



Research Article

The Future of E-Commerce: Innovations and Challenges

Md Kamruzzaman

Department of Business Administration, Westcliff University, Irvine, CA 92614, USA

*Corresponding Author: m.kamruzzaman.130@westcliff.edu

ARTICLE INFO

Article history:

08 Jul 2024 (Received)

21 Aug 2024 (Accepted)

28 Aug 2024 (Published Online)

Keywords:

E-Commerce, Big Data Analysis, Digital Market, Information Technology, Global Economy.

ABSTRACT

E-commerce has gained significant attention in recent years, particularly in industries like healthcare and Industry 4.0. This interdisciplinary field can be explored from various perspectives, including technology, e-commerce, economics, and management. Future research topics and questions are proposed based on the analysis results and suggestions provided by authors in the same research field. This study aims to expose research endeavors in different regions, authors, and domains, identify main themes, and help big data analysts and scientists find innovative digital solutions for organizations and governments. The research has included a global perspective of innovative E-commerce adoption through longitudinal research, cross-cultural studies, business and economic level research, and qualitative method. National culture plays a role in environmental innovation through the use of Big Data Analytics capabilities. The future of e-commerce is bright with possibilities driven by technological advancements, and businesses need to adapt to stay ahead of the curve.

DOI: <https://doi.org/10.63471/ojbem24001> @ 2024 Open Journal of Business Entrepreneurship and Marketing (OJBEM), C5K Research Publication

1. Introduction

Rapid developments in information and telecommunication technology have significantly impacted the landscape of organizational computing, leading to the rise of electronic commerce (E-commerce), including Web-based commerce, mobile commerce (M-commerce), and ubiquitous commerce (U-commerce) (Gupta, 2014). Web-based commerce has significantly impacted the business world and will continue to be important. Big data analytics is a complex process that involves examining big data to uncover hidden patterns, correlations, market trends, and customer preferences, helping organizations make informed business decisions. Data analytics technologies and techniques allow organizations to analyze data sets and gather new information. Business intelligence (BI) queries answer basic questions about business operations and performance. Big data analytics encompasses advanced applications with elements such as predictive models, statistical algorithms, and what-if analysis powered by analytics systems (Li et al., 2021).

An example of big data analytics can be found in the healthcare industry, where millions of patient records, medical claims, clinical results, care management records, and other data must be collected, aggregated, processed, and analyzed. This data varies greatly in type,

quality, and accessibility, presenting significant challenges but also offering tremendous benefits (Mohamad et al., 2021). Big data analytics encompass a blend of big data and analytics to create business analytics. It embraces three main features: variety, volume, and velocity. Conventional systems are not suitable for handling and evaluating large quantities of data due to these features. Therefore, techniques like hierarchical clustering and deep learning are used for big data information extraction (Pollák et al., 2021).

Big data analytics reform the efforts of e-commerce firms in forming a competitive advantage in both the conventional physical world and the virtual or digital world. Through digitization, firms are gaining more opportunities to envision and create advanced models of business within two-sided markets, with interconnections between two or more customers providing potential money gains to the firms as big data users (Mohdhar & Shaalan, 2021; Pollák et al., 2021). E-commerce is the process of using electronic devices to buy or sell products over the Internet, forming the basis of many online businesses. This has significantly reduced startup costs and allowed for growth and advancement in e-commerce (Li et al., 2021). It has revolutionized businesses by allowing them to run without physical supervision and make money even in our sleep. Payments are made using credit cards, mobile

*Corresponding author: m.kamruzzaman.130@westcliff.edu (Md Kamruzzaman)

All rights are reserved @ 2024 <https://www.c5k.com>, <https://doi.org/10.63471/ojbem24001>

Cite: Md Kamruzzaman (2024). The Future of E-Commerce: Innovations and Challenges. *Open Journal of Business Entrepreneurship and Marketing*, 1(1), pp. 1-8.

money, online banking, and cash wallets. The evolution of e-commerce has seen an improvement in the currency used to trade (Mohdhar & Shaalan, 2021).

Increases in sales and advances in e-commerce platforms such as Amazon, Etsy, and Alibaba support e-commerce. A wide range of websites and apps are available to support e-commerce, providing a wider array of goods and services with more options than any physical shop. E-commerce can be traced back to the 60s when companies used Electronic Data Interchange to transfer documents (Archetti & Bertazzi, 2021; Gupta et al., 2023). The World Wide Web laid the basis for e-commerce by allowing for the exchange of information and advertising. Keeping up with e-commerce trends and innovations is crucial for businesses to understand consumer needs, adapt to new market demands, and maintain a competitive edge. Technological advancements have led to the development of new devices that simplify and facilitate e-commerce, and the evolution of social media platforms like Instagram has created new avenues for e-commerce. With the rise of ads, pop-ups, and influencers on these platforms, e-commerce has grown tenfold (Gupta et al., 2023).

This study identifies research endeavors in various regions, domains, and levels, and highlights the main themes driving this field. Future research topics include a more global perspective on big data analytics adoption, cross-cultural studies, and understanding radical innovation culture and BD analytics values in transitional economies. The study also suggests that big data analysts and scientists should contribute more to the literature through high-impact industry-oriented research to improve the adoption process of big data analytics and innovation in organizations.

2. Literature review

E-commerce stands for electronic commerce, a form of trading goods and services through the electronic medium. It has revolutionized business by changing competition with the internet and creating a market place for consumers and businesses. With advancements in internet and web-based technologies, distinctions between traditional markets and the global electronic marketplace are narrowing down. India is experiencing significant growth in e-commerce due to low PC costs and growing internet usage, highlighting the growing awareness of opportunities offered by electronic commerce (Gupta, 2014). A study investigates the factors influencing B2C electronic commerce adoption at a global level. Using a Technology-Organisation-Environment (TOE) framework, the findings reveal that ICT access, political and regulatory environment, and human resource development positively influence national-level adoption. Technological, organizational, and environmental factors account for 70% of the variance in B2C e-commerce adoption. These findings offer valuable insights into the adoption of electronic

commerce at the national level and offer implications for research and practice (Adam et al., 2020).

The Social Internet and omnichannel systems are revolutionizing commerce, presenting challenges and opportunities for businesses. The evolution of commerce is influenced by the advancement of technology, with the Social Internet of Things playing a significant role in communication, transactions, and composition. This study aims to provide an understanding of the future drivers of omnichannel systems in the 4th industrial revolution, its prospects, and anticipated challenges for governments, supply chain organizations, and consumers (Mohdhar & Shaalan, 2021). The publishing industry is transforming with the advent of electronic publishing, enabling users to import files to personal computers or e-book readers for digital reading. This strategic use of e-commerce has reduced printing costs and time to market, allowing for a more efficient process. The transition from a single distribution channel to multiple channels, including e-books and print-on-demand technology, is crucial for the industry's growth. Management techniques in the global marketplace are essential for utilizing emerging information technologies. As e-publishing becomes more popular, common standards must emerge and combine to achieve mainstream status (Aseh et al., 2021).

In order to provide some guidance for the technological path innovation and data value reconstruction of deep integration of blockchain technology and various fields, the paper begins with an overview of the fundamental idea of blockchain technology, goes on to describe its architecture and common applications, and concludes with a summary of the challenges faced by the technology (Li et al., 2021). Cloud computing has become a competitive tool for organizational sustainability and strategic positioning. However, it faces challenges due to inadequate understanding of appropriate models and user perception of Cloud Computing Adoption (CCA). This study investigates the current state of literature on CCA using various technology adoption models. A systematic literature review of 204 articles revealed that the TOE model was the most adopted, followed by the DOI model. The study identified 23 determinants of CCA as significant factors determining adoption, with security and privacy being the most dominant factors. SME is the major area where CCA has been used, especially from 2015 to 2020 (Ahmed & Saidu, 2022).

The literature describes what E-commerce is, and what the benefits and disadvantages of E-commerce are. The role of E-commerce in different stages of life is also mentioned in the literature. In this study, the future of E-commerce is discussed. Some complications and solutions are also discussed in the results.

3. Methodology

A straightforward group approach was used to do the study, with a focus on selecting a number of publications. The process then went as shown in Fig. 1's flow chart:

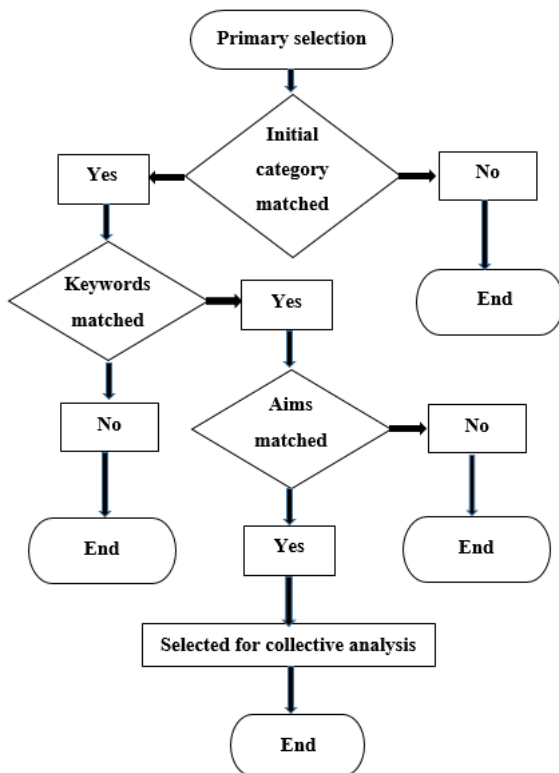


Fig. 1. Flowchart for data selection.

Following the process, a number of articles were rejected because they did not meet the requirements. Ultimately, the identified publications underwent analysis, with the findings being classified and elucidated in the results section.

4. Results

Thirty papers met the goal of this paper after all the steps in the basic collective technique were followed. The following findings are derived from the study of the chosen papers:

4.1. Emerging Trends in E-Commerce

Businesses and the way they trade have greatly advanced as a result of e-commerce. E-commerce has advanced significantly thanks to several recent technological advancements. They consist of the following:

- **Artificial Intelligence and Machine Learning:** In e-commerce, artificial intelligence has played a significant role (Fig. 2). This is achieved by enhancing firm operations and facilitating the understanding and satisfaction of customer needs. Companies are utilizing AI across various industries, enabling them to generate innovative ideas for enhancing e-commerce. Computers can

now utilize data and statistical methods to generate predictions thanks to machine learning.

AI has created algorithms that examine consumer purchasing habits and ad preferences.

The user may be given recommendations for new goods based on this information. This adjusts the material that users engage with to meet their requirements. Artificial intelligence is used to provide consumers with recommendations that are specifically designed to encourage purchases. The purpose of it is to customize the user's product suggestions.

AI has produced several crucial tools for customer care. Chat boxes and virtual shopping assistants are two examples. These engage with clients to provide customer service, handle orders, and respond to inquiries. They give consumers individualized, real-time virtual help to entice them to make purchases. Suggestions that the consumer is likely to desire are also provided through targeted customer advertisements.

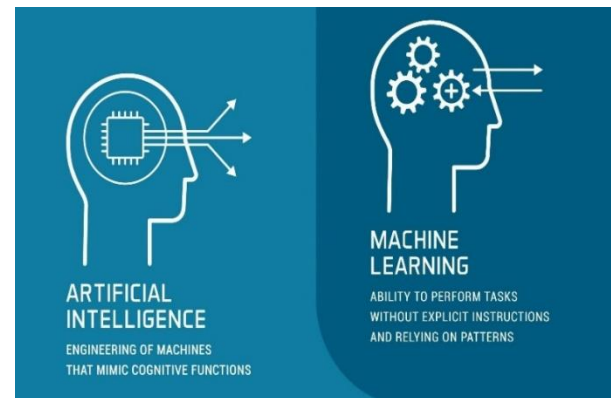


Fig. 2. Artificial intelligence and machine learning.

Additionally essential to forecasting supply and demand is artificial intelligence. This is achieved by analyzing customer behavior and projecting product demand. Predictive analytics makes an effort to predict a customer's next purchase based on their browsing habits and previous purchases.

- **Augmented Reality (AR) and Virtual Reality (VR):** Augmented Reality (AR) is a technology that blends computer-generated 3D content with the real world (Fig. 3). Videos and images are used to enhance reality, making this feasible. Conversely, virtual reality offers a synthetic environment as a substitute for the consumer's actual reality. E-commerce has benefited from the use of both of these.

To try and obtain a sense of how clothing, accessories, and cosmetics would appear on them, customers may digitally put things on. They can make better-informed purchases as a result. Additionally, it generates an engaging gaming experience that encourages purchases. E-commerce was a poor alternative for in-person

purchasing when it came to makeup since hue matching is important when making a purchase.

Through virtual try-ons, customers may sample cosmetics and subsequently buy it online.

AR mirrors are available in actual locations. You may utilize augmented reality for furniture buying. Any prospective piece that a customer wants to buy can be placed over an existing space in their house. This enables people to see the piece's dimensions and texture before making a purchase. This enables the purchaser to determine whether or not it fits properly in their area.

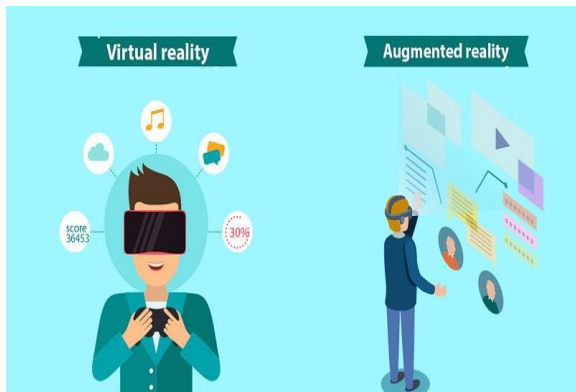


Fig. 3. Virtual Reality (VR) and Augmented Reality (AR).

Additionally, prospective customers may "walk" around a virtual store in virtual reality and feel the colors, designs, and textures of various apparel and furniture pieces just as they would in a physical store. Customers may engage with the product, which makes their purchasing experiences more enjoyable.

- **Voice Commerce (Fig. 4):** Voice commerce refers to the use of voice instructions to facilitate online purchases. Hands-free interaction with these shopping sites is facilitated by virtual assistants such as Siri and Alexa. It shortens the period between deciding to buy and making the transaction. This facilitates and expedites the purchasing process.

Digital assistants with vocal capabilities, such as Alexa, are the source of voice commerce. Smart gadgets, such as smart speakers, have made this possible. On retail websites, these algorithms facilitate simpler interaction and access to merchandise. Voice commerce has improved the buying experience and raised overall convenience. This has been accomplished using voice searches, the creation of shopping lists, checkout processes, and even customer service.

The success of voice commerce depends on people having access to gadgets that can integrate virtual assistants like Siri. The user may be limited by this. Additionally, speech recognition cannot be used to complete any of the purchase process's phases. Banks do not allow voice commands to complete transactions

due to cyber security concerns; instead, consumers may need to manually enter their credit card numbers or pins.

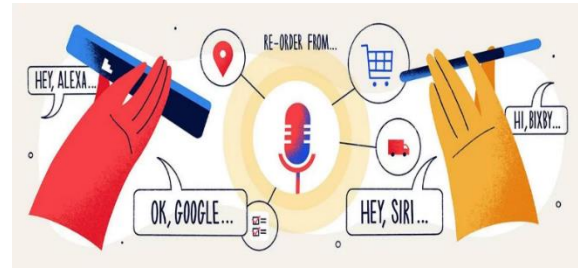


Fig. 4. Voice commerce.

That does not imply, however, that there are no chances. One way to make the most of your opportunities is to designate keywords that make it simple for customers to locate your offering. A website's products can be categorized and organized to make searching easier. Search history may be used to determine what a client has bought a lot.

- **Social Commerce:** Social media is used for retailing in a sort of e-commerce known as social commerce (Fig. 5). The vendor and the customer are connected online. They receive assistance while trading goods and services. Social media utilization improves the clientele's experience. For example, posts on social networking sites like Instagram may contain affiliate links that, when clicked, take the user to the retail website to make a purchase. Social media also allows consumers to rate and review products, which is another benefit.

For many firms, influencer marketing has proven to be highly beneficial. They are now using this type of marketing instead of traditional ones. A particular benefit of it is that it amplifies the product. This raises awareness of a potential new good or service that a company may provide shortly.



Fig. 5. Social commerce.

It enables firms to offer a product that precisely fits the demands of a certain segment, like moms. The emotional bond followers have with influencers is a benefit of utilizing influencers in marketing that is not observed in mainstream advertising. When influencers are employed, this often promotes trust and loyalty, which increase sales. Influencers give product reviews, which gives their followers the courage to try out new things.

Interactive campaigns are another tool that influencers utilize to promote product engagement. Influencers that utilize challenges and prizes to increase product involvement are a frequent example of this. Influencers may be employed to raise customer interest and create anticipation for a product before it is introduced to the market.

Influencers host live broadcasts during which they promote and sell goods in a practice known as live-streaming commerce or live shopping. It generates sales for the company and provides an opportunity to communicate with influencers in real-time. Users can post comments, pose inquiries, and even get prompt responses to queries or issues.

Influencers can also provide examples of proper product usage. For example, any particular or distinctive qualities that subsequently enable customers to make informed purchasing decisions. During these live streams, influencers also provide links that viewers may click to buy the goods they are promoting.

- **Blockchain Technology:** Blockchain technology has significantly improved online shopping. It establishes a framework for creating digital ledgers and recording transactions. To maintain security, it ensures that transactions are tracked, saved, and verified. To guarantee data security, the data is also encrypted. It guarantees data permanence and distributes it among other computers in the network for transparency and record-keeping. Furthermore, transactions cannot be altered or removed once they are recorded. Thus, among the advantages of blockchain are (Fig. 6):

- Improving the transparency of the supply chain.
- Offer smart contracts and safe payment options.

Decreasing fraud and the sale of fake goods.

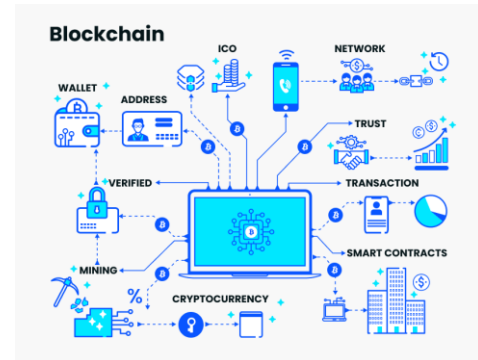


Fig. 6. Blockchain technology.

4.2. Innovations Driving the E-Commerce Industry

Over time, e-commerce has advanced greatly. This is partially attributable to advancements in other technological domains. These developments have enabled e-commerce to expand and adapt in response to consumer demands. These have attracted and retained customers by offering speed, simplicity of use, and convenience.

Advances have been observed in the methods by which online shoppers may complete their payments. Due to them, buyers may make payments from anywhere in the globe. Among these advanced payment options are:

- **Digital wallets:** PayPal and Apple Wallet are a couple of these. Wallets have made it possible to make payments quickly and easily. Websites use multifactor authentication and encryption to safeguard their users. Fig. 07 shows Digital wallet for money transfer.

Buy Now, Pay Later (BNPL) services: These are extensively offered in online stores, and among them is Afterpay, which enables users to make credit purchases and make biweekly payments. In addition to the US and Australia, several other countries have comparable systems.



Fig. 7. Digital wallet for money transfer.

- **Cryptocurrency payments:** Both buyers and sellers appreciate the added security and data protection provided by this payment method. These are more widely accepted internationally and tend to worry about exchange rates less than credit cards do.

Additionally, innovation has been applied to provide more environmentally friendly solutions that can guarantee e-commerce's continued existence for next generations. It makes an effort to guarantee that companies, especially those that operate online, live in harmony with the environment. It guarantees that businesses cut waste and protect the environment. This draws clients who care about the environment, which boosts revenue. Businesses may do this by doing the following:

- Ecologically responsible shipping & packing.
- Sustainable procurement of goods.
- Green items are in demand from consumers.

4.3. Omnichannel Retailing

This focusses on how to seamlessly combine traditional and internet marketing channels to increase sales. To increase sales, businesses use online tools like social media and apps with offline tools like physical shopfronts. Businesses that do this have to make sure that customers receive the same experience on both platforms. It is important to uphold the caliber of the products and services provided both online and off.

Customers can choose to purchase goods on certain platforms, like Jumia and Alibaba, and have them delivered, or they can choose to pick them up at a pickup station, which is a well-known and designated place. This option is also known as the click-and-collect and curbside pickup options. This is how offline and the internet collide.

4.4. Hyper-Personalization

In e-commerce, hyper-personalization is crucial. Enterprises leverage artificial intelligence, machine learning, and big data to customize user experiences. An analysis is conducted on the browser history, past purchases, and clicks made by a customer. For individualized marketing, big data from transactions and social media may be utilized. Businesses can anticipate the tastes and behavior of their consumers thanks to this real-time data collection.

Businesses propose or recommend particular items that a user might find interesting based on the user's browsing history and clicks. We refer to them as customized product suggestions. Additionally, users are free to choose how they want to connect with the websites. Take the website's design and theme, for instance. The adoption of dynamic pricing techniques is another technique. Here, consumers who have browsed a product in the past or who are repeat buyers get exclusive discounts.

4.5. Challenges Faced in E-Commerce

Businesses now face significant obstacles when attempting to use e-commerce due to a variety of issues.

These have made it challenging for certain companies to enter the e-commerce space profitably. Regulatory compliance, supply chain management, and cybersecurity concerns were some of these difficulties.

- **Cyber security Threats:** Cyber security risks have an impact on online sales. This is since they result in data losses, reputational harm, and monetary losses. By doing this, businesses lose clients. Phishing, malware (viruses, Trojan horses, spyware), ransomware, and distributed denial of service attacks are examples of common cyber attacks.

Attackers attempt to fool users into divulging personal information through phishing. Until a ransom is paid, ransomware prevents the machine from operating normally. Attacks such as distributed denial of service overload the system with traffic, making it impossible for the websites to function. As a result, businesses require strong security protocols. Strong authentication, safe payment options, frequent audits, and effective staff training are a few of them.

For example, Target was the victim of a cyber attack in 2021 when credit card information was obtained through the use of malware. The corporation revealed user information, including names, phone numbers, and addresses, as a result of this assault. The business also suffered losses in the hundreds of thousands of dollars. Consequently, the organization devised strategies to improve security, such as implementing network segmentation.

- **Logistics and Supply Chain Management:** Businesses are forced by e-commerce into a completely new area of supply chain management. The reason for this is that supply chain management operates on a global scale. Policies are implemented to make this possible. Among these is data analytics, which tracks patterns to forecast demand.

Next, in order to guarantee a consistent supply of goods, suppliers are contacted to make sure that pricing is competitive and that communication is consistent. Another essential component is customs compliance, which is maintained for the business through brokers. Along with maintaining current inventory, the business guarantees seamless online transactions and prompt delivery of items to customers.

- **Last-mile delivery challenges:** These are the difficulties encountered during the final delivery of the items from the distribution centers to the customer. High delivery costs, traffic jams, erroneous or imprecise addresses, and unsuccessful deliveries while clients are not home are among the difficulties encountered. Fast and free delivery are drawing in more and more customers, which typically boosts sales.

As a result, businesses must supply goods quickly and for free while being profitable. Geopolitical problems are those that pertain to how a nation's political and economic conditions influence its relations with other nations. Disagreements over trade, political unrest, and military instability may all have an immediate impact on Internet enterprises. This is caused by changes in currency, trade restrictions or sanctions, gasoline prices, and customs.

- **Regulatory and Compliance Issues:** To safeguard consumers and preserve their right to privacy, a number of data privacy laws are in place. Businesses must continue to be watchful to make sure their clients are safe from fraud. Thus, for businesses to stay in compliance with rules, they need ways to adjust to the ever-changing legal environment. These include designating a legal team to keep an eye on all pertinent legislation, conducting frequent audits, and making use of compliance tools.

Among the significant legislation pertaining to data privacy is the General Data Protection Regulation (GDPR). The European Union's users are to be protected by this. It stipulates that companies must obtain consumers' express consent before collecting any data from them. The California Consumer Privacy Act (CCPA) is another measure to ensure data privacy. It aims to provide its US consumers the authority to understand what, why, and how much use is made of the data that is being gathered.

These laws provide guidance for international trade. The World Trade Organization (WTO) Agreement is one such rule. It includes a number of accords that support unrestricted commerce and permit private ownership of intellectual property, such as GATT and GATS.

- **Competition and Market Saturation:** In order to thrive in the congested e-commerce sector, firms need to find strategies to keep one step ahead of their rivals. This is accomplished through big data utilization, utilizing technology for stock control, personalization, and convenient and user-friendly websites. Differentiating your brand from the competition is another strategy to keep one step ahead. This may be accomplished by recognizing and highlighting the distinctive qualities of the companies or by emotionally connecting with the audience through the use of family-oriented advertisements, for example. Another way would be to take advantage of specialty markets.

5. Future Outlook and Predictions

E-commerce's capacity to use emerging technologies will determine its future. Drones, for example, might offer a sophisticated delivery method that avoids a lot of problems, like traffic and human mistakes. Increased internet speeds have the potential to fuel e-commerce

development and expansion. Self-driving cars have the potential to revolutionize transportation. AI is also useful for forecasting consumer trends and behavior. Faster, more convenient, and more customized consumer experiences will be made possible by innovation.

6. Conclusion

Big data analytics and innovation in e-commerce literature have gained significant attention in recent years, with researchers highlighting the importance of big data tools and techniques in achieving innovation outcomes. This field is particularly relevant in industries like healthcare and Industry 4.0. After 2020, researchers from various countries focused on data analytical solutions to combat the disease and establish preventive actions against it. The research in this field is an interdisciplinary field that can be explored from different perspectives and approaches, such as technology, e-commerce, economics (accounting and finance), and management. Future research topics and questions are proposed based on the analysis results and suggestions provided by the authors in the same research field. This study has several implications, including exposing research endeavors in different regions, authors, and domains, and identifying the main themes that have driven this field of research till date. Researchers can now perceive potential subjects and topics based on their countries and identify research gaps in local and global occasions. Practically, this bibliometric study can help big data analysts and scientists find innovative digital solutions for organizations and governments through their research and development departments. The proposed research agenda includes a more global perspective of innovative Big Data Analytics Adoption through Longitudinal research, exploring the importance of projects developed in global networks in developing local innovation capacities and associated mechanisms. Cross-cultural studies and longitudinal research can help understand the relationship between Big Data Analytics capabilities and green radical and incremental innovation in the pharmaceutical industry or food industry sectors. Business and Economic level research can help understand radical innovation culture and Big Data Analytics values in transitional economies. Qualitative methods can help understand in-depth relationships between Big Data Analytics and value creation mechanisms in businesses. National culture plays a role in environmental innovation through the use of Big Data Analytics capabilities. The future of e-commerce is bright with possibilities, driven by technological advancements. It is critical to feed into research and innovation to find ways to ensure growth in the industry. Businesses need to find ways to keep adapting to remain ahead of the curve, and e-commerce provides this avenue for businesses. A business that adapts is a business that thrives.

References

- Adam, I. O., Alhassan, M. D., & Afriyie, Y. (2020). What drives global B2C E-commerce? An analysis of the effect of ICT access, human resource development and regulatory environment. *Technology Analysis & Strategic Management*, 32(7), 835-850.
- Ahmed, A. A., & Saidu, A. A. (2022). Understanding determinants of cloud computing adoption: A review of technology adoption models. *International Research Journal of Science, Technology, Education, and Management*, 2(2), 226-241.
- Archetti, C., & Bertazzi, L. (2021). Recent challenges in Routing and Inventory Routing: E-commerce and last-mile delivery. *Networks*, 77(2), 255-268.
- Aseh, K., Al-Qudah, O. M. A. A., Yusoff, M. H., Pathmanathan, P. R., Latiff, N. A. A., Jusoh, J. A., Abu-Ulbeh, W., El-Ebiary, Y. A. B., & Al Moaiad, Y. (2021). The Future of E-Commerce in the Publishing Industry. 2021 2nd International Conference on Smart Computing and Electronic Enterprise (ICSCEE),
- Gupta, A. (2014). E-Commerce: Role of E-Commerce in today's business. *International Journal of Computing and Corporate Research*, 4(1), 1-8.
- Gupta, S., Kushwaha, P. S., Badhera, U., Chatterjee, P., & Gonzalez, E. D. S. (2023). Identification of benefits, challenges, and pathways in E-commerce industries: An integrated two-phase decision-making model. *Sustainable Operations and Computers*, 4, 200-218.
- Li, W., He, M., & Haiquan, S. (2021). An overview of blockchain technology: applications, challenges and future trends. 2021 IEEE 11th International Conference on Electronics Information and Emergency Communication (ICEIEC) 2021 IEEE 11th International Conference on Electronics Information and Emergency Communication (ICEIEC),
- Mohamad, M. B., Kanaan, A. G., Aseh, K., Alawi, N. A., Amayreh, K. T., Al Moaiad, Y., Al-hodiany, Z. M., Pathmanathan, P. R., & El-Ebiary, Y. A. B. (2021). Enterprise Problems and Proposed Solutions Using the Concept of E-Commerce. 2021 2nd International Conference on Smart Computing and Electronic Enterprise (ICSCEE),
- Mohdhar, A., & Shaalan, K. (2021). The future of e-commerce systems: 2030 and beyond. *Recent Advances in Technology Acceptance Models and Theories*, 311-330.
- Pollák, F., Konečný, M., & Ščeuľovs, D. (2021). Innovations in the management of E-commerce: analysis of customer interactions during the COVID-19 pandemic. *Sustainability*, 13(14), 7986.