

Contemporary applications of Big Data Management Information System: An Empirical study

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Abstract

In the field of information systems in India, big data management has become a vital area in recent years. It is necessary to efficiently store, analyze, and use this vast amount of data for actionable insights and decision-making due to the exponential growth of data generated by different sources, including social media, IoT devices, e-commerce transactions, and more. Numerous industries, including e-commerce, marketing, logistics, healthcare, finance, and more have found extensive use for big data management in India. To measure risk and make investment decisions, it is used in finance to analyze market data, consumer behavior, and investment trends. It is used in e-commerce to examine client information, purchasing patterns, and preferences for individualized suggestions and niche marketing. It is applied to logistics to increase effectiveness and optimize supply chain operations. It is employed in marketing to segment customers, analyze sentiment, and improve campaigns. These modern Big Data Management software in India have transformed industries, made it possible to make decisions based on data, and altered the operations and business strategies of companies.

Keywords: Information systems, Big data management, E-commerce, Finance, Decision making.

Introduction

Information Systems in India have successfully applied big data management in several fields, including supply chain management, consumer analytics, and healthcare. Organizations have been able to improve decision-making, optimize operations, and improve customer experiences because of the effective management and analysis of massive volumes of data. Big Data Management applications in India are anticipated to significantly develop and revolutionize sectors as technology and data both improve. This would spur innovation and enhance organizational performance. In India's information systems industry, big data management is being used more and more frequently in a variety of modern applications. "Supply chain management" is one of the main areas where big data management has become very popular. "Big Data Management" has been widely used in supply chain management across a variety of businesses, it was reported. Organizations may optimize their logistics operations, improve inventory management, boost demand forecasting, and streamline procurement procedures by utilizing Big Data Analytics in supply chain management (Tiwari et al. 2018).

Customer analytics is a prominent area of current Big Data Management application in India. relationship-focused Big Data integration's strategic significance for cutting-edge customer analytics. Businesses across a wide range of industries use big data to analyze consumer data from a variety of sources, including social media, online transactions, customer feedback, and more, to learn more about consumer preferences, behaviors, and sentiment. Organizations may personalize customer experiences, enhance marketing initiatives, and increase customer retention thanks to this information. To increase customer happiness and loyalty, big data management is utilized in the retail sector, for instance, to analyze consumer data to spot patterns and trends, develop focused marketing strategies, and provide personalized product suggestions (Kitchens et al. 2018).

Additionally, India's healthcare industry is utilizing big data management. “Big Data Management Information system” has the potential to revolutionize the way healthcare is delivered by analyzing vast amounts of health-related data, including patient data, genomic data, and electronic health records (EHRs). Insights into disease trends, risk factors, disease breakout predictions, and the creation of individualized treatment plans can all be obtained by healthcare organizations by utilizing big data. Drug discovery, community health management, and clinical research all make use of big data. For instance, Big Data Management is utilized in the field of telemedicine to analyze patient data to enable remote monitoring, diagnosis, and treatment, enhancing access to healthcare services and patient outcomes (Laudon & Laudon, 2015).

Literature Review

Healthcare service in India could be revolutionised by the use of big data analytics in medical applications. According to Das et al. (2018), “Big Data Management Information system” is becoming increasingly important in the medical field. By analysing massive amounts of data from electronic health records (EHRs), medical imaging, genomics, and wearable devices, researchers can learn more about disease patterns, treatment efficacy, and patient outcomes. Big Data Management helps healthcare organizations to process and examine sizable data quantities in real-time, permitting early diagnosis, individualized treatment regimens, and improved patient care. For instance, in India, “Big Data Management Information system” is being used in telemedicine, where remote patient monitoring, remote consultations, and telehealth services are made possible through the analysis of medical data, improving access to healthcare.

In India, the combination of big data management and cloud computing has also become an important modern application. Big Data is becoming more popular on cloud computing platforms, which offer scalable, affordable, and adaptable solutions for storing, processing, and analyzing massive amounts of data, according to Hashem et al. (2015). Organizations in India can use cloud-based big data management to handle enormous amounts of data and acquire insightful information for decision-making by utilizing the computing and storage capacity of the cloud. For instance, companies in India can use cloud-based big data analytics to analyze customer, social media, and market data to get insights into customer preferences, market trends, and competition intelligence, resulting in better business plans and outcomes. The field of accounting education has also benefited from the use of big data management. Gamage (2016) emphasizes the expanding requirement for accounting instructors to adjust to the Big Data era and give students the skills they need to manage and analyze substantial amounts of financial data. The use of specialized tools and techniques for data collecting, storage, processing, and analysis—known as “Big Data

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Management"—in accounting education enables students to gain insights into financial data, spot patterns, trends, and anomalies, and make data-driven financial decisions.

For the planning of public transportation in India, Zannat and Choudhury (2019) stress the usage of new big data sources. These sources include information from GPS devices, smart cards, social media, and crowdsourcing data, which is gathered and analysed to learn more about travel trends, passenger demand, and the use of transportation infrastructure. Transport planners in India are able to analyse enormous amounts of data in real-time thanks to big data management, which results in better fleet management, better passenger experiences, and optimised routes. Implementing big data analytics systems is a prominent example of a big data management application in India. In the context of implementing "Big Data Management Information system" Verma et al. (2018) highlighted the extension of the technological acceptance model. Big Data Management helps businesses in India to gather, store, and analyse enormous volumes of data from numerous sources, including social media, market, and consumer data, to get insights for innovation, risk management, and decision-making.

In India, business and management have also discovered important uses for big data management. The rising body of research on "Big Data Management Information system" for management and business is highlighted by Ardito et al. (2019). Organizations in India are able to analyze massive amounts of data from a variety of sources, including supply chain, financial, and consumer data, to acquire insights into market trends, customer behavior, and other factors. Big Data Management can be used by businesses to establish data-driven decision-making processes, streamline supply chain operations, personalise marketing efforts, and increase customer service, all of which will improve business performance, foster innovation, and give them a competitive edge. In the IoT era, Sollins (2019) emphasises the necessity of striking a balance between innovation and security and privacy concerns. Big Data Management is essential for gathering, storing, and analysing the vast volumes of data produced by the proliferation of connected devices and sensors in order to identify potential security issues and protect user privacy.

Grover and Kar (2017) organizations in India can use big data management to analyze vast amounts of data from various sources, including social media, consumer data, and sensor data, to obtain insights, spot trends, and make data-driven choices. large Data Management is a tool that businesses can use to adopt advanced analytics techniques, such as sentiment analysis, data mining, and machine learning, in order to extract insightful information from large data and spur corporate innovation. Big Data Management has also been used extensively in India's supply chain management. The importance of big data on "Supply chain management" is highlighted by Raman et al. (2018). Big Data Management enables businesses in India to gather, store, and analyse data from diverse supply chain sources, including production, logistics, and demand data, to increase supply chain visibility and foster more collaboration. Organisations can use big data management to incorporate automated decision-making, real-time monitoring, and predictive analytics to increase the efficiency of their supply chains and lower costs.

Objectives of the study:

The measure the contemporary applications of big data management information system

Research Methodology:

It is an empirical type of study. 230 respondents were contacted in this study to give their viewpoints on the contemporary applications of big data management information system. Frequency distribution and pie charts are used for the data analysis and therefore the data was presented.

Data Analysis and Interpretation:

Table 1 Used to measure risk and make investment decisions.

Particulars	Agree	Disagree	Can't Say	Total
Respondents	189	28	13	230
% age	82.0	12.0	6.0	100

Table 1 presents that with the statement **used to measure risk and make investment decisions**, it is found that 82.0% of the respondents agree with this statement.

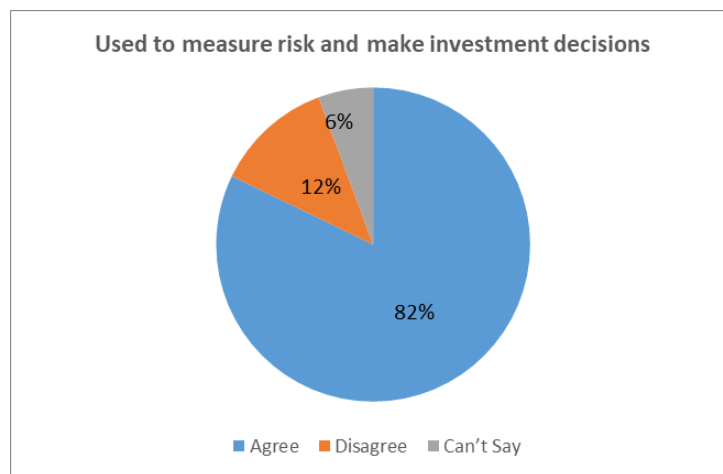


Figure 1 Used to measure risk and make investment decisions

Table 2 Finance use to analyze market data, consumer behavior and investment trends

Particulars	Agree	Disagree	Can't Say	Total
Respondents	196	24	10	230
% age	85.0	10.0	4.0	100

Table 2 presents that with the statement **finance use to analyze market data, consumer behavior and investment trends**, it is found that 85.0% of the respondents agree with this statement.

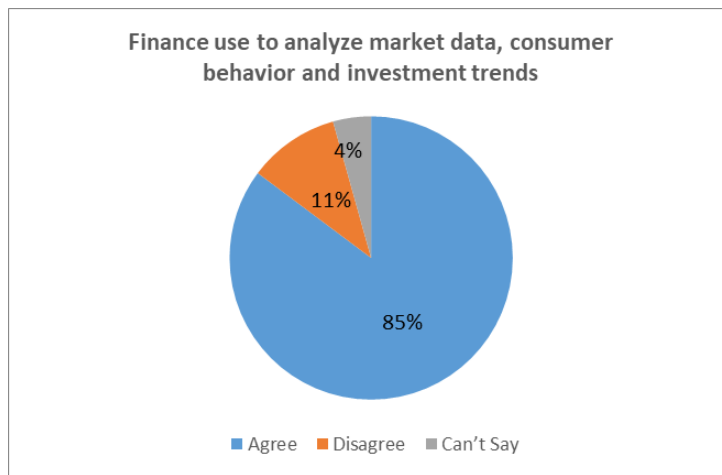


Figure 2 Finance use to analyze market data, consumer behavior and investment trends

Table 3 E-commerce use to examine client information, purchasing patterns and preferences

Particulars	Agree	Disagree	Can't Say	Total
Respondents	183	32	15	230
% age	80.0	14.0	6.0	100

Table 3 presents that with the statement **e-commerce use to examine client information, purchasing patterns and preferences**, it is found that 80.0% of the respondents agree with this statement.

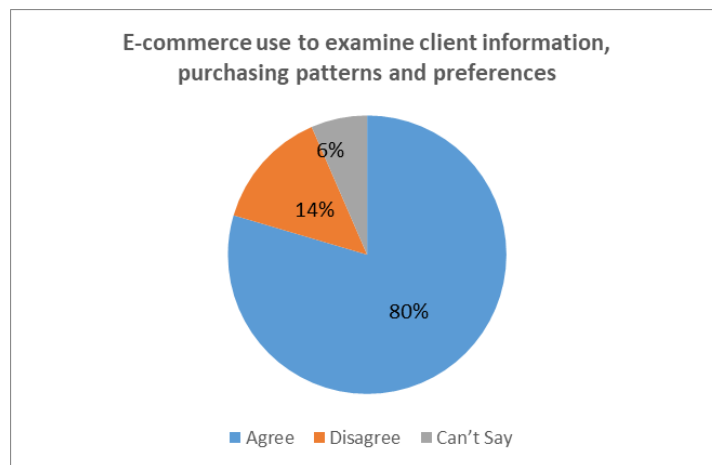


Figure 3 E-commerce use to examine client information, purchasing patterns and preferences

Table 4 Logistics use to increase effectiveness and optimize supply chain operations

Particulars	Agree	Disagree	Can't Say	Total
Respondents	201	17	12	230
% age	87.0	8.0	5.0	100

Table 4 presents that with the statement **logistics use to increase effectiveness and optimize supply chain operations**, it is found that 87.0% of the respondents agree with this statement.

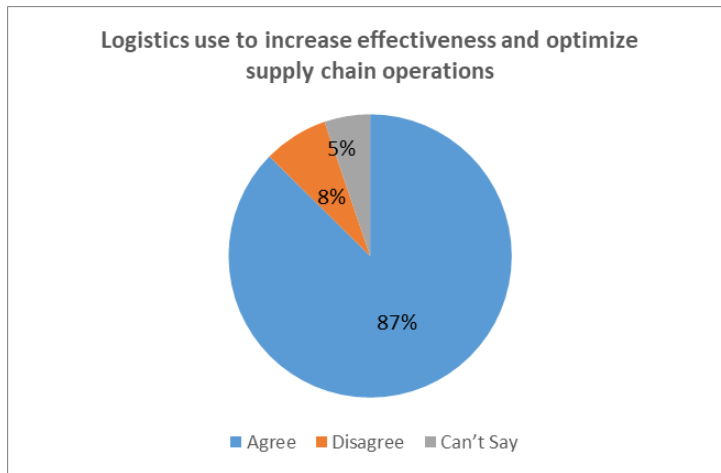


Figure 4 Logistics use to increase effectiveness and optimize supply chain operations

Table 5 Marketing use to segment customers, analyze sentiment and improve campaigns

Particulars	Agree	Disagree	Can't Say	Total
Respondents	179	40	11	230
% age	78.0	17.0	5.0	100

Table 5 presents that with the statement **marketing use to segment customers, analyze sentiment and improve campaigns**, it is found that 78.0% of the respondents agree with this statement. Considering all the responses of the statements, it was found that to a good percentage, the respondents have agreed that big data management has many great applications.

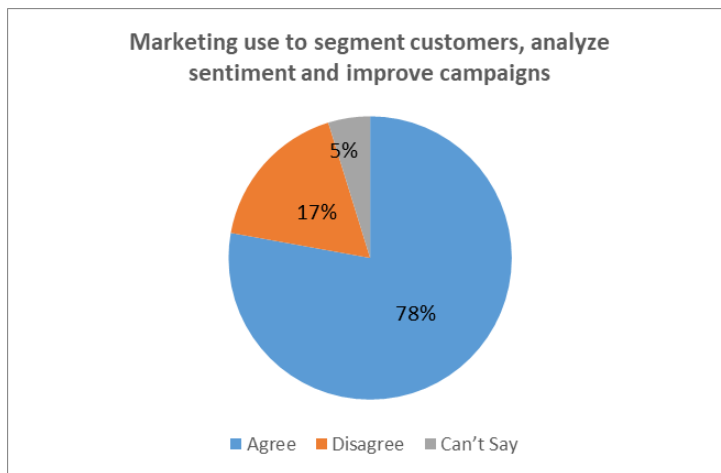


Figure 5 Marketing use to segment customers, analyze sentiment and improve campaigns

Conclusion

In India's modern applications across a variety of industries, big data management information systems (BDMIS) have emerged as a crucial component. BDMIS are utilized extensively in a variety of industries, including business, healthcare, government, agriculture, transportation, energy, and education. For supply chain optimization, fraud detection, sentiment analysis, and predictive analytics in the corporate world, BDMIS is used. This enables Indian firms to gather, store, and analyze huge amounts of data from many sources, enabling them to make wise decisions, spot new business possibilities, and boost their competitiveness. Patient data management, illness surveillance, medication research, and personalized medicine all employ BDMIS in the healthcare

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sector. It allows Indian healthcare practitioners to use big data to enhance patient outcomes, enhance treatment strategies, and promote clinical research. Delivery of public services, e-governance, and smart city initiatives are all areas where BDMIS are used in the government sector. In order to improve urban planning, resource allocation, and citizen services, it also helps Indian governments to gather and analyze data from multiple sources. Applications in the Indian agriculture, transportation, energy, and educational sectors Personalized learning, student performance analytics, and learning management systems are supported by BDMIS in the field of education, supporting data-driven educational practices' conclusion, BDMIS is essential to modern big data management systems in India, enabling businesses to fully utilize the potential of big data for innovation, decision-making, and better results in a variety of industries.

References

1. Ardito, L., Scuotto, V., Del Giudice, M., & Petruzzelli, A. M. (2019). A bibliometric analysis of research on Big Data analytics for business and management. *Management Decision*, 57(8), 1993-2009.
2. Das, N., Das, L., Rautaray, S. S., & Pandey, M. (2018). Big data analytics for medical applications. *International Journal of Modern Education and Computer Science*, 12(2), 35.
3. Gamage, P. (2016). Big Data: are accounting educators ready?. *Journal of Accounting and Management Information Systems*, 15(3), 588-604.
4. Grover, P., & Kar, A. K. (2017). Big data analytics: A review on theoretical contributions and tools used in literature. *Global Journal of Flexible Systems Management*, 18, 203-229.
5. Hashem, I. A. T., Yaqoob, I., Anuar, N. B., Mokhtar, S., Gani, A., & Khan, S. U. (2015). The rise of "big data" on cloud computing: Review and open research issues. *Information systems*, 47, 98-115.
6. Kitchens, B., Dobolyi, D., Li, J., & Abbasi, A. (2018). Advanced customer analytics: Strategic value through integration of relationship-oriented big data. *Journal of Management Information Systems*, 35(2), 540-574.
7. Laudon, K. C., & Laudon, J. P. (2015). *Management information system*. Pearson Education India.
8. Raman, S., Patwa, N., Niranjana, I., Ranjan, U., Moorthy, K., & Mehta, A. (2018). Impact of big data on supply chain management. *International Journal of Logistics Research and Applications*, 21(6), 579-596.
9. Sollins, K. R. (2019). IoT big data security and privacy versus innovation. *IEEE Internet of Things Journal*, 6(2), 1628-1635.
10. Tiwari, S., Wee, H. M., & Daryanto, Y. (2018). Big data analytics in supply chain management between 2010 and 2016: Insights to industries. *Computers & Industrial Engineering*, 115, 319-330.
11. Verma, S., Bhattacharyya, S. S., & Kumar, S. (2018). An extension of the technology acceptance model in the big data analytics system implementation environment. *Information Processing & Management*, 54(5), 791-806.
12. Zannat, K. E., & Choudhury, C. F. (2019). Emerging big data sources for public transport planning: A systematic review on current state of art and future research directions. *Journal of the Indian Institute of Science*, 99(4), 601-619.