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BIG DATA'S ROLE IN THE TRANSFORMATION OF ECONOMIC SECTORS

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Introduction. Big Data has emerged as a transformative force in the digital economy, revolutionizing industries across the globe. Its ability to process vast amounts of data has enabled companies to enhance forecasting, improve decision-making, and optimize business operations. From finance and healthcare to e-commerce and telecommunications, organizations increasingly rely on Big Data to drive innovation, refine customer experiences, and stay competitive. In Armenia, while Big Data adoption may not be as widespread as in more developed countries, the country is home to a growing number of companies that leverage data analytics to fuel business success. This article explores the role of Big Data in various sectors, including finance, recruitment, e-commerce, and telecommunications, with a particular focus on the innovative contributions of Armenian companies. By examining how organizations in Armenia and beyond utilize Big Data, we can gain a deeper understanding of its impact on business strategies, efficiency, and long-term growth in the digital era.

The relevance of the topic. Examining the role of Big Data in the digital economy is important as it helps businesses and policymakers understand how data-driven insights can enhance decision-making, efficiency, and competitiveness. As Big Data adoption continues to grow globally, understanding its applications in various sectors, including finance, e-commerce, and telecommunications, is essential for businesses to stay ahead.

The main purpose of this article is to explore the role of Big Data in the digital economy, examining its applications across various industries such as finance, e-commerce, and telecommunications. It aims to highlight the significance of Big Data in improving decision-making, operational efficiency, and competitiveness. The article also seeks to emphasize the importance of Big Data adoption in Armenia, where its usage is still growing, and to provide insights into how businesses can leverage data-driven strategies for economic development and success in the digital age.

The following research tasks were set to achieve the purpose:

- ✓ To analyze the current state of Big Data adoption across various industries globally, with a focus on finance, e-commerce, and recruiting.
- ✓ To explore the specific applications and benefits of Big Data for businesses in enhancing decision-making, operational efficiency, and customer satisfaction.
- ✓ To investigate the current level of Big Data adoption in Armenia.

Literature review.The role of Big Data in the digital economy has been widely explored in academic and industry research. Studies highlight its impact on business intelligence, decision-making, and economic growth, emphasizing how data-driven strategies enhance efficiency and innovation across various sectors.

The term Big Data refers to information that cannot be processed with traditional tools or methods[1]. Cole defines big data as a volume of data that exceeds the capacity of

[1] Salvador, A. and Ikeda, A. (2014) Big Data Usage in the Marketing Information System. *Journal of Data Analysis and Information Processing*, **2**, 77-85. doi: 10.4236/jdaip.2014.23010.

existing hardware and software to process it within a reasonable time[2]. Big Data is set to change everything from government and international development to basic scientific research, with businesses increasingly recognizing its power[3].

Big Data is rapidly shaping the global economy through the establishment of organizations, conferences, and academic journals focused on advancing the field. Governments are increasingly promoting open data initiatives, with countries like the U.S., Japan, and China leading efforts to make public data accessible for innovation and improved governance. As of 2012, the U.S. led the global Big Data market, but by 2020, emerging markets, particularly China, are expected to dominate, driven by their large populations and high rates of internet and mobile phone usage[4].

Back in 2015, Hassani claimed that big data would continue to expand in the coming years, and organizations that fail to adapt, develop the necessary skills, and embrace its challenges may struggle to keep up[5]. Big data analytics can drive business transformation and improve decision-making by utilizing advanced analytical techniques to uncover hidden insights and valuable knowledge from large and complex data sets[6]. Some authors highlight the growing attention on the ethical concerns surrounding Big Data, including issues of privacy and misuse of information[7].

Armenian authors also highly value the role of Big Data in various fields. Thus, a group of Armenian scientists has been working on developing an Armenian Data Cube, a Swiss-Armenian project that helps store and analyze satellite data for environmental monitoring in Armenia, It is the fourth national data cube in the world and is already being used for tasks like tracking changes in Lake Sevan[8]. Some Armenian scientists believe that the development of big data methods and technologies in Armenia will play a crucial role in addressing modern challenges in geology, geography, environmental protection, and related sciences[9].

Methodology. In the scope of this research descriptive, comparative, scientific-historical-logical methods were used and implemented.

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Analysis. Big Data plays a crucial role in the digital economy by enhancing forecasting and decision-making across various industries. By analyzing vast amounts of structured and unstructured data, businesses can identify patterns, optimize operations, and improve customer experiences. In industries like finance, healthcare, and e-commerce, big data helps companies make faster and smarter decisions. With the support of AI and machine learning, organizations can process data more effectively, leading to better automation and predictions. As digital technologies continue to grow, big data remains a key factor in helping businesses stay competitive in today's data-driven world. Big data is emerging as a critical business asset that companies across all sectors should adopt to remain relevant and competitive[10].

Big Data's impact extends across multiple industries, driving efficiency, innovation, and smarter decision-making.

In the energy sector, Big Data enhances the forecasting of electricity and gas demand, allowing for efficient resource management and improved sustainability. Environmental science uses large-scale data models to predict weather patterns, track climate change, and enhance disaster preparedness. In healthcare, Big Data supports genetic research, speeds up drug discovery, and enables predictive analytics for disease prevention and personalized medicine. Over the past few years, the media and entertainment industry has increasingly relied on big data to analyze user preferences, optimize content recommendations, and enhance audience engagement.

In population studies, AI processes census data to predict demographic changes, urbanization trends, and social behavior, supporting better planning for housing, education, and healthcare.

As digital technologies advance, the role of Big Data will continue to grow, driving smarter business strategies, improving efficiency across industries, and transforming economic landscapes worldwide.

Big Data has a profound impact on the economic sector, transforming the way businesses, governments, and financial institutions operate. Macroeconomic forecasting has become more accurate as economists use advanced models to analyze large datasets, predicting GDP growth, inflation, employment trends, and consumer behavior with greater precision. This helps policymakers design better fiscal and monetary policies, improving economic stability and growth. Central banks leverage Big Data to monitor financial markets in real-time, adjust interest rates, and implement data-driven monetary policies to control inflation and economic fluctuations.

In the business sector, companies use Big Data to optimize supply chain management, predict demand, and enhance decision-making. Leading companies are increasingly using big data to outperform their competitors, as both established players and new entrants adopt data-driven strategies to innovate, compete, and create value. Retailers analyze vast amounts of consumer data to adjust pricing strategies, personalize marketing campaigns, and improve customer experiences, leading to higher profitability. E-commerce platforms, like Amazon, use AI-driven data analytics to anticipate market trends and suggest products tailored to individual users, boosting sales and efficiency.

[10]Barham, Husam. (2017). Achieving Competitive Advantage Through Big Data: A Literature Review. July 2017, Conference: 2017 Portland International Conference on Management of Engineering and Technology (PICMET) Oregon, USA OI:10.23919/PICMET.2017.8125459

Financial institutions use Big Data and AI algorithms for risk assessment, fraud detection, and real-time market analysis, helping banks and investment firms evaluate credit risks and detect suspicious transactions.

Additionally, labor market dynamics are influenced by Big Data, as job platforms like LinkedIn and Indeed analyze employment trends, skill demands, and workforce shifts. Governments use these insights to develop policies that address job creation, automation, and workforce reskilling.

Overall, Big Data supports economic innovation, efficiency, and competitiveness, enabling businesses and policymakers to make informed, data-driven decisions that drive growth and economic stability in the digital age.

Big Data is largely used by banks, credit organizations, and other financial institutions as it allows to evaluation of credit risks, improves decision-making, and offers personalized services. Analysis of large volumes of customer data helps in better-assessing credit risks, detecting fraud, and offering personalized financial products. By examining transaction histories and behavioral data, institutions can identify patterns and predict customer needs, enabling them to offer tailored services and improve customer satisfaction. It also helps to make more informed investment decisions and mitigate financial losses. Furthermore, by using machine learning and predictive analytics, financial institutions can identify potential fraud patterns faster and with more accuracy.

Kelley and Tetlock found that by analyzing data from millions of retail investors' trades, the total amount of buying by these investors predicts positive returns for stocks over the next month, with no reversal of returns. They also discovered that aggressive buying reflects new information about a company's cash flow[11].

Big data plays a crucial role in distinctive aspects of the banking sector, including competitiveness, profitability, deceptive practices, implementation of fintech, and, also, product improvement[12].

Citigroup, one of the leading global financial service providers, operating across more than 160 countries and managing over 200 million customer accounts, uses Big Data to enhance various aspects of its operations, including customer acquisition and retention, fraud detection, and operational efficiency. By analyzing vast amounts of customer data and transactional records, Citi leverages machine learning algorithms for targeted marketing, predictive modeling to spot anomalies, and real-time insights to improve decision-making. Additionally, it has built an integrated Big Data platform, the Virtual Enterprise Data Lake, to store and process data efficiently, driving down costs and ensuring faster, actionable insights across the organization[13]. HSBC uses big data, advanced analytics, and automated monitoring to assess its financial crime risk by analyzing not only customer transactions but also their counterparties and company ownership information[14].

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[13] Marr B., Big Data In Banking: 2016.How Citibank Delivers Real Business Benefits With Its Data-First Approach, Forbes,

[14] Hsbc.com https://www.hsbc.com/news-and-views/views/hsbc-views/harnessing-the-power-of-ai-to-fight-financial-

Goldman Sachs, a global investment banking, securities, and investment management company, invested 15 million USD in big data analytics[15] to enable the identification of profitable investment opportunities. They analyze historical market data, trends, and other external factors to build predictive models that guide investment strategies.

Armenian financial companies also utilize Big Data. Commercial banks employ data analysts who play a crucial role in optimizing decision-making, improving operational efficiency, and enhancing business strategies. Based on research into data analysts' responsibilities in Armenian financial companies, it is evident that they leverage Big Data by developing databases and data collection systems, primarily using SQL, to ensure relevant information is gathered for analysis.

Through statistical techniques and advanced analytics, financial institutions identify trends and patterns in complex data sets, providing valuable management insights. Data mining and predictive analytics are utilized to enhance strategic planning and drive continuous improvements in efficiency and performance. Additionally, Big Data is leveraged to refine marketing techniques, optimize operations, and develop data-driven business solutions. Companies collaborate with stakeholders to prioritize information needs and improve reporting mechanisms. Some fintech companies in Armenia also integrate AI and Big Data analytics to develop innovative financial products and improve customer service.

In the Armenian financial sector professionals working with Big Data, primarily data scientists and data analysts, operate in various departments, including Risk Management, Anti-Money Laundering & Fraud Detection, Financial Planning & Strategy, Credit Scoring & Loan Analytics, and others. Their work enhances financial services, strengthens risk management, ensures regulatory compliance, and supports business forecasting and planning through predictive models.

Big Data is used in nearly all fields, and employment recruiting companies are no exception. In recruitment, Big Data helps streamline the hiring process by analyzing vast amounts of candidate information, identifying the best matches for job roles, and predicting hiring trends. AI-powered platforms use data-driven insights to assess resumes, track candidate behavior, and optimize job postings for maximum visibility. Additionally, predictive analytics can forecast employee retention rates and help companies make more informed hiring decisions. By leveraging Big Data, recruiters can reduce hiring biases, shorten the recruitment cycle, and improve overall workforce planning.

Analysis conducted by Indonesian researchers reveals that Big Data significantly enhances various aspects of HR management, improving recruiting efficiency (20.00%), employee selection accuracy (24.00%), and HR-based organizational performance (24.00%), while playing the biggest role in employee development (31.00%) by tailoring training programs to individual needs[16].

Numerous HR companies as well as the world's biggest companies utilize big data in the process of employment to enhance their services. Algorithms used by Google enable

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[15] April 21, 2025.investmentbankingcouncil.org https://www.investmentbankingcouncil.org/blog/the-role-of-big-data-in-investment-banks

[16] Heliana, & Wahyuni, Herpita. (2024). Big Data analysis in human resources decision making: optimizing workforce management. jrmsi - Jurnal Riset Manajemen Sains Indonesia. 15. 58-69. 10.21009/JRMSI.015.1.06.

to predict employee behavior and suitability for specific roles, and even assess the likelihood of employees leaving the company, enabling proactive retention strategies. Another successful example of using big data in human resource management. Bank of America used People Analytics to analyze employee interactions and behaviors in response to high turnover rates in their call centers. The analysis showed that increased collaboration and communication within teams led to higher success. As a result of this the bank adjusted break schedules to foster teamwork, which improved efficiency and reduced turnover.

Young Armenian professionals are also keeping up with the times and have created a start-up HireBEE.ai which is a sophisticated AI-driven recruitment platform that optimizes and simplifies the hiring process. Using artificial intelligence, it effectively analyzes candidate profiles, aligns CVs with job and company requirements, and strategically distributes job postings across multiple channels. Currently it is a fast-growing platform with a diverse team speaking 12 languages and working with over 3,000 talent acquisition managers worldwide, which helps companies hire the best candidates locally, virtually, and globally.

Big Data has become a fundamental element of the digital economy, particularly within e-commerce, where companies utilize vast amounts of information to enhance customer experiences, streamline operations, and drive strategic decisions; by using data analytics, businesses gain crucial insights into consumer behavior, optimize supply chains, and personalize marketing efforts, ultimately increasing competitiveness and profitability through informed, data-driven strategies.

Retail giant Walmart has used Big Data to become a strong online shopping competitor. They've focused on making their supply chain faster and improving how they serve customers. A key part of this is their "Spark" platform. Spark uses data to organize freelance drivers, allowing Walmart to offer same-day delivery to almost all U.S. homes. Walmart's investment in technology and data analytics has been critical in its efforts to compete in the e-commerce space becoming a real headache even for Amazon. Thus, thanks to the use of Big Data Walmart managed to optimize its logistics, inventory management, and delivery routes, contributing to its ability to offer fast and reliable service[17].

Daily Harvest, a U.S.-based subscription meal delivery service with fewer than 300 employees, demonstrates the power of AI and Big Data for businesses of any size. By analyzing customer order history and preferences, they curate a diverse and satisfying product selection. AI-powered chatbots provide rapid customer support and even categorize customers who may need extra help, allowing for personalized assistance. Furthermore, data analysis optimizes packaging size and delivery logistics, minimizing waste and ensuring efficient order fulfillment. This data-driven approach has allowed Daily Harvest to see significant improvements in customer satisfaction[18].

While there isn’t much evidence of Armenian retailers using big data, it should be emphasized that many Armenian-based companies in various fields utilize big data to achieve better results. Thus, VivaCell-MTS, one of Armenia's largest and most prominent telecommunications companies, utilizes Big Data to enhance its services, optimize infrastructure, and improve customer experiences. By analyzing large volumes of data, the company can effectively plan and expand its telecommunications network, identifying

[17] Projectpro.io https://www.projectpro.io/article/how-big-data-analysis-helped-increase-walmarts-sales-turnover/109

[18] Businessinsider.com https://www.businessinsider.com/daily-harvest-implements-ai-to-improve-meal-delivery-customer-care-2025-2

congestion points and predicting the need for additional equipment. Big Data also aids in understanding customer behavior, enabling VivaCell-MTS to offer personalized services and targeted promotions. For instance, through data analysis, the company optimizes retail store traffic and tailors strategies for store development[19].

To benefit from cutting-edge technologies, various sectors of the Armenian economy can use Big Data and AI to expand their presence in international markets. Armenia has strong potential to grow its international footprint in fields such as wine production, cotton clothing manufacturing, information technology services, organic agriculture, and tourism. For instance, with its rich history of winemaking, and its growing wine industry can benefit from Big Data in several ways. In many countries, Big Data is transforming winemaking by improving production through precise weather forecasting, optimized irrigation, real-time crop health monitoring, effective pest and disease control, detailed soil quality analysis, and enhanced overall operational efficiency using advanced analytics and IoT technologies. While these might require high expenses, there are still some steps that can be game-changing. By analyzing global wine consumption trends, Armenian wineries can identify which types of wines are gaining popularity and adjust their production and marketing strategies accordingly. They can also monitor consumer preferences in different regions, track competitors' performance, and explore untapped export markets. Additionally, Big Data enables wineries to target specific markets, using data on wine preferences in regions like Europe, the US, or Russia to develop improved export strategies. Furthermore, Big Data can help optimize pricing by analyzing market trends, allowing wineries to set competitive prices while maximizing revenue. Undoubtedly, these resources are quite expensive and may not be affordable for individual wine producers. Here, government support and active collaboration among industry players can play a crucial role, as such investments would definitely yield returns.

Armenia's growing cotton clothing manufacturing sector also holds strong potential for expansion into international markets, especially through e-commerce platforms like Wildberries and Ozon. By leveraging Big Data, Armenian manufacturers can analyze consumer behavior on these platforms—such as most-searched products, seasonal demand patterns, and customer reviews—to design and produce clothing that aligns with current trends. This allows even small and medium-sized Armenian manufacturers to compete effectively and increase visibility in markets across Russia, Eastern Europe, and beyond.

Even though Big Data isn't yet as widely used by retailers and other industries in Armenia as it is in many developed and developing countries, the country is still home to a growing number of companies that are leading its use and developing new solutions. Cognaize, a leading player in AI and Big Data uses AI to help the financial industry make better decisions, improve efficiency, and find new revenue opportunities. Its document automation solution combines AI with human expertise, making financial processes smarter and more effective. Cognaize continuously improves workflows for better business results. Optimyzee is an AI-powered platform that helps marketers create and optimize Google Ads campaigns. It boosts ad performance by increasing clicks, lowering costs, and improving return on ad spend. Stands out with its expertise in machine learning and Big Data, providing analytics solutions that drive efficiency and innovation for companies across different. FiveBrane is a Data Science platform that helps Med-Tech AI companies build reliable medical imaging AI and precision medicine solutions faster. It enhances medical research by integrating diverse data sources and improving the accuracy of AI-driven insights.

[19]April 21, 2025Viva.am https://www.viva.am/en/annual-report/management-report/big-data

Conclusion. As the digital economy continues to evolve, Big Data will remain a cornerstone of business innovation, efficiency, and competitiveness. Whether it's in the finance sector, where it aids in credit risk assessment and fraud detection, in e-commerce, where it enhances customer experiences and streamlines operations, or in telecommunications, where it optimizes infrastructure and service delivery, Big Data is transforming how organizations operate and engage with customers. While Big Data is not yet as deeply integrated into every industry in Armenia as it is in other regions, the country is witnessing a surge in the use of data analytics by companies in diverse fields. Many Armenian companies are using AI and Big Data to tackle complex business challenges, enhance customer service, and drive strategic decision-making. With the ongoing advancement of digital technologies, the adoption of Big Data in Armenia is expected to grow, offering further opportunities for innovation, economic development, and competitiveness in both the local and global markets.

The obtained research findings may be useful for businesses, policymakers, and researchers by providing valuable insights into the applications and benefits of Big Data in driving decision-making, operational efficiency, and competitiveness. Additionally, the results may serve as a foundation for further research on the impact of Big Data across various sectors, helping to guide policies and initiatives that promote innovation and economic growth.

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ՄԵԾ ՏՎՅԱԼՆԵՐԻ ԴԵՐԸ ՏԱՐԲԵՐ ՏՆՏԵՍԱԿԱՆ ՈԼՈՐՏՆԵՐԻ ՓՈԽԱԿԵՐՊՄԱՆ ՄԵՋ

ԱՆՈՒՇ ՍԱՐԳՍՅԱՆ

Համառոտագիր

Մեծ տվյալները շարժիչ ուժ են հանդիսանում թվային տնտեսության մեջ՝ ընդգրկելով ֆինանսները, առողջապահությունը, էլեկտրոնային առևտուրն ու հեռահաղորդակցության ոլորտները։ Մեծ տվյալների կիրառման շնորհիվ Արհեստական բանականության և մեքենայական ուսուցման աջակցությամբ կազմակերպությունները կարող են բարելավել որոշումների կայացման գործընթացը, գործառնական արդյունավետությունը և հաճախորդների փորձը։ Հոդվածում ներկայացված է, թե ինչպես են Մեծ տվյալները նպաստում կանխատեսումներին, ռեսուրսների կառավարմանը, ռիսկերի գնահատմանը, խարդախությունների հայտնաբերմանը և անհատականացված ծառայությունների մատուցմանը՝ խթանելով նորարարությունն ու մրցունակությունը։ Ուշադրություն է դարձվում Մեծ Տվյալների ազդեցությանը ֆինանսական ոլորտում վարկային ռիսկի գնահատման, խարդախությունների հայտնաբերման, ներդրումային ռազմավարության մշակման մեջ, մանրածախ առևտրում՝ մատակարարման շղթայի և շուկայաբանության մեջ, ինչպես նաև

մարդկային ռեսուրսների կառավարման ոլորտում՝ հավաքագրման և աշխատուժի պլանավորման վրա: Ներկայացվում են հաջողության օրինակներ, որոնք վկայում են Մեծ տվյալների գործնական ազդեցության մասին արդյունավետության բարձրացման և մրցունակության բարելավման ուղղությամբ:

Հոդվածի հիմնական նպատակն է ուսումնասիրել Մեծ տվյալների դերը թվային տնտեսությունում՝ վերլուծելով դրանց կիրառությունը տարբեր ոլորտներում: Այն նպատակ ունի շեշտել Մեծ տվյալների նշանակությունը որոշումների կայացման, գործառնական արդյունավետության և մրցունակության բարելավման գործում:

Հոդվածի նպատակին հասնելու համար սահմանված **խնդիրներն են**՝ վերլուծել Մեծ տվյալների գլոբալ կիրառումը, ուսումնասիրել դրանց ազդեցությունը որոշումների կայացման, արդյունավետության և հաճախորդների գոհունակության վրա, գնահատել Մեծ տվյալների կիրառումը Հայաստանում:

Մեթոդաբանություն: Հետազոտության շրջանակներում կիրառվել են նկարագրական, համեմատական, գիտական-պատմական-տրամաբանական մեթոդները:

Հետազոտությունը բացահայտում է Մեծ Տվյալների վերափոխող դերը տարբեր ոլորտներում՝ հատուկ ուշադրություն դարձնելով դրա զարգացող կիրառությանը Հայաստանում: Հոդվածը ներկայացնում է յուրահատուկ տեսանկյուն՝ ընդգծելով իրական կյանքի օրինակներ ֆինանսների, էլեկտրոնային առևտրի և մարդկային ռեսուրսների ոլորտներից: Այն ներկայացնում է իրական օրինակներ ֆինանսների, էլեկտրոնային առևտրի և մարդկային ռեսուրսների ոլորտներից՝ ընդգծելով Մեծ տվյալների դեռևս չօգտագործված ներուժը մեր երկրում:

Ստացված արդյունքները արժեքավոր պատկերացում են տալիս Մեծ տվյալների դերի մասին՝ որոշումների կայացման, արդյունավետության և մրցունակության ոլորտներում՝ օգտակար լինելով ձեռնարկատերերի, քաղաքականություն մշակողների և հետազոտողների համար: Դրանք կարող են հիմք հանդիսանալ հետագա հետազոտությունների, ինչպես նաև նորարարությունն ու տնտեսական աճը խթանող քաղաքականությունների և նախաձեռնությունների համար:

Թվային տնտեսության զարգացման պայմաններում Մեծ տվյալները խթանում են նորարարությունը, արդյունավետությունը և մրցունակությունը տարբեր ոլորտներում, իսկ դրանց աճող կիրառումը ակնկալվում է, որ կնպաստի Հայաստանում ռազմավարական որոշումների կայացմանը, հաճախորդների սպասարկման բարելավմանը և տնտեսական զարգացմանը:

Բանալի բառեր. Մեծ Տվյալներ, թվային տնտեսություն, արհեստական բանականություն, բիզնես ռազմավարություն, տվյալների վերլուծություն, որոշումների ընդունում, նորարարություն, ֆինանսներ, էլեկտրոնային առևտուր

РОЛЬ БОЛЬШИХ ДАННЫХ В ТРАНСФОРМАЦИИ РАЗЛИЧНЫХ ЭКОНОМИЧЕСКИХ СЕКТОРОВ

АНУШ САРГСЯН

Аннотация:

Большие данные играют ключевую роль в цифровой экономике, охватывая такие секторы, как финансы, здравоохранение, электронная коммерция и телекоммуникации. Используя огромные объемы данных, компании могут улучшать процесс принятия решений, оптимизировать операционную деятельность и повышать качество обслуживания клиентов, при поддержке искусственного интеллекта и машинного обучения. В статье рассматривается, как большие данные способствуют прогнозированию, управлению ресурсами, оценке рисков, выявлению мошенничества и предоставлению персонализированных услуг, способствуя инновациям и повышению конкурентоспособности. Отдельно подчеркивается роль больших данных в сфере финансов — для оценки кредитных рисков, выявления мошенничества и улучшения инвестиционных стратегий; в розничной торговле — для управления цепочками поставок и маркетинга; а также в сфере управления персоналом — для найма и планирования трудовых ресурсов. Успешные примеры из отрасли демонстрируют практическое влияние больших данных на повышение эффективности и конкурентоспособности. Также в статье освещается растущее применение больших данных в Армении, где местные компании используют аналитические инструменты для совершенствования операций и стимулирования инноваций.

Основная цель этой статьи — исследовать роль больших данных в цифровой экономике, изучая их применение в различных отраслях. Она направлена на то, чтобы подчеркнуть значение больших данных в повышении качества принимаемых решений, операционной эффективности и конкурентоспособности.

Для достижения цели поставлены следующие задачи: проанализировать глобальное внедрение больших данных, изучить их влияние на принятие решений, эффективность и удовлетворенность клиентов, а также оценить уровень использования больших данных в Армении.

Методология: В рамках данного исследования использованы и применены описательные, сравнительные, научно-историко-логические методы.

Исследование подчеркивает трансформирующую роль больших данных в различных секторах, с акцентом на их развивающееся применение в Армении. В нем приводятся реальные примеры из таких сфер, как финансы, электронная коммерция и управление персоналом, при этом подчеркивается неиспользованный потенциал больших данных в стране.

Полученные результаты дают ценную информацию о роли больших данных в принятии решений, повышении эффективности и конкурентоспособности, что может быть полезным для бизнеса, политиков и исследователей. Они также служат основой для дальнейших исследований и разработки стратегий и инициатив, направленных на поддержку инноваций и экономического роста.

По мере развития цифровой экономики большие данные стимулируют инновации, эффективность и конкурентоспособность в различных секторах, а их

растущее применение в Армении, как ожидается, будет способствовать принятию стратегических решений, улучшению обслуживания клиентов и экономическому развитию.

Ключевые слова. Большие данные, цифровая экономика, искусственный интеллект, бизнес-стратегия, аналитика данных, принятие решений, инновации, финансы, электронная коммерция.

BIG DATA'S ROLE IN THE TRANSFORMATION OF ECONOMIC SECTORS

ANUSH SARGSYAN

Abstract

The advent of Big Data has profoundly impacted numerous economic sectors, including but not limited to finance, healthcare, e-commerce, and telecommunications. By leveraging vast data sets, businesses can enhance decision-making processes, optimize operational efficiency, and improve customer experience, with the support of artificial intelligence (AI) and machine learning algorithms. The article examines various applications of Big Data in the domains of forecasting, resource management, risk assessment, fraud detection, and personalized services, emphasizing its role in fostering innovation and competitiveness within industries. The article underscores the pivotal role of Big Data in various fields, including finance, where it is instrumental in assessing credit risk, detecting fraud, and enhancing investment strategies; in retail, where it facilitates supply chain management and marketing; and in human resources, where it plays a crucial role in recruitment and workforce planning. Successful industry case studies demonstrate the practical impact of Big Data on efficiency and competitiveness.

The main purpose of this article is to explore the role of Big Data in the digital economy, examining its applications across various industries. The objective is to underscore the importance of Big Data in enhancing decision-making, operational efficiency, and competitiveness. **The objectives** of this study are threefold: first, to analyze global Big Data adoption; second, to explore its impact on decision-making, efficiency, and customer satisfaction; and third, to assess Big Data adoption in Armenia.

In the scope of this research descriptive, comparative, scientific-historical-logical methods were used and implemented.

The research highlights Big Data's transformative role across sectors, focusing on its emerging applications in Armenia. It provides real-world examples from industries like finance, e-commerce, and HR while emphasizing the untapped potential of Big Data in Armenia.

The obtained results provide valuable insights into Big Data's role in decision-making, efficiency, and competitiveness, benefiting businesses, policymakers, and researchers. They also serve as a foundation for further research, guiding policies and initiatives to foster innovation and economic growth.

As the digital economy evolves, Big Data is driving innovation, efficiency, and competitiveness across sectors, and its growing adoption in Armenia is expected to boost strategic decision-making, customer service, and economic development.

Keywords: Big data, digital economy, artificial intelligence, business strategy, data analytics, decision-making, innovation, finance, e-commerce