A Multidisciplinary Perspective Of Big Data In Management Research

Abstract :

The case study on big data in management research would include a brief summary of the study's background, problem, methodology, and key findings. It would go through how big data is transforming the area of management and stress how crucial it is to the advancement of modern management methodologies. The study examines a number of big data research methodologies and outlines the challenges and achievements in this field. Big data has a wide range of effects on management, including marketing, information systems, and strategy. Important discoveries indicate that more research is required to fully grasp its potential. This summary offers a concise overview of the comprehensive analysis presented in the case study.

Introduction:

The paper introduces the significance of big data in the modern era, emphasizing its evolution as a prominent buzzword since 2011. It highlights the increasing popularity of the term "big data" on Google Search and its relevance across diverse disciplines, from computer science to social sciences. The hidden value of big data has drawn the attention of scholars and practitioners alike, leading to exploration of its implications for various fields, including business. Big data is seen as a transformative force, revolutionizing business models and enabling data-driven decision-making.

Despite its potential, the paper acknowledges challenges in extracting value from the sheer volume and complexity of data. It calls for the development of data-driven management mechanisms to harness the opportunities presented by big data. However, the full understanding of how big data creates value remains limited.

The paper emphasizes the need for a comprehensive review of big data literature across social science disciplines, as there is currently limited synthesis of knowledge in this area. It aims to clarify the boundaries of the subject, identify key themes, and provide a reference point for advancing big data research in management fields.

The paper significantly advances management and big data research. By offering an extensive assessment that makes clear the intricacies of big data, its management applications, and current research trends, it tackles the disorganized character of the body of existing literature. Additionally, the study synthesizes research from a variety of management viewpoints, establishing connections between information management, marketing, operations, and organization to provide an integrated framework. This paradigm proposes more efficient use of big data in the management domain and improves our knowledge of how academics handle big

data. All things considered, the work provides insightful information and provides a foundation for further study in this developing topic.

Evolution of Big Data:

The authors Jie Sheng, Joseph Amankwah-Amoah and Xiaojun Wang talks about how the meaning of big data is changing over time and across different industries. It points out that big data is a dynamic notion. Because there is no set limit on the amount of data that may be considered big data, there is no set way to measure it. The "Three Vs" of big data—volume, variety, and velocity—are introduced. These three variables represent the data's constant expansion in terms of size, diversity, and speed. Big data is defined by its complexity, since information comes from a variety of sources including social media, smart devices, and websites. Because it includes unstructured, semi-structured, and structured data, it is a complex phenomena that offers businesses benefits as well as difficulties.

Big data is described in the study's context as an exceptionally high volume of data from several sources, including structured, semi-structured, and unstructured data. By drawing important conclusions from a wide range of information, this deluge of data significantly affects decision-making and swamps corporate processes in real-time. The definition of big data provided by the study includes a wide range of data kinds, such as text, online, social media, multimedia, and mobile data. This underscores the need for research clarity in order to fully comprehend and utilize the potential of big data in management research.

Big Data in Practice:

In real applications, the amount of large data speeds up technology development. Over the past few decades, sophisticated platforms and systems have been created and put to use for handling

massive volumes of data. These are superior to traditional techniques in every aspect of analytics and data management. Russom (2011) predicts that in the near future, corporate IT commitment will probably see a rise in the usage of advanced analytics tools including SQL, in-memory databases, and visualization. As big data expands, emerging techniques will become increasingly in demand since these advanced programs offer more powerful features and flexibility, which boosts business analytics' efficacy and cost-efficiency.

The paper emphasizes how big data is influencing corporate operations and economies throughout the world, and how it is changing the way that decisions are made. It highlights how diverse big data is seen as an extremely valuable company asset that may produce useful business insights. The data-driven method is viewed as a way to dramatically increase company performance by providing more accurate forecasts based on strong data proof rather than gut feeling. Big data is becoming more and more important in today's corporate operations, and there is compelling evidence to imply that it is a necessary component for companies looking to obtain a competitive edge.

Managerial attitudes and procedures are changing as a result of firms implementing data-driven decision-making techniques. Organizational culture, leadership philosophies, human resource management, and other management techniques are all being impacted by this change. The substantial effects of big data are shown in improved operational efficiency, lower management risks, and stronger customer interactions. These advantages eventually result in greater competitive advantages through improved operational management and marketing tactics.

In the age of big data, the paper emphasizes the critical necessity for a defined route toward management development. It describes the development of big data in academic administration and points to potential directions for further study. Researchers and practitioners are eager to find strategic applications for enormous databases, spurred on by the rise of big data. Even though there are a ton of articles and papers on business intelligence, analytics, and big data, there is still a lot of room for study to solve the issues of big data, especially when it comes to integrating big data with management and knowledge economy application disciplines.

Problem statement :

The rising popularity of big data in the management community and the necessity of comprehending its ramifications for business and organizational decision-making are the main issues or challenges that the author addresses in this research study. As the bulk of studies were first carried out inside technology-related fields, the study emphasizes that while scientific research around "big data" started to acquire significance in the 21st century, the discovery of big data's economic applications trailed behind. However, the study reveals that the management community has published an increasing number of articles addressing big data concerns, particularly after 2011. This pattern emphasizes how important it is for management research and practice to comprehend and use large data.

Big data is becoming more and more relevant in helping to inform organizational choices and boost business competitiveness, which makes the issue important. The exponential rise in big data research in management, particularly after 2011, is indicative of the general increase in interest in the term "big data" during the previous ten years. This suggests that in order to optimize data-driven concepts and approaches and bring about inter-organizational changes, it is necessary to investigate the business implications of big data. Additionally, big data research should develop a comprehensive system based on theoretical frameworks and models that are applicable in the real world. Big data is a tool for optimizing data-driven concepts and techniques, and business-related research is essential to achieving interorganizational changes and business objectives.

Methodology:

A thorough literature study and data analysis were part of the research paper "A Multidisciplinary Perspective of Big Data in Management Research" approach. Using keywords associated with big data and its management implications, the authors carried out a thorough search for pertinent publications. The term "big data" was used in the first search to obtain a

broad understanding of the quantity and significance of research. Following that, the search was expanded to include other phrases like "big data analytics," "text analytics/analysis," "web analytics," "social media (analytics)," and "mobile analytics" in order to obtain a wider variety of publications. To locate publications with keywords, the writers searched databases on sites like Business Source Complete, Informs, ScienceDirect, JSTOR, Springer, Emerald, and Wiley.

Following the first search, more than 300 publications with a distinct big data focus and management implications were chosen for additional examination. After carefully reading and analyzing the chosen papers, a final sample of 285 articles was included to the research. To characterize the features of the sample, each article was coded based on a number of predefined criteria, including the analytics category, journal subject, and kind of research paper. To determine the precise subject and field of application that each article addressed, the substance of the publications was examined. Based on the information that was retrieved, the big data research viewpoints in the organizational framework were recognized and categorized.

Using this technique, the authors were able to gather a broad overview of the body of literature already in existence and offer a thorough study of the many viewpoints on big data in the field of management research. The authors identified important topics and trends in the big data research connected to management by conducting a systematic analysis of the selected publications. This process yielded valuable insights and discoveries for the study.

Analysis :

The research paper identifies several common patterns that emerged from the data collected and are listed as follows:

Exponential Growth: Over the course of the study period, management-related research on big data expanded exponentially, particularly after 2011. This was demonstrated by an analysis

of the distribution of articles by year of publication. This is consistent with the previous ten years' growing trend of interest in the term "big data."

Research Paper Type: Based on the distribution of articles by research paper type, it was found that the bulk of the papers were empirical and modeling studies, with just a tiny percentage being conceptual and qualitative assessments. This pattern highlights the useful application of big data in management research by pointing to a major emphasis on empirical and modeling studies to look into particular issues and enhance current systems.

Subject Areas: The articles' distribution according to subject areas showed how big data is applied differently in different management fields. Numerous publications investigating the efficacy of big data-driven methodologies in their respective domains were published by a number of topic fields, including information management, marketing, operation research, and management science. This graph shows how big data has a broad influence on several management study fields.

The data's evidence backs up the study by showing how big data is becoming more and more popular in the management community, how modeling and empirical research are valued, and how big data is being applied in a variety of ways across different management domains. These trends offer insightful information on how big data is changing in the field of management research.

Solutions or Alternatives:

Improved Data administration Strategies: Putting in place more complex frameworks for data administration in order to deal with big data's exponential expansion and diversity.

Interdisciplinary Approach: Promoting cooperation between different departments, including marketing, operations, and information technology, in order to better utilize big data.

Investing in Machine Learning and Advanced Analytics: Making better use of large data by applying machine learning algorithms and advanced analytics technologies.

Put Qualitative Research First: To counterbalance the present emphasis on empirical and modeling studies, more attention is being paid to qualitative and conceptual research.

Pros and Cons of the Each Potential Solution:

Enhanced Data Management Strategies:

Pros: Better organizing and analysis of massive data collections, enhanced decision-making skills.

Cons: May raise issues with data privacy and need a large investment in technology and talent.

Interdisciplinary Approach

Pros: Fosters creativity and brings together many fields of knowledge for a comprehensive perspective.

Cons: Could result in difficulties with cooperation and disagreements with technique and goals.

Investing in machine learning and advanced analytics has the following benefits.

Pros: it allows for automation, predictive modeling, and deeper insights.

Cons: Expensive technology; needs specific skill sets.

Put an emphasis on qualitative research:

Pros: Offers a greater comprehension of the underlying patterns and situations.

Cons: May not be as scalable as quantitative approaches; time-consuming.

Recommendations:

Investing in Machine Learning and Advanced Analytics:

This approach is the most successful as it immediately tackles the need for a more in-depth and advanced examination of the ever-increasing amount and complexity of big data in management research.

Plan of Implementation:

Evaluation and Scheduling:

To pinpoint the areas where advanced analytics might be most helpful, conduct a requirements assessment.

Create a strategic plan that outlines goals, deadlines, and the distribution of resources.

Purchasing Technology:

Invest in machine learning platforms and sophisticated analytics tools.Verify that it works with the current data systems.

Enhancement of Skills:

Train analysts and researchers in machine learning and advanced analytics.

Work together or hire specialists in these domains.

Pilot Initiatives:

Conduct pilot projects in strategic areas to evaluate and improve methods.

After gathering input, make the required modifications.

Completely Integrated:

Implement the solution in all research divisions or across the organization.

Continue to keep an eye on and assess the implementation's efficacy.

Feedback and Iteration:

Review results and comments often to hone and enhance the analytics strategy.

Challenges Faced During The Implementation.

The following are some obstacles to overcome when applying advanced analytics and machine learning to management research:

Limitations on Resources:

Problem: Exorbitant expenses for knowledge and technology.

Mitigation: Look for grants, collaborations, or investment plans with phases.

Integration of Technology:

Integrating new tools with current systems is a challenge.

Mitigation: Engage IT specialists and carry out exhaustive compatibility analyses.

Deficits in Skills:

Problem: Absence of sophisticated analytics knowledge inside the organization.

Mitigation: Make training investments and maybe recruit experts.

Security and Privacy of Data:

Keeping massive data secure and private is a challenge.

Mitigation: Adopt strict data security guidelines and abide by the law.

Opposition to Change:

Overcoming staff or stakeholder opposition is a challenge.

Mitigation: Use good change management techniques, such as engagement and communication.

Results and Discussion:

The author anticipated the following from the application of advanced analytics and machine learning in management research:

Improved capacities for data processing and analysis that result in more precise forecasts and insights.
Enhanced decision-making procedures as a result of deeper, data-driven insights across a range of managerial fields.
A possible improvement in the caliber of research output, with more intricate and sophisticated problems being successfully handled.

When these findings are interpreted inside a case, they show a major development in the field of management research. Strategic decision-making processes become more innovative and successful as a result of the implementation, which results in more complicated and nuanced understandings of management challenges. This also represents the movement in management studies toward a more data-centric approach that is in line with the changing digital environment in business and research.

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