Top 10 Contributing Institute

| Sr. No | Organization | Documents | Citations | Mean of Citations | Total Link Strength |
|--------|---|-----------|-----------|-------------------|---------------------|
| 1 | Nanjing University Aeronaut & Astronaut | 24 | 273 | 11.375 | 4 |
| 2 | Cranfield University | 23 | 656 | 28.5217 | 4 |
| 3 | University British Columbia | 21 | 792 | 37.7143 | 14 |
| 4 | Embry Riddle Aeronaut University | 18 | 241 | 13.3889 | 0 |
| 5 | University Maryland | 16 | 1387 | 86.6875 | 9 |
| 6 | Hong Kong Polytech University | 15 | 612 | 40.8 | 9 |
| 7 | University Virginia | 15 | 764 | 50.9333 | 9 |
| 8 | Georgia Institute Technology | 14 | 366 | 26.1429 | 6 |
| 9 | Purdue University | 14 | 331 | 23.6429 | 2 |
| 10 | Natl Cheng Kung University | 13 | 332 | 25.5385 | 5 |

Source: Author's analysis using VOSviewer and Web of Science

Top Contributing Countries

The bibliometric analysis of airline industry research reveals the top 10 contributing countries. The USA leads by a significant margin, with 360 documents and 11,487 citations, resulting in a mean citation of 31.9083 and the highest total link strength of 154, underscoring its dominant

role and extensive collaborative network in this research area. China follows with 152 documents and 2,785 citations, indicating a growing influence in airline industry research. England, with 116 documents and 3,199 citations, maintains a strong presence, reflected in its total link strength of 97.

Table 2: Top 10 Contributing Countries

| Sr. No | Country | Documents | Citations | Mean of Citations | Total Link Strength |
|--------|-----------------|-----------|-----------|-------------------|---------------------|
| 1 | USA | 360 | 11487 | 31.9083 | 154 |
| 2 | Peoples R China | 152 | 2785 | 18.3224 | 70 |
| 3 | England | 116 | 3199 | 27.5776 | 97 |
| 4 | Taiwan | 78 | 2090 | 26.7949 | 33 |
| 5 | Canada | 68 | 2222 | 32.6765 | 50 |
| 6 | Australia | 64 | 1532 | Average | 45 |
| 7 | Germany | 58 | 1239 | 21.3621 | 40 |
| 8 | Spain | 58 | 1501 | 25.8793 | 41 |
| 9 | South Korea | 47 | 1830 | 38.9362 | 24 |
| 10 | Italy | 35 | 425 | 12.1429 | 24 |

Source: Author's Analysis Using VOSviewer

Taiwan and Canada also make notable contributions, with high mean citation counts of 26.7949 and 32.6765, respectively. Australia, Germany, Spain, South Korea, and Italy round out the top 10, each contributing significantly to the body of research with diverse and impactful studies. South Korea stands out with the highest mean citation of 38.9362 among these countries. This analysis highlights the global trend of airline business research, with significant contributions from countries across different continents, reflecting a collaborative and interdisciplinary approach.

Top cited document

The analysis of paper citations is a useful tool for evaluating the quality and influence of academic entities for authors, papers, and publication venues ^[14]. Citation analysis is a key technique in science mapping, based on the assumption that citations represent intellectual connections between publications, established when one publication cites another ^[15]. The bibliometric analysis of airline industry research identifies the top 10 most cited documents, showcasing influential contributions to the field. Leading the list is

Rust's[16] article on marketing strategy in the Journal of Marketing, with an impressive 1,035 citations, highlighting its significant impact. Belhadi's 2021 [17] study on supply chain resilience to COVID-19, published in Technological Forecasting and Social Change, follows with 400 citations, emphasizing timely and relevant insights. Azar's 2018^[18] article on the anticompetitive effects of common ownership in the Journal of Finance has garnered 344 citations, illustrating its importance in financial and regulatory studies. Gittell's 2006 [19] work on organizational resilience in response to September 11, featured in the Journal of Applied Behavioral Science, has received 336 citations, reflecting its relevance in crisis management. Other notable contributions include Ciliberto's 2009 [19] analysis of market structure in Econometrica, Kim's 2009 [21] study on E-Trust in Tourism Management, and Gimeno's 2004 exploration of competitive embeddedness in the Academy of Management Journal. Each of these articles has significantly advanced knowledge in their respective areas, demonstrating the diverse and impactful research being conducted within the airline industry.

Table 3: Top cited document

| Sr. No | Author | Article Name | Institute | Citations | Links |
|--------|-----------------------|--|--|-----------|-------|
| 1 | Rust (2004) [16] | Return on marketing: Using customer equity to focus marketing strategy | Journal of Marketing | 1035 | 2 |
| 2 | Belhadi (2021) [17] | outbreak. Lessons learned from the automobile and arrine industries and social change | | 400 | 0 |
| 3 | Azar (2018) [18] | Anticompetitive Effects of Common Ownership | Journal of Finance | 344 | 6 |
| 4 | Gittell (2006) [19] | Relationships, Layoffs, and Organizational Resilience Airline Industry Responses to September 11 | Journal of Applied Behavioral Science | 336 | 0 |
| 5 | Ciliberto (2009) [20] | Market Structure and Multiple Equilibria in Airline Markets | Econometrica | 260 | 5 |
| 6 | Kim (2009) [21] | Modeling roles of subjective norms and eTrust in customers' acceptance of airline B2C eCommerce websites | Tourism Management | 231 | 2 |
| 7 | Gimeno (2004) | Competition within and between networks: The contingent effect of competitive embeddedness on alliance formation | Academy of Management Journal | 227 | 4 |
| 8 | Liou (2008) | Building an effective safety management system for airlines | Journal of Air Transport Management | 213 | 5 |
| 9 | Clausen (2010) | Disruption management in the airline industry-Concepts, models and methods | Computers & Operations Research | 195 | 5 |
| 10 | Gupta (2018) | Evaluating service quality of the airline industry using hybrid best worst method and VIKOR | Journal of Air Transport Management | 192 | 6 |

Source: Citations analysis using VOSviewer and Web of Science

Top 10 Sources of Citations

Citation is very important because it is the basis of academics, that is, the pursuit of knowledge ^[22]. The bibliometric analysis of airline industry research identifies the top 10 sources of citations, providing a comprehensive overview of influential journals in the field. The Journal of Air Transport Management stands out as the leading source, with 245 documents and 6,171 citations, achieving a mean citation of 25.18 and the highest total link strength of 404, indicating its pivotal role in disseminating key research findings. Tourism Management follows, despite having only

16 documents, it boasts a high mean citation of 72.81, reflecting its significant impact on the field. Other notable sources include Transportation Research Part A: Policy and Practice and Transportation Research Part D: Transport and Environment, which collectively contribute a substantial number of citations and demonstrate their importance in policy and environmental studies within the airline industry. Expert Systems with Applications and the Academy of Management Journal show high mean citations of 43.30 and 89 respectively, underscoring their relevance in specialized research areas.

Table 3: Top 10 source of citation

| Sr. No | Source | Documents | Citations | Mean of Citations | Total Link Strength |
|--------|--|-----------|-----------|-------------------|----------------------------|
| 1 | Journal of Air Transport Management | 245 | 6171 | 25.18 | 404 |
| 2 | Tourism Management | 16 | 1165 | 72.81 | 57 |
| 3 | Transportation Research Part A-Policy and Practice | 34 | 1151 | 33.85 | 125 |
| 4 | Transportation Research Part D-Transport and Environment | 26 | 768 | 29.53 | 39 |
| 5 | Transportation Research Part E-Logistics and Transportation Review | | 613 | 24.52 | 99 |
| 6 | Expert Systems with Applications | | 563 | 43.30 | 16 |
| 7 | Academy of Management Journal | 6 | 534 | 89 | 29 |
| 8 | Journal of Transport Geography | 18 | 521 | 28.94 | 27 |
| 9 | Journal of Business Research | 11 | 507 | 46.09 | 31 |
| 10 | Transport Policy | 34 | 499 | 14.67 | 101 |

Source: Citations analysis using VOSviewer and Web of Science

Additionally, the Journal of Transport Geography, Journal of Business Research, and Transport Policy contribute significantly to the academic discourse, highlighting the diverse range of sources that support the advancement of airline industry research.

Top Cited Author

Identifying the top-cited researchers in a particular field is a common method to determine the best researchers. The bibliometric analysis of airline industry research identifies the top 10 cited authors, showcasing their significant contributions to the field. Leading the list is Renato Redondi, with an impressive 27 documents, reflecting his extensive research output. Following closely are Paolo Malighetti with 21 documents and Frédéric Dobruszkes and Xiaowen Fu, each with 17 documents, indicating their

strong influence in the field. Anming Zhang and Kun Wang also make notable contributions, with 12 and 14 documents respectively, highlighting their roles in advancing airline industry research. Zheng Lei, with 9 documents, and Keith J Mason, with 8 documents, are recognized for their impactful studies. Additionally, Graham Francis and Ian Humphreys, with 7 and 6 documents respectively, round out the list, demonstrating their ongoing contributions to the academic discourse. This analysis, using VOSviewer and Web of Science, underscores the diverse range of researchers who have significantly advanced knowledge in the airline industry. Their prolific output and high citation counts highlight the importance of their work in shaping industry practices and policies, as well as contributing to the broader field of transportation and logistics research.

Table 4: Top 10 cited author

| Sr. No | Author | Documents | Citations | Mean of Citations | Total Link Strength |
|--------|---------------------|-----------|-----------|-------------------|---------------------|
| 1 | Frédéric Dobruszkes | 17 | 1022 | 60.11 | 328 |
| 2 | Anming Zhang | 12 | 934 | 77.83 | 266 |
| 3 | Xiaowen Fu | 17 | 812 | 47.76 | 386 |
| 4 | Renato Redondi | 27 | 631 | 23.37 | 439 |
| 5 | Kun Wang | 14 | 607 | 43.35 | 301 |
| 6 | Zheng Lei | 9 | 577 | 64.11 | 247 |
| 7 | Keith J. Mason | 8 | 549 | 68.62 | 178 |
| 8 | Paolo Malighetti | 21 | 531 | 25.28 | 379 |
| 9 | Graham Francis | 7 | 517 | 73.85 | 210 |
| 10 | Ian Humphreys | 6 | 502 | 83.66 | 208 |

Source: Citations analysis using VOSviewer and Web of Science

Top Cited Institutes

Top-cited institutes are also an effective way to identify leading institutions in a particular field. In our bibliometric analysis of airline industry research identifies the top 10 cited institutes, emphasizing their pivotal roles in advancing the field. The University of Maryland leads with 16 documents and 1,387 citations, achieving a high mean citation of 86.68, indicating its significant influence. The University of North Carolina and Boston College follow, each with 1,103 citations from 7 and 5 documents, respectively, showcasing remarkably high mean citations of 157.5 and 220.6. The University of British Columbia, with 21 documents and 792 citations, demonstrates robust

research output and impact. The University of Virginia and Sejong University also feature prominently, with 15 and 11 documents, respectively, and substantial mean citations, reflecting their contributions to the field. The University of Michigan and MIT, with high mean citations of 120.6 and 68.2, further highlight the importance of their research. Cranfield University and Hong Kong Polytechnic University round out the list, each making significant contributions with high citation counts and mean citations. This analysis underscores the critical role these institutes play in shaping research and policy within the airline industry, highlighting their global influence and collaborative networks.

Table 5: Top Cited Institute

| Sr. No | Institute | Documents | Citations | Mean of Citations | Total Link Strength |
|--------|-------------------------------|-----------|-----------|-------------------|---------------------|
| 1 | University Maryland | 16 | 1387 | 86.68 | 68 |
| 2 | University N Carolina | 7 | 1103 | 157.5 | 41 |
| 3 | Boston Coll | 5 | 1103 | 220.6 | 18 |
| 4 | University British Columbia | 21 | 792 | 37.71 | 75 |
| 5 | University Virginia | 15 | 764 | 50.93 | 87 |
| 6 | Sejong University | 11 | 763 | 69.36 | 8 |
| 7 | University Michigan | 6 | 724 | 120.6 | 22 |
| 8 | MIT | 10 | 682 | 68.2 | 62 |
| 9 | Cranfield University | 23 | 656 | 28.52 | 50 |
| 10 | Hong Kong Polytech University | 15 | 612 | 40.8 | 41 |

Source: Citations analysis using VOSviewer and Web of Science

Top Citation Countries

The bibliometric analysis of airline industry research highlights the top 10 countries contributing significantly to the field, based on citation data from VOSviewer and the Web of Science. The USA leads with 360 documents and an impressive 11,487 citations, demonstrating its dominant

influence with a mean citation of 31.90 and the highest total link strength of 1,138. England follows with 116 documents and 3,199 citations, indicating a strong presence in the research community. China, with 152 documents and 2,785 citations, showcases its growing impact in the field. Canada, Taiwan, and South Korea also feature prominently, with

high mean citations of 32.67, 26.79, and 38.93, respectively, reflecting their significant contributions. Australia, Spain, Germany, and France complete the top 10, each demonstrating substantial research output and impact. France, although having the fewest documents among the

top 10, boasts a high mean citation of 34.4. This analysis underscores the global nature of airline industry research, with leading contributions from North America, Europe, and Asia, highlighting the collaborative and interdisciplinary approach driving advancements in this field.

Table 6: Top citation countries

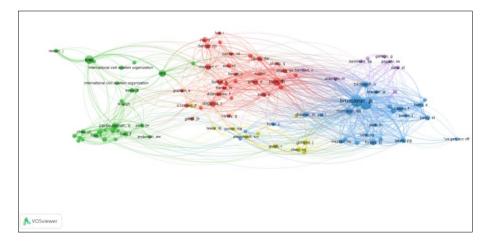
| ID | Country | Documents | Citations | Mean of Citations | Total Link Strength |
|----|-------------|-----------|-----------|-------------------|---------------------|
| 1 | USA | 360 | 11487 | 31.90 | 1138 |
| 2 | England | 116 | 3199 | 27.57 | 456 |
| 3 | China | 152 | 2785 | 18.32 | 448 |
| 4 | Canada | 68 | 2222 | 32.67 | 309 |
| 5 | Taiwan | 78 | 2090 | 26.79 | 194 |
| 6 | South Korea | 47 | 1830 | 38.93 | 162 |
| 7 | Australia | 64 | 1532 | 23.93 | 315 |
| 8 | Spain | 58 | 1501 | 25.87 | 236 |
| 9 | Germany | 58 | 1239 | 21.36 | 264 |
| 10 | France | 30 | 1032 | 34.4 | 153 |

Source: Citations analysis using VOSviewer and Web of Science

The Co-Citation Analysis of Cited References Co-Citations Cited Author Analysis

Co-citation analysis is a technique for science mapping that assumes publications that are cited together frequently are similar thematically (12). For analysis of the aviation industry, the image depicts a bibliometric analysis focusing on co-citations in the airline industry, using VOSviewer on Web of Science data. This analysis, with a threshold of 30 citations per author, includes 102 highly cited authors, providing insight into influential contributors within the field. The network visualization categorizes these authors into clusters based on their co-citation relationships. The green cluster features key organizations like the

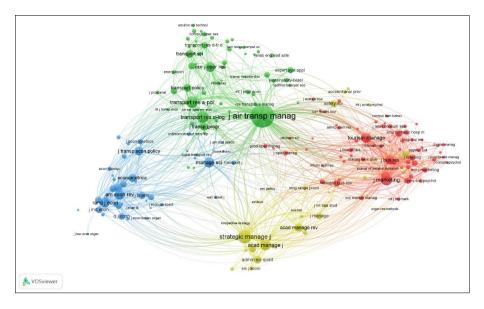
International Civil Aviation Organization (ICAO), and IATA, and prominent researchers such as Parasuraman A and Han H. The red cluster includes influential authors like Button K and Oum TH, who are pivotal in studies on airline economics and policy. The blue cluster highlights Brueckner JK known for his significant contributions to airline market analysis, along with other notable researchers like Morrison SA and Berry S. This co-citation map underscores the interconnectedness and prominence of specific authors and organizations, guiding researchers to foundational studies and thought leaders in the airline industry. It serves as a valuable tool identifying seminal works and key influences in the field's academic landscape.



Co-Citations of the cited source

The image presents a bibliometric analysis of airline industry research using VOSviewer, derived from the Web of Science database. The visualization maps co-citations of sources with a minimum citation threshold of 30, resulting in 197 significant sources being analyzed. The network is color-coded, indicating different clusters representing various research themes and disciplines interconnected through citation patterns. The green cluster, dominated by "Journal Air Transport Management," signifies a focus on air transport management and policy. The blue cluster, with

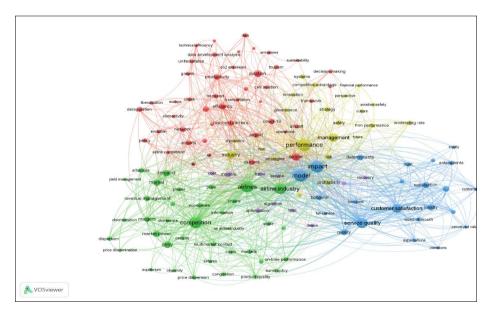
journals like "Econometrica" and "American Economic Review", reflects a strong emphasis on economic aspects and econometrics in transportation research. The red cluster centres on business and marketing, with prominent sources like "Tourism Management" and "Journal Marketing", indicating a strong link between airline industry research and tourism, hospitality, and consumer behavior studies. Overall, the image underscores the interdisciplinary nature of airline industry research, highlighting the interplay between transportation management, economics, and business strategies in shaping scholarly courses.



Keyword analysis

The image represents a bibliometric analysis of airline industry research, created using VOSviewer on data from the Web of Science. The visualization highlights 137 keywords, each appearing at least 10 times in the literature. The network graph categorizes these keywords into clusters based on their co-occurrence. The red cluster includes terms like "efficiency", "transport", and "low-cost carriers", focusing on operational aspects and cost management. The green cluster emphasizes "competition", "market", and "entry", reflecting studies on market dynamics and competitive strategies. The blue cluster centers on "service

quality", "customer satisfaction", and "loyalty", highlighting consumer-related research. Meanwhile, the yellow cluster deals with "performance" and "management", addressing organizational and strategic performance factors. This bibliometric map illustrates the diverse research themes in the airline industry, ranging from operational efficiency and market competition to customer satisfaction and strategic management. It provides a comprehensive overview of the interconnectedness and focal points within the field, guiding researchers to identify key trends and gaps for future studies.



Conclusion

The bibliometric analysis conducted using VOSviewer on the Web of Science database provides a comprehensive overview of the research landscape in the airline industry. Through the examination of 1,100 documents, the study identifies key contributors, influential institutions, and leading countries in this field from 2002 to 2024. Notable authors such as Martin Dresner and Federico Ciliberto, and institutions like Nanjing University and the University of Maryland, have significantly shaped the research output. The USA, China, and England emerged as the top contributing countries, indicating a diverse and global

research network.

The analysis highlights the interdisciplinary nature of airline industry studies, with top-cited journals like the Journal of Air Transport Management serving as pivotal platforms for scholarly discourse. Co-citation analysis further reveals the collaborative efforts among researchers and institutions, emphasizing the importance of partnerships in advancing knowledge. This study not only maps the academic landscape but also provides valuable insights into research trends, influential works, and emerging areas within the airline industry. The findings underscore the dynamic and evolving nature of this field, offering a solid foundation for

future research and policy-making endeavors aimed at addressing the challenges and opportunities in the global airline industry.

References

- 1. Lee E, Boger CA, Heyes A. Do passengers perceive flying first class as a luxury experience? Res Hosp Manag. 2021 Jan 2;11(1):15-25.
- 2. Law CC. A practical guide to airline customer service: from airline operations to passenger services. Irvine: BrownWalker Press, 2018.
- 3. Spicer R. Driven by Competition, The Airline Industry is Taking Off. Aviation Pros, 2018: https://www.aviationpros.com/airlines/article/12419680/driven-by-competition-the-airline-industry-is-taking-off
- Investopedia. An economic analysis of the low-cost airline industry. https://www.investopedia.com/articles/investing/02291 6/economic-analysis-lowcost-airline-industryluvdal.asp
- Chiambaretto P. Air passengers' willingness to pay for ancillary services on long-haul flights. Transp Res Part E Logist Transp Rev. 2021 Mar;147:102234.
- 6. Kwoka J, Hearle K, Alepin P. From the fringe to the forefront: Low cost carriers and airline price determination. Rev Ind Organ. 2016 May;48(3):247-268.
- 7. Agarwal I, Gowda KR. The effect of airline service quality on customer satisfaction and loyalty in India. Mater Today Proc. 2021;37:1341-1348.
- 8. Sun X, Zheng C, Wandelt S, Zhang A. Airline competition: A comprehensive review of recent research. J Air Transp Res Soc. 2024 Jun;2:100013.
- 9. Abrantes I, Ferreira AF, Silva A, Costa M. Sustainable aviation fuels and imminent technologies-CO₂ emissions evolution towards 2050. J Clean Prod. 2021 Sep;313:127937.
- Szczygielski JJ, Charteris A, Bwanya PR, Brzeszczyński J. The impact and role of COVID-19 uncertainty: A global industry analysis. Int Rev Financ Anal. 2022 Mar;80:101837.
- 11. Adler EJ, Martins JRRA. Hydrogen-powered aircraft: Fundamental concepts, key technologies, and environmental impacts. Prog Aerosp Sci. 2023 Aug;141:100922.
- 12. Ahlawat R, Ghai M, Garg SK. Bibliometric review of scholarly work on service quality and customer satisfaction in hotels. Multidiscip Rev. 2023 Sep 13;6(3):2023030.
- 13. Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: An overview and guidelines. J Bus Res. 2021 Sep;133:285-96.
- 14. Talaat FM, Gamel SA. Predicting the impact of number of authors on number of citations of research publications based on neural networks. J Ambient Intell Humaniz Comput. 2023 Jul;14(7):8499-8508.
- 15. Hjørland B. Citation analysis: A social and dynamic approach to knowledge organization. Inf Process Manag. 2013 Nov;49(6):1313-1325.
- 16. Rust RT, Lemon KN, Zeithaml VA. Return on marketing: Using customer equity to focus marketing strategy. J Mark. 2004 Jan;68(1):109-127.

- 17. Belhadi A, Kamble S, Jabbour CJC, Gunasekaran A, Ndubisi NO, Venkatesh M. Manufacturing and service supply chain resilience to the COVID-19 outbreak: Lessons learned from the automobile and airline industries. Technol Forecast Soc. Change. 2021 Feb;163:120447.
- 18. Azar J, Schmalz MC, Tecu I. Anticompetitive effects of common ownership. J Finance. 2018 Aug;73(4):1513-1565.
- 19. Gittell JH, Cameron K, Lim S, Rivas V. Relationships, layoffs, and organizational resilience: Airline industry responses to September 11. J Appl Behav Sci. 2006 Sep;42(3):300-329.
- 20. Ciliberto F, Tamer E. Market structure and multiple equilibria in airline markets. Econometrica. 2009;77(6):1791-1828.
- 21. Kim HB, Kim TT, Shin SW. Modeling roles of subjective norms and E-Trust in customers' acceptance of airline B2C eCommerce websites. Tour Manag. 2009 Apr;30(2):266-277.
- 22. Vokurka RJ. The relative importance of journals used in operations management research: A citation analysis. J Oper Manag. 1996 Nov;14(4):345-355.