International Journal of Green Management and Business Studies
Vol. 3, No. 2. Dec. 2023
Available online at www.scipubhouse.com

The Transformative Power of Big Data: Leveraging Insights for Economic Growth, Environmental Preservation, and Societal Well-being

https://www.doi.org/10.56830/IJGMBS12202303

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Abstract:

Due to the digitization revolution triggered by high-efficiency and low-price devices, the volume of data available worldwide has increased. Specialists have noted the flood of data called big data. Researchers and statisticians have begun to develop ways to use the big data obtained to improve human life, in the sense of considering its use. Indeed, the impact of big data has reached various areas. The data available from the databases have been analyzed and turned into information to obtain new concepts and ideas that benefit individuals and institutions in improving the economies of societies, achieving competitiveness, preserving the environment and health, protecting society and meeting needs, improving living standards, etc. As a result of the improvement in the use of big commercial and financial data, and the near future, and the improvement of commercial and financial policies to answer the study's dilemma, documentary, and literary sources were used as tools for gathering information to analyze the subject.

Keywords: Big data, sustainable development, trade decision-making, improved performance.

Introduction:

In recent years, the use of big data during decision-making has become more important, as analytics help companies better (Günther, Mehrizi, Huysman, & Feldberg, 2017) understand their customers, competitors, and market tendencies. These data can be used to make smart choices that enhance productivity and expand businesses. Big data analytics may help the store to know what is sold and what is not sold. That is why data have become a major asset in the mechanics of a knowledge (Grover, Chiang, Liang, & Zhang, 2018); (Alkatheeri, Ameen, Isaac, Nusari, Duraisamy, & Khalifa, 2020); (McAfee, Brynjolfsson, Davenport, Patil, & Barton, 2012) based society. Big data, if properly managed, will make an influential contribution to economic and social development. This has led governments to recognize the importance of big data, creating communities of practitioners, and working groups to think about the exploitation of big data, and to study its potential effects. The Millennium Development Goals have continued to focus on the "Sustainable Development Agenda", then "The Agenda" The phenomenon of big data has been welcomed

by industry analysts, business strategists (Wang, Xu, Fujita, & Liu, 2016) and marketing professionals to generate new developments and ideas that drive innovation, and advance progress by raising levels, competitiveness and productivity (Jaiswal, 2018) advantages. This can only be possible if large data strategies of enterprises are well used to mine valuable data that provides forecasting and decision-making opportunities, and monitor progress towards the Sustainable Development Goals to significantly improve trade policies and improve government (Al-Sai & Abualigah, 2017) performance.

Study problem:

In the face of rapid changes and global openness, the huge amount of data being produced, stored, and made available from multiple sites has become a major source of strength for the automaton of society. If properly managed, it would make an influential contribution to social and economic development. Therefore, there is growing recognition that the success of sustainable development depends on the ability of Governments, corporations and civil society organizations to harness data in decision-making by building innovative data systems that rely on up-to-date data sources for important business decisions. Moreover, the awareness of the importance of big data has led developed countries to succeed in accelerating progress. From this perspective, the problem of study can be raised in the following question, which is useful in clarifying its content.

- What are the areas of big data use?
- How can business decisions improve performance?
- Does big data have a role in decision-making?
- How do big data monitor progress, drive development, and keep up with the times?

Importance and objectives of the study:

The importance of big data in promoting business processes and government policies, but it lacks adequate investment in this potential, and its use in processing and analyzing big data to adequately inform development policies. This study thus comes to illustrate that the time has come for countries, companies and institutions to take interest in the data revolution to be an effective tool for achieving sustainable development. The importance of the study therefore lies in the important role that big data plays in supporting sustainable development in business decisions and improving government performance. It is hoped that this study will help open up new avenues for researchers in the fields of management and information sciences, and in the economic, social and cultural areas where the study can provide information about big data, and aims to demonstrate that the data is a powerful source that

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will radically contribute to development and decision-making.

Methodology:

The analytical and descriptive approach was used to describe and explain the phenomenon in question and its dimensions. Documentary and literary sources were used as a tool for gathering information with a view to analyzing and addressing the subject. This study also relied on the deductive approach which is based on the collection of data, the subject of statistical processing, and the extraction of results, with the aim of concluding a precise and integrated scientific description of the phenomenon or problem. The approach of the study includes defining both the framework of the study community and sample.

Literature Review:

Previous studies give the researcher an idea of the difficulties encountered by previous researchers and the ways in which they have overcome these difficulties, and they make it easier for the researcher to search for references, sources, reports and papers, avoid selecting topics that have been consumed before and thus help him address a new topic, one study Popovič, A., Hackney, R., Tassabehji, R., & Castelli, M. pointed to the influence of big data analytics on the performance of high-value business, while a study (Niu, Ying, Yang, Bao, & Sivaparthipan, 2021) highlighted the importance of business intelligence, organizational decision-making and management using big-data analytics, and artificial intelligence technologies, and the use of the study and the artificial intelligence. The private research paper (Patrucco, Marzi, & Trabucchi, 2023), which discussed the role of absorptive capacity and big data analysis in strategic procurement decisions and recommended the need for a corporate purchasing division structure system to facilitate the use of BDA for strategic decision-making in PSM. Companies that excel in BDA in PSM are better equipped to take advantage of new and existing sources of knowledge, improving their performance. However, only companies with the right resources can benefit from BDA fully to make high-level strategic decisions, while discussing the Mucheng & Sepm, 20, Seagen, M, Seagen, M, 220, study (Muchenje & Seppänen, 2023). To improve understanding of how big data is used in large enterprises, (Cadden, Weerawardena, Cao, Duan, & McIvor, 2023) focused on the role of big data and marketing analyzes in SME innovation to achieve competitive advantage in integrating knowledge with big data for big business management and business and how to leverage it The age of digitalization has led to exploding studies looking at the benefits of big data analytics (BDA) as a means of enhancing competitive advantage in enterprises as a means of leveraging this development to maximize the value of big decisions (Agag, et al., 2024). The study recommended that the analysis of big data should be used to understand customer behavior and desires, in order to improve major business processes in the organization, resulting in improved and

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improved financial and managerial performance of large companies.

Big Data:

Big data is defined solely as raw material and raw facts of no value in their initial form, uncorrelated objectivity about events and thus, describe part of what has happened and do not provide judgments, explanations, or rules of action and therefore do not tell what to do (Davies, 2016). Many agree that data are linguistic, mathematical, or symbolic concepts devoid of apparent meaning, agreed to represent people and events, as well as observations of physical phenomena or transactions, a vast quantity of complex data that attain high levels of distribution, and data sources that are large, fast, highly varied, and far beyond the capacity of software and hardware, and mechanisms, and are often available, in terms, in terms of processing, in terms of traditional forms, and distribution, and processing, A set of observations, if more deeply understood, better used in the decision-making process and unpolished facts appearing in various forms which may be regular numbers, letters, words or symmetrical signals, and may be video, sound, audio, recording, images, percentages, geometric shapes, or symbols and usually stored using various data media including paper, optical, magnetic or instrumental, which can only be manipulated after being processed by electronic rule management tools, electronic circuit tapes, data, or traditional data processing applications, and thus need to be processed from multiple official and unofficial (Correia & Água, 2021) sources. Thus, they need to be processed and processed by means of internal and external collection, oral or written, sorting, sorting, concise, concise or interpretation, or interpretation, which can help to interpret or interpret information, which is meaningful and useful to the State decision (Hussain & Mallin, 2002) -making and problem-solving to be called the concept of information.

Big data types and sources:

- **Structured data**: data organized into tables or databases for processing
- **Unstructured data**: The largest proportion of data, generated daily by people, is from text writings, video images, messages and Internet clicks
- **Semi-structured data**: It is a type of structured data, but data is not designed in tables or databases.

Such data are generated from a governmental and non-governmental program and may originate from an internal source, such as data produced from different departments, sections, divisions and personnel involved in various activities, such as invoices, purchase orders, checks received or issued, sales figures recorded as reports, or recorded observations and discussions, and may arise from an external source through clients, suppliers, various organizations, the

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market, the supply and demand mechanism, consumer and purchasing reactions, bulletins and periodicals. The sources of the big data can be identified by the following sources. The information is generated from sources outside the Department of Management, Department of Management, Division, Division of Information, and Division Department of Management Information Division

- Commercial sources related to transactions arising from transactions between two entities, such as credit cards for online transactions by means of mobile devices (MOPs).
- Sources of networks of sensors such as satellite imagery, geospatial imagery, remote sensing and Earth observation, crop census methodology, road sensors, and climate such as tourism, events, transportation and population (Zwain, 2023) density statistics. The United Nations Institute for Training and Research (UNU-INRA) is not the only source of such sensors as the World Tourism Satellite Satellite Imagery, Geospatial Imagery, Remote Sensing and Earth Observation.
- Sources of data tracking devices from mobile phones, and GPS.
- Behavioral data sources such as search count and page views online.
- Sources of opinion data such as social media posts on Twitter, Facebook, web pages, consumer confidence indicators and public opinion indicators.

Table (1) Stability and Self-Reliability Factor for the Role of Big Data Analysis in Business Decision-Making and Performance Improvement Using the Facunbach Coefficient

the role of big data analysis in business decision-making and performance improvement	Alpha Cronbach modulus	Virtual Authentication Factor
Big Data Analysis Management Capabilities	.881	.938
Technological capability for big data analysis	.850	.921
Analytical skills capabilities for big data	.859	.926
Structural changes	.873	.934
Improve function	.885	.950
Support and decision-making	.904	.920
Digitally implement business strategy	.885	.940
Total study variables	973	.986

Table 1 shows that the Wackenbach coefficient for the aggregate dimensions of

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big data analysis and decision support for large enterprises (.986), the highest value (.950) was functional improvement, while the lowest value (.920) was decision support, and these ratios are acceptable for purposes and therefore the study tool can be said to have relative stability.
Furthermore, table 2 shows the overall assessment of the role of big data analysis in trade decision-making and performance improvement

Table 2 Overall assessment of the role of big data analysis in trade decision-making and performance improvement

the role of big data analysis in business decision-making and performance improvement	arithmetic mean	standard deviation	Variance rate %	Rating
Big Data Analysis Management Capabilities	3.87	1.009	0.261	Five
Technological capability for big data analysis	3.72	.974	0.262	6
Analytical skills capabilities for big data	3.83	.974	0.254	7
Structural changes	3.81	11	0.262	11
Improve function	3.96	1.003	0.253	2
Support and decision-making	3.91	.948	0.243	3
Digitally implement business strategy	3.89	.798	0.205	4

- The structural changes ranked first in the importance of big data analysis and included major shifts in the management hierarchy, team organization, responsibilities attributed to different departments, chain of command, post structure and administrative procedures, although these changes were the result of internal or external factors and usually affected how the organization was managed.
- Functional optimization came in second and is helpful in setting the right expectations. Setting development indicators and goals. Effective communication. Planning and prioritization, avoiding multitasking in managing and analyzing big data in large organizations.
- Decision-making and support ranked third in the relative importance of leveraging big data analysis to support important business decision-making.
- Digitization strategies and mechanisms came fourth because of their important role in governance, with many companies reviewing their progress once a year, only to realize that success comes from systematic

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observation with the aim of thinking about development, and the key to the smooth implementation and implementation of the digital strategy is automation (BPM) of tasks.

- The recent interest in big data has prompted many companies to develop data analytics capacity to improve the operational performance of the enterprise, and the Big Data Analysis Capabilities (BDAC) are instrumental in providing more accurate and relevant information, making the enterprise more capable of discovering many new opportunities, and the valuable source of information for improving the marketing processes and activities it plays for the development and innovation of new products and services.
- The technological capability to analyze big data ranked last as the recent interest in big data prompted many companies to develop data analytics capacity to improve the operational performance of the business.

Role of Big Data in decision-making and business and institutional strategy

Companies now have access to a large number of data because of advances in computing power. When this information is assessed correctly, it may help companies make better choices and formulate more useful plans. Big data and analytics can help, and I will discuss the role of big data in corporate strategy and decision-making, the many analytics available to you, and the steps you can take to implement your big data plan.

Big Data in Corporate Decision-Making

In recent years, using big data while making choices has become more important that analytics help companies better understand their customers, competitors, and market tendencies (Acker, Blockus, & Pötscher, 2013). This data can be used to make smart choices that boost productivity and expand a company, big data analytics may help the store know what is being sold and what is not sold, as well as why. The store may use this data to choose which items to carry, how much fees to charge, and how to promote it to consumers (Brennan, Subramaniam, & Van Staden, 2019).

Role of Big Data in business strategy and management.

Business planning is another area where big data plays a crucial role. Companies may recognize new possibilities and risks by studying data on consumer behavior, market trends and competition performance Competitive and growth-stimulating strategies can be developed using this data, for example, the company may use big data to find unmet consumer needs so it can provide new (Fotaki, Voudouris, Lioukas, & Zyglidopoulos, 2021) goods and services. Information can also be extracted to gain insights about consumer behavior and create more specific advertising campaigns.

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Big Data applications in business intelligence:

Business intelligence is another area in which big data can be used extensively. The term "business intelligence" is used to describe the practice of analyzing and interpreting data to improve a company's operations and results (Gillium, 2016). Companies may strengthen their operations by examining data about sales, consumer habits and financial (Ng, Lo, & Choy, 2015) outcomes, big data analytics may help a company know, for example, which of their advertising channels is most successful in attracting customers. In addition, they may analyze the data to determine which are the most profitable and which are not the most profitable elements, such as the Chen study of Taiwanese (Chen, Elder, & Hsieh, 2007) companies.

Ways to develop Big Data in businesses:

- There are many critical stages in creating the big data strategy. The first stage in developing a corporate plan is setting organization goals. Boosting revenue or cutting expenses or making customers happier are all possibilities (Russom, 2013).
- The next step is to select the appropriate analyzes to derive meaning from the data. Analytic methods range from "descriptive" to "predictive" to "directive".
- The final step is to develop a data management and governance strategy. Data quality, data security and data privacy standards must be set.

Best practices for Big Data management and governance in companies.

Best practices for data management and governance (Malik, 2013) are critical to the success of any big data plan:

- Develop data quality standards
- Privacy and data security
- Conduct staff training
- Create multidisciplinary groups
- Always check and evaluate the plan

Big Data Future in Decision-Making and Business Strategy:

The outlook for big data is bright, companies will have access to more data and more sophisticated tools and procedures to interpret this data as technology advances, so companies will be able to make more educated judgments (Jayaraman, 2018) and formulate more useful plans.

Role of big data analytics in decision-making and performance improvement

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The sheer volume of data being produced, stored and made available from multiple locations has become a major source of strength for any knowledge-based society. Such big data, if properly managed, would make an influential contribution to sustainable economic, social and social development. Big data help people learn the demands of using it and not using it to make appropriate decisions, enable them to identify and strengthen unimportant data by analyzing such data provided to them (Keeso, 2014), and also develop their capabilities to make it meaningful. It also allows for the reduction of effort and time spent by workers at all stages of the decision-making process by using the tools and devices available to them, from data collection to analysis, as well as better information generated from the analysis process to the people who are making, perhaps creating new results for traditional institutions At the institutional level, it has been overshadowed by big data (Spratt, 2015). Big data analysis and decision-making are centrally linked to leadership that makes the best managerial and managerial decisions that drive the various problems. Big data is a historic opportunity to advance common capacities to support human (Raghupathi & Raghupathi, 2014) societies, and to protect them with an understanding of the information they increasingly produce in digital formats. Governments help track progress and ensure that the decisions they make are based on evidence of involvement of international agencies, civil society organizations and the private sector. In the absence of data and information, it is difficult to make sound decisions at the lowest possible (Rasheed, Ahmad, Tanweer, Murtaza, Rasheed, & Ahmed, 2021) cost, even as part of the definition of big data suggests that it is characterized as the evolution of decision-making. Studies have shown that good data analysis leads to a sound, informed and rapid decision-making decision (Maaroof, 2015) by decision-makers.

Results and Conclusion:

- The big-data revolution is changing society. Government institutions are facing many challenges to improve their performance in order to survive, and to achieve the Sustainable Development Goals. Institutions must build on the big-data revolution, using it by developing public-private partnership mechanisms that transfer knowledge.
- At present companies cannot do without big data and analytics if they want to make good choices and create successful strategies, companies may realize the full potential of big data for development and success by recognizing many types of analytics available, creating a big data strategy, and implementing best practices for data management and governance.
- The exchange of big data is part of a national data system and strategy for development. It is the most important strategy on which developed countries currently rely in order to accelerate progress. Big data can be a

major factor for production, perhaps more important than land, labor and capital, to push for higher levels of quality and efficiency.

- Big data provides the power to decide, and provides added value.

Recommendations:

- Encourage interest in the use of big data by decision makers.
- Identify the potential of data, and demonstrate how they impact the SDGs, the huge returns of large businesses, and how much change they bring.
- Develop a strategy for promoting big data, serving the public interest, and identifying the entities and institutions responsible for collecting, analyzing, and processing data that apply uniform international data-processing standards.
- promote and strengthen international cooperation, leverage the expertise of data processing specialists and develop public-private partnership mechanisms that facilitate knowledge transfer, the sharing of new data from R&D, and innovation in the production of official statistics.

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