ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

The Impact of Big Data to the Growth and Development of Entrepreneurship in Nigeria

Obomeghie Adamu Muhammed

Auchi Polytechnic, Auchi, Edo state, Nigeria

DOI: https://doi.org/10.51584/IJRIAS.2025.100500069

Received: 23 January 2025; Accepted: 28 January 2025; Published: 13 June 2025

ABSTRACT

This study explores the impact of Big Data to the growth and development of entrepreneurship in Nigeria. The purpose of the study is to determine how entrepreneurs in emerging economies like Nigeria can benefit from the use of Big Data analytics in its quest for sustainable economic growth and development, and to identify challenges, as well as, to proffer solutions to such challenges. An explorative approach is adopted in this study because much of the knowledge about Big Data is still at its early stages. Empirical information was collected from journal articles, conference proceedings and government publications. The study concluded that Bid Data analytics has a significant positive impact on the growth performance of entrepreneurs. Equally, the study found that Big Data analytics adaption and usage leads to entrepreneurial opportunity recognition and opportunity exploitation. Finally, it is recommended that entrepreneurs should evolve, adopt and use Big Data in their enterprises in order to achieve rapid growth and sustained development in their businesses which will in-turn result into sustainable economic development in Nigeria.

INTRODUCTION

Big Data technology has become a hot subject matter in recent years. Businesses in every industry collect, store, and process ever-increasing amounts of data. With the widespread availability of data tools spanning across both macroeconomic and behavioral dimensions and the vital role of information as a critical factor of production, a continuous flow of innovative business ideas will persistently emerge and undergo rigorous testing. Haleem, et, al. (2020) state that "Big Data is an innovative technology which can digitally store a large amount of data, and also helps to computationally analyze the data to reveal patterns, trends, associations, and differences. The outcome of this ongoing cycle will herald a colossal wave of novel enterprises, the profound impact is that it has the potential to completely reshape not only the production reality, but also the very fabric of various activities and industries within the marketplace.

Researchers, Business leaders, policy makers and government agents have observed that the world is currently data-driven. Kobayashi, et, al. (2018) stated that organizations must use Big Data so that they can remain competitive at all times. Hence, having the highest quality information is a condition that may allow the birth of entrepreneurs and the growth of activity or in profits. More than ever, one should think about these points in the context of the availability of tools and databases that allow the development of Big Data and the absence of a theoretical model on relations between entrepreneurship, information, and productivity.

There are many different definitions of Big Data, but interestingly enough, most definitions refer to it in terms of volume, variety, and velocity, with the so-called three "Vs". As barriers to entry continue to diminish, entrepreneurs from all corners of the globe can now access the resources and information necessary to transform their innovative ideas into successful ventures. (Seseni & Mbohwa, 2021).

According to Entrepreneurship and Big Data report (2019), the term "entrepreneurship" was first used in the middleages to mean "someone who performs tasks in projects like buildings, construction, and the likes by using all the resources he had". However, the word entrepreneur gained its present form in the 17th century, as Cantillon described it "as a person responsible for undertaking a business venture" (Thorton, 2019). The

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

increasingly interconnected nature of the global economy, enabled by advancements in technology and communication infrastructure, further fuels the expansion of this entrepreneurial phenomenon.

The expansion of the entrepreneurial phenomenon is a global force that shows no signs of slowing down. Enabled by advancements in technology, driven by a desire for innovation, and fueled by a diverse range of individuals, entrepreneurship has the power to reshape industries, drive economic growth, and address societal challenges. As the world continues to evolve, so too will the entrepreneurial landscape, paving the way for a future defined by creativity, resilience, and endless possibilities. (Kashyap, 2019). With that context comes a need to help entrepreneurs understand what big data is, how it is relevant to their business, and what kinds of technology they may want to consider in their support.

Another revolutionary breakthrough is Artificial Intelligence (AI) which, according to Prüfer & Prüfer (2020), "is a concept, in which machines mimic cognitive functions of learning and problem solving". Unlike the industrial revolution, when the main drivers were coal and steam, the present "second machine age" is driven by data and artificial intelligence (Obschonka & Audretsch, 2019; Di Vaio et al., 2020).

In today's digital era, the presence of sophisticated tools and expansive databases has revolutionized the way entrepreneurs gather, analyze, and utilize Big Data to drive their ventures forward. However, despite these vast resources, there remains a significant gap in our understanding of the complex interplay between entrepreneurship, information acquisition, and productivity. It is imperative that researchers, policymakers, and business leaders collaborate to establish a theoretical framework that elucidates the multifaceted relationships between these pivotal factors. By doing so, we can foster an environment conducive to entrepreneurial success, economic growth, and societal progress.

In the global arena, Big Data market revenues for software and services are projected to increase from $42 billion in 2018 to $103 billion in 2027, attaining a Compound Annual Growth Rate (CAGR) of 10.48% (Columbus, 2018). Equally, the New Vantage Venture Partners noted that, Big Data delivers the most value to enterprises by decreasing expenses (49.2%) and creating new avenues for innovation and disruption. Whereas the human brain can manage two to three dimensions of information, algorithms allow for hundreds of dimensions. Thus, data science could extract meaningful information from the association, classification, and data clusters (Prüfer & Prüfer, 2020). It is noted that an average of more than 40,000 searches on Google every second, i.e. 3.5 billion searches per day, 2.5 quintillion bytes of data were created each day in 2018. This pace is only increasing by leaps and bounds with the development of the Internet of Things. (Marr, 2018).

Although a new research endeavour, Big Data adaptation and usage has been identified by Nigerian entrepreneurs as the new prosperity path. However, not much has been obtained from its enormous potential and benefits despite efforts made in that regards. On the above premise a study of this nature is profound.

The purpose of this study is to examine how entrepreneurship in emerging markets can benefit from the use of Big Data and to identify challenges that they encounter while using Big Data tools and technologies. Specifically, an attempt is made to design a theoretical framework that will help to foster an environment that is conducive for entrepreneur success through the use of Big Data.

The objectives of this study are summarized below;

To determine the impact of Big Data on entrepreneurship growth performance in Nigeria.

To identify the benefits, limitations and challenges confronting entrepreneurs in Big Data usage

To proffer solutions on effective ways of harnessing the benefits of Big Data by entrepreneurs.

RELATED LITERATURE

The literatures reviewed in this study cuts across the concept of Big Data in entrepreneurship growth and development, the role of entrepreneurs in utilizing Big Data, the challenges and suggested solutions on the use of Big Data by entrepreneurs in Nigeria.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

Concept of Big Data in relations to entrepreneurship growth and development

According to Ahmadi, et al. (2016), there is no universal definition for the term Big Data. However, the different definitions that are available, the three key words that surface are: volume (high volume – number of data), velocity (high velocity – the speed of data), and variety (variety – different data generated). This means that Big Data can be summed up as numerical information that is generated in high volume, at a very fast speed and that varies. Therefore Big Data refers to extremely large and complex data-sets that traditional data processing tools and methods cannot handle efficiently, these data-sets can include structured data (like databases), unstructured data (such as social media posts or videos), and semi-structured data (like XML files). The term encompasses not just the volume of data but also the variety, velocity, veracity, and value of the data

The equation that represents big data is simple to remember: Big Data equals data as raw material, plus multi-structured data, plus new and innovative technology. i.e.

$$\boldsymbol{BD = RD + MSD + NIT}$$

$$\boldsymbol{\pi = \emptyset + \beta + \delta}$$

In its inception, Big Data was considered a problem by some organizations and entrepreneurs however; it became a boon for entrepreneurs with the advent of new technologies. One could find its reach in every corner of the business arena in one way or another, directly or indirectly. Whether it is text messages, pictures, videos, blogs, reports, multimedia content, digital traces, swipes on different sites, reading preferences on mobile, time spent on each page, omitted portions, likes on social media, or anything related produced (Big Data) and this data is under the scanner of data analysts to generate useful information out of it. (Batistic, & Van der Laken, 2019).

Recent advancements in digitalization and the Internet of Things (IoT) have fueled the exponential growth of data in various industries. The availability of Big Data has become paramount for companies, pushing them to explore and comprehend its immense potential. It has been observed that entrepreneurs that effectively harness the power of Big Data not only out-shine their competitors but also experience a multitude of advantages. These advantages range from increased profitability and enhanced operational efficiency to improved customer satisfaction, amplified retail value, refined decision-making processes, heightened productivity, accelerated revenue growth, and optimized asset utilization.(Da Bormida, 2021).

Some of the benefits delivered by Big Data to entrepreneurs is that, it enables the entrepreneurs to make better data-driven decisions, thereby revolutionizing their operations and strategies to stay ahead in the competitive market. However, questions about privacy regarding Big Data and the Big Data operating model leave some people concerned about whether Big Data is everything it is thought to be. Entrepreneurs should be absolutely clear regarding the critical questions they need to address, the extensive benefits it delivers, and the state of their readiness to confront the ever-growing Big Data wave. (Da Bormida, 2021). Entrepreneurs should also be crystal clear about the robust and well-defined methodology to use for their Big Data projects, ensuring maximum efficiency, accuracy, and success in leveraging the power of Big Data to drive growth and innovation. With the exponential growth of data, Big Data has become an indispensable asset for organizations aiming to remain at the forefront of their respective industries. As technology continues to advance, Big Data will continue to evolve, presenting new opportunities and challenges for organizations worldwide.

The Role of Entrepreneurs in Utilizing Big Data

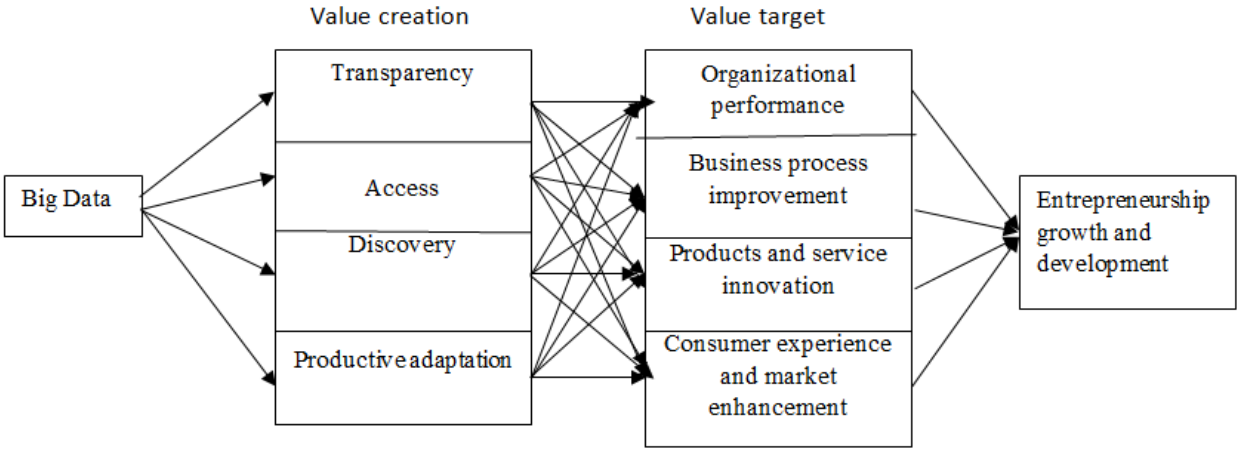
Entrepreneurs being the pioneers of innovation, play a pivotal role in unlocking the true value of this data resource. Armed with their unique ability to uncover hidden patterns and untapped potential, entrepreneurs possess an uncanny knack for transforming raw data into unprecedented business opportunities. Through their unwavering commitment, entrepreneurs tirelessly evaluate the viability of new business ideas, consistently spotting remarkable prospects within the vast expanse of data. While large companies have made substantial investments in data analysis, it is the entrepreneurial spirit that enables individuals to perceive invaluable insights and seize upon them, even in the face of fierce competition.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

Entrepreneurs increasingly want to know as much as possible about potential business opportunities for an informed decision. This goes from knowing almost everything about the people making suggestions as new employees to knowing everything about the people making purchase decisions. To that effect, various databases are bought from which the information can be monitored. (Guo, et, al. 2016). However, the possibilities of using data do not stop here. The data can also be seen as opportunities for new business ideas, which typically is the role of the entrepreneur, i.e., people that actively seek opportunities for new business ideas.

Data is rarely viewed as an opportunity in itself on a firm level. A data-based marketplace came into existence, which enabled new entrepreneurial business possibilities independent of all these databases. In short, big data-based entrepreneurs involve seeing databases as opportunities in them, i.e., something more than cheap information. Typically, acquisition of data in, for example, the stock market is time-critical, thus implying a strong emphasis on the time dimension of the risks in acting on opportunity information. Big data-based opportunities can enable new business possibilities that no one else can see. From an operational point of view, such opportunities can enable new business possibilities that can only be seen by someone persistent exploring by chance.

Theoretical approach to the impact of Big Data to entrepreneurship growth



Source; Adapted from Guangming et al. (2021)

Imperatives of Big Data for entrepreneurs in developing countries

1. ***Enhanced Decision-Making.*** In today's rapidly evolving business landscape, making informed decisions is crucial for entrepreneurial success. Big Data offers a plethora of benefits in terms of enhanced decision-making. By leveraging advanced analytics and data visualization tools, entrepreneurs can gain valuable insights from large and diverse data-sets. These insights enable them to identify patterns, trends, and correlations that might have gone unnoticed otherwise. Armed with this information, entrepreneurs can make data-driven decisions that are more accurate, timely, and aligned with their business goals. Whether it's optimizing operational processes, identifying potential customer segments, or exploring new market opportunities, big data plays a pivotal role in empowering entrepreneurs to make informed and strategic decisions.

2. ***Improved Customer Understanding***. Understanding customers is at the heart of any successful business. Big Data provides entrepreneurs with a treasure trove of information about their customers' preferences, behaviors, and needs. By analyzing vast amounts of customer data, such as purchase history, browsing patterns, social media interactions, and demographic information, entrepreneurs can gain deep insights into their target audience. These insights enable entrepreneurs to personalize their marketing strategies, tailor their products or services to meet specific customer demands, and offer a seamless customer experience. Additionally, By leveraging Big Data, entrepreneurs can build stronger customer relationships, enhance customer satisfaction, and ultimately drive business growth.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

3. ***Efficient Operations and Resource Management***. Efficiency is a critical factor in ensuring the long-term success of any business. Big Data offers entrepreneurs valuable tools to optimize their operations and resource management. By analyzing operational data, entrepreneurs can identify bottlenecks, streamline processes, and improve overall efficiency. For example, in industries like manufacturing or logistics, Big Data analytics can optimize supply chain management, reduce inventory costs, and minimize delivery times. Furthermore, predictive analytics can help entrepreneurs anticipate maintenance needs, avoid costly downtime, and ensure the seamless functioning of machinery and equipment. By harnessing the power of Big Data, entrepreneurs can enhance operational efficiency, reduce costs, and maximize their resource utilization, thereby gaining a competitive edge in the market.

4***. Competitive Advantage through Data-Driven Innovation.*** Innovation is key to staying ahead in today's competitive business landscape. Big Data opens up new avenues for entrepreneurial innovation by providing a wealth of insights and opportunities. By leveraging advanced analytics, entrepreneurs can uncover hidden patterns, emerging trends, and untapped market segments. This knowledge allows them to identify gaps in the market and develop innovative products, services, or business models to cater to evolving customer demands. Furthermore, Big Data enables entrepreneurs to test and validate their ideas through rapid prototyping and iterative feedback loops. By embracing data-driven innovation, entrepreneurs can differentiate themselves from competitors, capture new market spaces, and drive disruptive growth.

Challenges and limitations of Big Data usage by entrepreneurs and suggested solutions

Big data must be handled carefully, with an awareness of the different sources of its complexity and the limitations it entails which includes; the price and quality of Big Data, revenue and value extraction, social norms and the need to address economic, social, and ethical concerns, as well as the formulation of suitable policies to encourage innovation and adoption of Big Data. Big Data works cooperatively with data mining to handle large data-sets by allowing new types of data to be explored

According to Seseni & Mbohwa (2021), in today’s digital economy, data is considered the "new oil," and entrepreneurs are keen to tap into this resource. However, the challenges of working with Big Data can be significant. For most entrepreneurs, overcoming these obstacles is crucial for effective decision-making and competitiveness. Below are some of the key challenges that entrepreneurs face when dealing with Big Data and some suggested solutions.

1. ***Data Volume and Storage***. One of the biggest challenges entrepreneurs face is managing the volume of data. They often have limited infrastructure or resources, which make storing and maintaining data difficult. The amount of data being generated from social media, customer interactions, website traffic, and IoT devices can be overwhelming, requiring expensive storage solutions and robust management systems. A major solution to problem of this nature is Cloud storage options like AWS, Google Cloud, or Microsoft Azure which offer scalable solutions; however, they come at a cost.

2. ***Data Complexity and Integration***. Big Data is not just large in size, it is complex hence, entrepreneurs often have to deal with various data formats (structured, unstructured, semi-structured), making integration challenging. Data from different sources, such as customer databases, market analytics, and internal operations, can complicate analysis. A likely solution in this regards is that data integration platforms and middleware can help combine different datasets, but they often require specialized knowledge to implement effectively.

3. ***Data Quality and Accuracy***. Another major hurdle is ensuring data quality. This is because poor data (whether it is incomplete, out-dated, or incorrect) can lead to faulty analytics and misguided business decisions. For entrepreneurs, maintaining data accuracy is critical but resource-intensive. The way out of such problems is that, entrepreneurs need to invest in data cleaning and validation processes, possibly using automation tools to reduce errors.

4***. Lack of Expertise***. Big Data analytics requires a unique skill-set, including proficiency in data science, machine learning, and analytics software. Entrepreneurs may not have access to this expertise, which makes it

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

difficult to extract valuable insights from the data. As a way out, entrepreneurs should consider hiring data scientists or outsourcing to third-party analytics providers.

5. ***Privacy and Regulatory Compliance.*** Handling Big Data also comes with legal and ethical responsibilities. Entrepreneurs must navigate complex data privacy regulations like the Nigeria Data Protection Acts (DPA). Failing to comply can result to severe penalties. The answer to regulation issues is that, entrepreneurs need to be vigilant in setting up systems that ensure compliance with data protection regulations. This often requires legal consultation and investment in secure data-handling practices.

6. Real-Time Processing and Decision Making. For entrepreneurs, especially in competitive markets, real-time data processing is essential for quick decision-making. However, traditional data processing methods often cannot handle real-time data analysis efficiently, leaving some entrepreneurs at a disadvantage. As a way out, real-time analytics platforms like Apache Kafka or Spark Streaming can help.

7. High Costs of Implementation. Big Data requires investment in software, hardware, and skilled personnel. For entrepreneurs, who often work with limited budgets, these costs can be prohibitive. In this regards, it is advisable that entrepreneurs may have to find a balance between the potential value that Big Data offer and the financial resources available. Open-source tools and gradual scaling may offer a more cost-effective approach.

8. Turning Data into Actionable Insights. Collecting and analyzing data is just the first step. The real challenge is turning that data into actionable insights that can drive entrepreneurship growth. Many entrepreneurs struggle with deriving meaningful insights from large data-sets, leading to analysis problem. A cardinal solution is the use of business intelligence tools (like Power BI or Tableau) which can help in visualizing data and making it more digestible.

In summary, understanding which data points are relevant and actionable requires strategic thinking and domain expertise. The diagram below sums up the challenges of using Big Data by entrepreneurs.

Fig. 1; Challenges of Big Data usage by entrepreneurs

Source; Author's design.

METHODOLOGY

An exploratory approach is adopted for this study. An exploratory study is applicable when much is not known about the topic at-hand, this type of study can take the form of a qualitative approach, where a desk review is conducted. (Sekaran and Bougie, 2014). Exploratory research usually depends on secondary data such as literature, informal discussions, interviews, case studies, focus groups, and projective methods, with qualitative data taking the form of government publications, journal articles, conference proceedings, internet articles, and other sources of such data.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

Data collection

In this study, data were obtained from journal articles, conference proceedings, and government publications. The author studied journal and conference publications for the latest peer-reviewed work regarding the topic at hand. The author limited the search to articles not older than five years. Only articles that were published from 2020 to the present data were accepted for the purpose of data collection. The plan was to identify current solutions for a current problem. Emerald, Ebscohost, and Elsevier databases were used to find quality articles.

Table 1. Factors (variables) that were investigated, the author(s) and year of publication of the studies consulted and the titles of the publications that reported the studies.

S/N	Variables	The Authors	Books/Journal Title
1.	Big Data and Entrepreneurship innovation	Shahid, & Sheikh (2021)	Impact of Bid Dada on innovation, competitive an advantage Productivity and decision making. Literature review.
2.	Bid Data and Entrepreneurship Productivity	Shahid, & Sheikh (2021)	Impact of Bid Dada on innovation, competitive an advantage Productivity and decision making. Literature review.
3.	Bid Data and entrepreneurship efficiency	Doaa et al (2023)	The impact of B. D analytics on investment efficiency and financial performances: Evidence from Saudi Stocks market.
4.	Big Data and entrepreneurship financial performance	Doaa et al (2023)	The impact of B. D analytics on investment efficiency and financial performances: Evidence from Saudi Stocks market.
5.	Big Data and entrepreneurship decision making	Shahid, & Sheikh (2021) Shesadri et al 2023	Impact of Bid Dada on innovation, competitive an advantage Productivity and decision making. Literature review. Assessing the impact of big data analytics on decision making process, forecasting and performance of film. Technological forecasting and social change 196(122824)
6.	Big Data and entrepreneurship Dynamic pricing	Guizzardi et al 2021 Steinberg (2020)	Big Data from dynamic pricing: A Smart approach to tourism demand forecasting 37(3) 1049-1060 Big Data and Personalized Pricing
7.	Big Data and entrepreneurship Management	Taung & Xie (2024)	Big Data on inventory Management: Procedure of the 9th Int'l conference on engineering management & the 2nd forum on modern logistics and supply chain management (1-ICEM – MLSCM) pp 141-148 Atlantic press
8.	Big Data and Security	Koo, et at (2020)	Security and Privacy in B.D life cycle. A survey and open challenge. Sustainability 12.10571 DOI:16.3390/Sui122410571
9.	Big Data and entrepreneurship growth	Nupur & Ankur (2022)	Ecosystem for Entrepreneurship in a Big Data-Driven Universe.

Source; Authors compilation

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

DISCUSSIONS

Some successful entrepreneurship ventures that have effectively utilized Big Data

1. **Uber: Revolutionizing Transportation with Data**

This transportation outfit was founded in 2009 and it has disrupted the traditional taxi industry by leveraging Big Data and mobile technology. It connects drivers and passengers through its mobile app, using real-time data for dynamic pricing, route optimization, and service efficiency. Nigeria entrepreneurs have also evolve similar taxi apps such as Bolt, InRide, Pickmeup etc

Advantages of using Big Data by Uber

- *Dynamic Pricing (Surge Pricing):* Uber uses real-time demand and supply data to adjust ride prices dynamically. This helps to manage demand during peak hours and ensures that riders have access to drivers.

- *Route Optimization*: Uber collects data on traffic patterns, rider and driver locations, and weather conditions to suggest optimal routes for drivers, reducing both travel time and fuel costs.

- *Customer Insights*: Uber leverages customer data to analyze preferences, improve user experience, and suggest new services such as UberPool and UberEats, based on demand patterns.

Outcome. Uber's ability to collect and analyze vast amounts of data allowed it to scale rapidly, disrupting the taxi industry globally and growing into a multi-billion-dollar company.

2. **Netflix: Personalizing Entertainment with Big Data**

This entertainment outfits originally a DVD rental service, transformed into a leading streaming service by using Big Data to deliver personalized content recommendations to its users.

Advantages of using Big Data by Netflix

- *Personalized Recommendations:* Netflix's recommendation engine collects and analyzes user data, including viewing history, ratings, and search queries. This data helps create personalized suggestions, increasing viewer engagement and retention.

- *Content Creation:* Big data also informs Netflix's original content decisions. By analyzing user behavior and preferences, Netflix decides which types of shows and movies to invest in. For example, data insights played a significant role in the creation of hits like *House of Cards*.

- *User Experience Optimization:* Data helps Netflix optimize user interfaces, reduce buffer time, and provide a seamless experience across devices.

Outcome. Netflix's ability to harness Big Data for recommendations and content decisions has driven its exponential growth, with over 277.68 million subscribers globally as of 2024.

3. **Zara: Optimizing Fashion Retail with Data**

Zara which is a global fashion retailer has successfully integrated Big Data into its supply chain, allowing it to stay ahead of fashion trends and meet customer demand swiftly. Similar fashion house in Nigeria is H&M, Fashionova etc.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

Advantages of using Big Data by Zara

- *Inventory Management:* Zara uses real-time sales data to optimize inventory management. It tracks what customers are buying in each store, adjusting stock and production accordingly to prevent over-stocking or under-stocking.

- *Trend Prediction*: Data from online and in-store transactions, social media, and customer feedback help Zara identify emerging fashion trends. This data-driven approach enables Zara to design, produce, and ship new collections in as little as '15' days.

- *Pricing and Promotions*: Zara uses Big Data to analyze market trends and customer behavior, allowing it to optimize pricing strategies and offer targeted promotions that drive sales.

Outcome. with data-driven decision-making, Zara has become a leader in the fashion industry, allowing it to respond to market trends faster than its competitors and maintain profitability.

The above case studies highlight how entrepreneurs across different industries have utilized Big Data to innovate, optimize operations, and scale their businesses. Each company leveraged data to understand their customers better, enhance operational efficiency, and drive business growth

Future trends and opportunities in Big Data for entrepreneurs to explore

Great opportunities abound in the area of Big Data especially for developing countries such as Nigeria. According to McRae, et, al. (2024), such future trend and opportunities includes;

1. ***Edge Computing and Real-Time Analytics.*** This new trend means that as IoT devices and smart applications proliferate, there is a growing need for data to be processed closer to where it's generated (e.g., sensors, autonomous vehicles). This reduces latency and bandwidth issues. The identified opportunity for entrepreneurs is that they can develop platforms and services that specialize in edge data processing and real-time analytics for industries like healthcare, logistics, and smart cities.

2. ***AI-Driven Data Automation.*** As data-sets grow in volume and complexity, entrepreneurs need AI tools that can automate data collection, cleaning and analysis. Opportunities abound in this area because, entrepreneurs need to build AI-based solutions that can automatically prepare, analyze, and generate actionable insights from Big Data which can help them to reduce costs and improve decision-making. This is particularly promising in fields like retail, finance, and marketing.

3. ***Data Privacy and Governance Solutions.*** With increasing regulatory scrutiny on data usage companies face challenges in managing data ethically and complying with laws. As a way out, entrepreneurs can offer tools for data governance, privacy compliance, and secure data sharing, making it easier for them to navigate complex regulatory landscapes while ensuring customer trust.

4. ***Industry-Specific Data Solutions.*** The new trend here is that, different industries (such as healthcare, agriculture, energy, and education) have unique Big Data needs. There is growing demand for niche solutions that cater to these specific sectors. While the opportunity that presents itself is the development of vertical-specific analytics platforms that integrate domain knowledge with advanced analytics tools which can help industries to unlock the full potential of their data, e.g , predictive maintenance for manufacturing or personalized learning platforms for education.

5. ***Block-chain for Data Integrity.*** It is noted that entrepreneurs are increasingly relying on vast amounts of data for decision-making hence, ensuring data integrity and transparency is crucial. Block-chain can help create immutable records of data transactions. Opportunities in this area is that **s**tart-ups can explore combining block-chain with Big Data to provide solutions that ensure secure, tamper-proof data management for sensitive industries like finance, healthcare, and supply chain management.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

6. ***Data as a Service (DaaS).*** This is a new area where companies are increasingly seeking to out-source their data storage, management, and processing needs to third-party providers. A new outlook in this arena is that entrepreneurs can build platforms offering DaaS solutions, where businesses can access real-time, quality data streams without needing to manage their own infrastructure. This could apply to sectors like real estate, financial markets, or public utilities.

7. ***Augmented Analytics and Data Democratization.*** Entrepreneurs are looking to empower non-technical employees to work with Big Data without requiring extensive data science skills. Augmented analytics leverages AI to help users understand data and generate insights through intuitive tools. There is the opportunity of creating platforms that offer easy-to-use data visualization, self-service BI, or AI-driven reporting tools can enable smaller entrepreneurs and non-experts to harness the power of Big Data.

8. ***Predictive and Prescriptive Analytics.*** The new trend in this aspect is beyond analyzing past data. entrepreneurs want to predict future trends and optimize decision-making through prescriptive analytics. Entrepreneurs has a big opportunity in this area as they can create advanced analytics platforms that not only forecast outcomes but also suggest the best course of action based on historical data. This is particularly valuable in areas like supply chain management, finance, and customer relationship management.

9. ***Big Data for Sustainability.*** This is a very interesting trend in Big Data because **s**ustainability is becoming a key focus for businesses worldwide. Big Data is playing a crucial role in monitoring environmental impact, optimizing resource use, and tracking carbon footprints. Again, opportunities abound for entrepreneurs to develop solutions that help organizations track sustainability metrics, improve energy efficiency, and reduce waste, leveraging Big Data for environmental and social impact.

10. ***Synthetic Data Generation.*** As data privacy becomes a concern, companies are exploring the use of synthetic data (artificially generated data-sets) that mimic real data for use in model training and testing. This has created opportunities where entrepreneurs can create platforms that generate high-quality synthetic data for AI and machine learning applications, enabling them to develop solutions without exposing real, sensitive data**.**

By staying ahead of these trends and capitalizing on emerging technologies, entrepreneurs can find numerous opportunities in the evolving Big Data landscape

CONCLUSIONS

With data collections in terabytes, petabytes, exabytes, and beyond, computer systems cannot process pieces fast enough, and data cannot be efficiently stored and accessed. In many cases, exponentially more data is being created than the best storage technologies available can handle. The lack of standardization, the sheer number of different data formats available, and the unpredictability of incoming formats make programming against these data streams difficult and brittle. (Khan, 2020).

Big Data has a significant positive impact on entrepreneurship growth performance in Nigeria. This is because it provides them with valuable insights about customer interactions, as wel las, market trends and competitor's solution.

The study also concluded that, Big Data analytics adaption and usage leads to entrepreneurial opportunity recognition and opportunity exploitation. This is because, it helps to provide insights into customer behavior, market trends and operational inefficiencies.

While Big Data offers significant opportunities for entrepreneurs, there is the need to carefully navigate its limitations such as, high costs, the need for specialized skills, compliance challenges, and data quality issues. Entrepreneurs must weigh these challenges against the potential benefits and adopt a strategic, incremental approach to leveraging big data, ensuring that it aligns with their specific business goals and resources.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue V May 2025

RECOMMENDATIONS

Since Big Data has a positive impact on entrepreneur growth and development therefore, entrepreneurs need to adopt and use Big Data so that they may take advantage of Big Data capabilities, compatibilities which will lead to their business increase competitiveness, growth and development.

Universities and Business Schools should leverage on Big Data to effectively analyze the most sought-after entrepreneurial characteristics to shape their curriculum, ensuring the education of entrepreneurs is effective. This is particularly crucial for educational institutions that are slow to adapt their teaching content, as proficiency in Big Data might soon become a necessity, potentially posing a threat to these institutions**.**

Nigeria government should; increase its investment in building data warehouses and lakes, invest in high-performance computing (HPC), increase the use of cloud computing, as well as, building high speed networks.

Academicians should boost their adoption of Big Data mindset, increase Big Data technology and policies sharing, integrate Big Data with traditional data, aligning Big Data with business goal sets.

REFERENCES

1. Ahmadi, M., Dileepan, P., & Wheatley, K. K., (2016). A SWOT analysis of big data, Journal of Education for Business, vol. 91, no. 5, pp. 289-294.
2. Batistic, S & der Laken, P. (2019). History, Evolution and Future of Big Data and Analytics: A Bibliometric Analysis of Its Relationship to Performance in Organizations. British Journal of Management. (30), 229–251 (2019)
3. Columbus, L. (2018). Ten Charts That Will Change Your Perspective Of Big Data's Growth, Forbes, 23 May 2018, https://www.forbes.com/sites/louiscolumbus/2018/05/23/10.
4. Da Bormida, M. (2021). The Big Data World: Benefits, Threats and Ethical Challenges Ethical Issues in Covert, Security and Surveillance Research 8. 71-91. ISBN: 978-1-80262-414-4,
5. Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283–314.
6. Doaa, A. S. B., Magdy, M. A.M. & Maged, M.A.A. (2023) The impact of B. D analytics on investment efficiency and financial performances: Evidence from Saudi Stocks market. Information Science Letter 12 (6) 2461-2473.
7. Entrepreneurship and Big Data. (2019). Source Title: Big Data Analytics for Entrepreneurial Success, doi: 10.4018/978-1-5225-7609-9.ch007.
8. Guangming, C., Na, T. & Blankson, C. (2021) Big Data, marketing analytics and firm marketing capabilities. Journal of computer information systems. Doi: 10.1080/08874417.2020.1842270.
9. Guizzardi, A Flavio MP, Giovanni A & Evcolino, R. (2021) Big Data from dynamic pricing: A Smart approach to tourism demand forecasting. International Journal of forecasting. 37(3) 1049-1060.
10. Guo, H., Liu, Z., Jiang, H., Wang, C., Liu, J., & Liang, D. (2016). Big Earth Data: a new challenge and opportunity for Digital Earth's development. International Journal of Digital Earth, 10(1), 1–12.
11. Haleem, A., Javaid, M., Khan, H. I., & Vaishya, R., (2020). Significant applications of big data in COVID-19 pandemic, Indian Journal of Orthopaedics. 54 (4).
12. Khan, M. L. (2020). Big Data and Entrepreneurship. In book: Handbook of Media Management and Business. Vol. 2, 391-406. Publisher: Rowman & Littlefield.
13. Kashyap R. (2019). Big data analytics challenges and solutions. In Dey., Das, H., Naik, B. and Behera, H.S., Eds., Big data analytics for intelligent healthcare managenement , Elsevier 19-41
14. Kobayashi, V. B., Moi, T.S., Den-Hartog, N D., Kismihok, G. & Berkers, A. H., (2018). Text mining in organizational research, Organizational Research Methods. 21 (3). 733-765.
15. Koo, J., Kang, G. & Kim, Y. (2020). Security and Privacy in Big Data Life Cycle: A Survey and Open Challenges. Sustainability. 12(24):10571
16. Marr, B. (2018). How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read. https://www.forbes.com/sites/bernardmarr/2018/05/21.

17. McRae, R.M., Aykens, P., Lowmaster, K. & Shepp, J. (2024). 9 Trends That Will Shape Work in 2024 and Beyond. Business management. Harvard Business Review.
18. Nupur, K, & Ankur, K. (2022). Ecosystem for Entrepreneurship in a Big Data-Driven Universe. In Entrepreneurship and Big Data; the digital revolution. Edited by Meghna Chhabra Rohail Hassan Amjad Shamim. CRC press. Tailor and Francis Group. London.
19. Obschonka, M., & Audretsch, D. B. (2019). Artificial Intelligence and Big Data in Entrepreneurship: A New Era Has Begun. Small Business Economics. doi: 10.1007/ s11187-019-00202-4.
20. Prüfer, J., & Prüfer, P. (2020). Data science for entrepreneurship research: studying demand dynamics for entrepreneurial skills in the Netherlands. Small Bus. Econ. 55, 651–672.
21. Sekaran, U. & Bougie, R. (2014) Research Methods for Business: A Skill-Building Approach. 6th Edition, John Wiley & Sons, Haddington.
22. Seseni, L & Mbohwa, C. (2021). The significance of Big Bata in the success of SMEs in emerging markets; a case of South Africa. Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management. Singapore, March 7-11.
23. Shalid, N. U & Sheikh N.J (2021) Impact of Bid Dada on innovation, competitive an advantage Productivity and decision making. Literature review. (Open Journal of Business & Management 9(02) 586-617.
24. Sheshadri, C, Ranjain, C. Shvam G, Uthayasankar, S. & Surajirt B. (2020) Assessing the impact of big data analytics on decision making process, forecasting and performance of film. Technological forecasting and social change 196(122824).
25. Steinberg E (2020) Big Data and Personalized Pricing "Business Ethics Quarterly" Cambridge University Press 30 (1) 97-117
26. Tang, G. & Xie, Y. (2024) Big Data and Inventory Management in CWK Chen (eds). Proceedings of the 9th international conference on engineering management and the 2nd forum of modern logistics and supply chain management (ICEN – MLSEM).
27. Thorton, M. (2019). Why did Cantilion change the meaning of entrepreneurship. MISES Interdisciplinary Journal of Philosophy, Law and Economics. 7 (3) 545-558.