Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector

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ABSTRACT

Purpose: *Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector aims to transform service-based businesses through the use of cutting-edge technologies and insight-based decision-making. By increasing productivity, customization, and scalability, this strategy produces better client experiences, more efficient operations, and innovative business models that go against established market structures.*

Methodology: *Combining both structured and unstructured information from multiple sources, such as market trends, consumer interactions, and the Internet of Things. employing big data analytics, predictive modeling, and machine learning to glean insights and spot possibilities. using cutting-edge technology to improve service delivery, such as cloud computing, blockchain, automation, and artificial intelligence. using platform-based economies, rethinking procedures, and developing new sources of income. Enhancing client happiness and strategy refinement through real-time analytics and feedback loops. In the tertiary sector, this model guarantees competitive advantage and sustainable growth.*

Analysis: *In the tertiary sector, disruptive technologies powered by tech-business analytics are revolutionizing established service models through increased customer satisfaction, cost savings, and efficiency. As a result, tech-business analytics shift the tertiary industrial landscape and promote sustainable growth by acting as a catalyst for disruptive ideas.*

Originality/Value: *An explanation of how traditional business analytics in the tertiary sector is different from tech business analytics. In addition, it looks at thirty recently submitted study recommendations about Tech Business Analytics in Tertiary industries and contains a generic design that can be used for technical purposes.*

Type of Paper: Exploratory Research.

Keywords: Business Analytics (BA), ICCT underlying technologies, Tech-Business Analytics, TBA, Industry Performance, Data Science, Big Data Analytics, Research gap in Business Analytics, SWOC analysis, Disruptive Innovations.

1. INTRODUCTION :

1.1 About Innovations in the Tertiary Industry Sector :

The service sector, also known as the tertiary industry sector, has experienced rapid expansion and efficiency due to recent technological breakthroughs. The following areas of innovation are being prioritized in this industry:

Table 1: Innovations in the Tertiary Industry Sector in different areas

Aspects	Area 1	Area 2
Digital Transformation	**E-commerce:** As online shopping platforms such as Amazon, Alibaba, and a number of other e-commerce sites have grown in popularity, retail has changed. Innovations include things like integrated payment methods, speedy delivery alternatives, and personalized purchasing experiences.	**Fintech:** Financial technology has introduced a number of services to the market, including peer-to-peer lending, blockchain, mobile banking, and cryptocurrencies. Technological advances such as digital wallets (like PayPal and Apple Pay) and robo-advisors are transforming financial services.
Artificial Intelligence and Machine Learning	**Customer Service:** Chatbots powered by artificial intelligence (AI) and virtual assistants improve user experience and operational efficiency by providing 24/7 customer support. Google, Amazon, and other companies employ AI to speed up service delivery.	**Predictive Analytics:** AI may be used to evaluate customer data and predict future patterns, which can help businesses better manage inventories, target marketing, and offer personalized services.
Healthcare Innovations	**Telemedicine:** The use of video consultations and remote monitoring devices has made healthcare more accessible, especially in the wake of the COVID-19 pandemic. Companies such as Amwell and Teladoc have experienced significant growth.	**Healthtech:** Health apps like Apple Health and Fitbit, as well as wearable technology, enable continuous health monitoring and proactive healthcare management.
Sustainability and Green Technologies	**Green Building Technologies:** Because of developments in sustainable architecture and construction, including smart grids and energy-efficient buildings, the service sector's environmental effect is diminishing.	**Sustainable Tourism:** The tourism industry is promoting sustainable travel by implementing eco-friendly practices, such as eco-tourism and carbon offset schemes.
Smart Cities and Infrastructure	**IoT and Smart Infrastructure:** The integration of Internet of Things (IoT) technology into urban infrastructure is resulting in the creation of smart cities. Intelligent traffic control, improved public transportation systems, and energy-efficient lighting are a few examples of these developments.	**5G and Connectivity:** 5G networks are strengthening connections and opening up new services in healthcare, education, and entertainment.
Education and E-Learning	**Online Learning Platforms:** Because of websites like Coursera, Udemy, and Khan Academy that provide a wide variety of online courses, education is now more accessible. Examples of advancements include virtual classrooms and adaptive learning technologies.	**Edtech:** Through personalized learning plans and intelligent tutoring tools, artificial intelligence (AI) is being used in education to improve student performance.
Entertainment and Media	**Streaming Services:** Sites like Netflix, Spotify, and Disney have transformed how people consume media; two examples of	**Virtual and Augmented Reality:** Through the usage of VR and AR in interactive media experiences, virtual

	developments are personalized content recommendations and interactive media.	tours, and gaming, consumers are given access to immersive surroundings.
Transportation and Mobility	**Ride-Sharing and Mobility Services:** Various bike and scooter sharing services, as well as companies like Uber and Lyft, have changed urban mobility. Innovative examples include intelligent transit systems and vehicles that resemble Uber.	**Electric Vehicles (EVs):** With the growing popularity of electric vehicles and the development of charging infrastructure, the automotive industry and urban mobility are changing dramatically.
Hospitality and Tourism	**Smart Hotels:** Hotels are using AI and IoT to offer automated check-in and check-out processes, smart room controls, and customized visitor experiences.	**Experience Economy:** innovations in creating unique and memorable travel experiences, such as completely immersive cultural encounters and adventure travel.
Logistics and Supply Chain	**Automation and Robotics:** The use of robotics and automated technologies in logistics centers and warehouses to improve precision and productivity.	**Blockchain in Supply Chain:** Blockchain technology can enhance supply chain security, traceability, and transparency.

Through the enhancement of sustainability, customer satisfaction, and productivity, these technologies are driving significant transformations in the tertiary sector. In the approaching years, more significant changes are expected as a result of technology's continuous advancement and integration into many service industries.

1.2 About Disruptive Innovations Using Tech-business Analytics in the Tertiary Industry Sector:

The tertiary industry sector is seeing a revolution in the management, optimization, and delivery of services due to disruptive technologies driven by tech-business analytics. Through the use of data analytics, artificial intelligence (AI), and machine learning (ML), these developments create new business models, enhance customer experiences, and boost operational efficiencies. Tech-business analytics are generating disruptive innovations in three important domains:

Table 2: Disruptive Innovations using TBA in Tertiary Industry Sector in Various areas.

Aspects	Area1	Area2
Predictive and Prescriptive Analytics	**Retail and E-commerce:** Businesses use predictive analytics to regulate supplies, forecast demand, and customize marketing strategies. For example, Amazon optimizes inventory management and product promotion with predictive analytics, which lowers stockouts and excess inventory.	**Healthcare:** Predictive analytics facilitates the process of identifying at-risk patients and tailoring treatment plans. Healthcare providers use information from wearable technologies and electronic health records (EHRs) to better manage patient care and predict disease outbreaks.
Customer Experience and Personalization	**Personalized Marketing:** Businesses can use data analytics to understand the tastes and behavior of their customers. Companies like Netflix and Spotify use analytics to offer personalized content recommendations in an effort to increase user satisfaction and engagement.	**Customer Service:** Chatbots and virtual assistants with AI capabilities analyze customer interactions to provide timely, customized responses. E-commerce websites, for example, include chatbots that can answer inquiries, complete transactions, and provide 24/7 support.

Operational Efficiency and Automation	**Supply Chain Optimization:** Real-time supply chain operations data from advanced analytics and Internet of Things devices enables proactive management and optimization. Analytics are used by companies like Walmart to streamline their supply chain, reducing costs and boosting output.	**Process Automation:** Repetitive tasks and procedures can be automated with AI and robotic process automation (RPA), which boosts output and lowers mistakes. Banks use RPA to automate loan processing and compliance inspections, for instance.
Financial Services and Fintech Innovations	**Risk Management and Fraud Detection:** In order to assess credit risks and identify fraudulent behavior, machine learning algorithms analyze transaction data. Square and PayPal are among the companies that are using these technologies to increase security and reduce financial fraud.	**Robo-Advisors:** AI-enabled robo-advisors provide personalized portfolio management and investment advice, hence expanding access to financial services. Companies like Wealth Front and Betterment, which offer personalized investing solutions, use analytics.
Smart Infrastructure and Urban Management	**Smart Cities:** Data analytics and IoT are used in smart city infrastructure management. Smart traffic management systems and smart grids more effectively distribute energy to reduce traffic congestion. Leaders in smart city initiatives include Singapore and Barcelona.	**Public Transportation:** Public transportation timetables and routes are optimized by analytics using real-time data, which boosts productivity and cuts down on wait times. Businesses like Uber and Lyft use dynamic pricing techniques based on demand analytics.
Education and Edtech	**Adaptive Learning Systems:** Learning results are improved by analytics-powered adaptive learning platforms that tailor the curriculum to each student's needs. Platforms like Khan Academy and Coursera use data to personalize learning paths.	**Student Retention and Success:** Predictive analytics is used to identify at-risk students and provide interventions. Universities use these insights to improve student performance and retention rates.
Hospitality and Tourism	**Dynamic Pricing:** In order to maximize revenue based on demand estimates, hotels and airlines employ predictive analytics to implement dynamic pricing techniques. To boost revenue and occupancy, companies like Airbnb and major hotel chains employ these tactics.	**Guest Experience Enhancement:** Through data analytics, visitor experiences may be made more personalized, from tailored hotel settings to suggested activities. To anticipate the wants and preferences of their guests, smart hotel systems employ data.
Telecommunications and Media	**Content Delivery and Optimization:** Streaming services are reliable and fast because analytics improves the efficiency of content delivery networks (CDNs). Netflix and other companies utilize analytics to manage bandwidth and enhance the viewing experience.	**Audience Analytics:** Media corporations utilize analytics to ascertain audience preferences and modify their content accordingly. In this way, targeted advertising is created and viewer engagement is raised.
Energy Management	**Smart Grids:** Building smart grids that optimize energy distribution and use is made feasible by IoT and data analytics. By using these technologies, utilities can balance supply and	**Predictive Maintenance:** Analytics reduce downtime and operational costs by anticipating equipment failures and planning repairs. Energy companies utilize

	demand, reduce outages, and encourage renewable energy sources.	these results to maximize infrastructure upkeep.
Logistics and Transportation	**Route Optimization:** Delivery route optimization through analytics results in faster and less fuel-intensive deliveries. FedEx and UPS are two companies that use advanced algorithms to enhance their logistical operations.	**Fleet Management:** Fuel efficiency, fleet performance, and maintenance schedule optimization are all achieved through the use of IoT and analytics. Real-time data is used by fleet management systems to effectively manage large automobile fleets.

Their innovative ideas are being powered by tech-business analytics, which is transforming the tertiary sector into one that is more efficient, responsive, and individualized. More revolutionary changes are expected as data analytics technologies advance and have a greater impact on the service sector.

2. LITERATURE REVIEW :

Table 3: Review based on disruptive innovations using tech-business analytics in the tertiary industry sector

S. No.	Area	Issue	Outcome	Reference
1.	Quaternary Industry Sector: Tech Business Analytics	Known as the "quaternary sector," this knowledge-based segment of the economy comprises businesses engaged in professional services, telecommunications, information technology, and research and development. Technology-driven business analytics can be a useful tool for companies in this industry to make data-driven decisions, optimize workflows, and boost overall performance. Utilizing technology to evaluate corporate data can significantly improve an organization's operational performance, consumer behavior, and market trends.	Customers may become more satisfied and loyal as a result. Learning about emerging technologies and how they are combined with data science and business analytics may help predict market trends and present businesses with chances for growth and innovation.	Kumar, S., et al. (2024).[1]
2.	Analytics from Tech-Business in the Circular Economy	Because of its practical insights, operational effectiveness, and encouragement of innovation across the value chain, tech-business analytics is extremely important in helping firms make the shift to a circular economy. By using data analytics, companies may reduce waste, adopt sustainable practices, and provide long-term	The report examines how the circular economy's growth has been managed throughout the industry's history through the use of digital business analytics.	Kumar, S., et al. (2024).[2]

		benefits for society and the environment.		
3.	An in-depth examination of tactics and outcomes for leveraging business analytics to gain a competitive advantage in developing markets.	This study's systematic assessment of business analytics' impact on obtaining a competitive edge in emerging markets focuses on the application of state-of-the-art analytical methods and tools to organizational operations. This study uses a systematic literature review and content analysis technique to examine peer-reviewed articles, conference proceedings, and grey literature from 2018 to 2023. Databases such as IEEE Explore, Web of Science, and Scopus are the data's sources.	It is recommended that in order to close the gaps in the literature, future research concentrate on the integration of emerging technologies, ethical concerns, and the long-term implications of business analytics. Our understanding of how business analytics can be applied to effectively navigate the difficulties of emerging markets is expanded by this research, which offers a route for companies seeking to leverage data to obtain a competitive advantage.	Komolafe, A. M., et al. (2024). [3]
4.	Analytics from Tech-Business in the Blue Economy	The Blue Economy's Tech-Business initiatives use cutting-edge technologies, data analytics, and entrepreneurial strategies to increase resilience, encourage innovation, and propel sustainable growth for businesses in the maritime industry.	The results show the revolutionary potential of Tech-Business initiatives in stimulating innovation, promoting environmentally conscious growth, and enhancing the Blue Economy. Through the implementation of data-driven initiatives and technological advancements, stakeholders can generate fresh prospects for a more lucrative and sustainable future for marine ecosystems and coastal communities.	Kumar, S., et al. (2024). [4]
5.	A strategic HR framework that is driven by eco-innovation and data to support environmental sustainability in the creative industries.	With the increasing demand for environmental sustainability, industries worldwide are searching for innovative solutions to reduce their ecological footprint. Media, entertainment, design, and advertising are examples of the creative sectors that have a significant influence on cultural formation and consumer behavior. Their acts, however, often have adverse environmental consequences. This calls for a comprehensive human	Using eco-innovation and data analytics in HR procedures is one creative approach to addressing environmental issues in the creative industries. Businesses can lessen their environmental effect and take advantage of opportunities for innovation and distinctiveness in a market where environmental awareness is rising by putting this strategy framework into practice. Ultimately, this evaluation	Ejibe, I., Nwankwo, T. C., et al. (2024). [5]

		resource (HR) strategy built on data analytics and eco-innovation to support environmental sustainability in the creative industries.	encourages a comprehensive approach to sustainability in the creative industries that takes into account both environmental concerns and organizational goals.	
6.	Examining methods for managing uncertainty in the biotechnology, medical device, and healthcare industries.	Key elements of the biotechnology, medical device, and healthcare industries' reliance on innovation include research and development as well as the introduction of new goods. However, there are obstacles to commercializing novel products, and research and development and other innovation-related operations can be costly. Successful business models (BMs) must go hand in hand with these innovation initiatives. This study examines the intricacy of BMs in these creative firms, emphasizing the vital role that competent BMs play in encouraging creativity and adapting to unpredictability. By conducting a thorough evaluation of the literature to synthesize knowledge on BMs in innovative health-tech enterprises, this study evaluated models on dimensions such infrastructure, offering, consumers, and finances.	As per the analysis, fundamental models like sustainability, dynamicity, and open innovation can serve as a foundation for integrating them with other models. An industry-specific Dynamic Sustainable Business Model (DSBM) for health technologies is presented in the paper. With its combination of sustainability and adaptability, this model provides firms with a framework for effectively using emerging technology. A conceptual framework that distinguished 28 types of uncertainty factors in BMs was also developed to aid in risk management in the field of health technology. The findings give health-tech companies important information that helps them manage innovation and add value in a constantly changing market.	Javanmardi, E., et al. (2024). [6]
7.	This study looks at how tax competition affects how innovations in the high-tech sector are transformed, using data from provincial panels.	One important tactic for encouraging high-quality development is to successfully propel industrial innovations' transition. This study uses empirical panel data from 30 Chinese provinces from 2007 to 2021 to investigate the moderating effects of economic and scientific and technological (S&T) competition on tax competition (TC), as well as the effects of TC on the transformation of innovation achievements in high-tech industries (HTIAT). This study adds to TC's research	According to the study's findings, TC significantly reduces the HTIAT, with the eastern region seeing the most severe suppression. Economic competition will exacerbate the effect of TC on the HTIAT, while S&T competition can lessen it. Local governments should encourage the expansion of high-tech industries (HTI) more quickly, regulate their TC behavior, develop TC strategies that are specific to their community, boost local science and S&T competitiveness, and	Chen, Z. (2024). [7]

		scope and offers fresh perspectives on analyzing the direct effects of the government on the market.	improve the system for assessing the performance of local officials, according to this research.	
8.	Disruptive Maintenance through Kerala's Social Impact Start-ups: Innovative Paths to Social Change.	An developing innovation ecosystem in the southern Indian state of Kerala is described in this article. We suggest that start-ups in Kerala have a tendency toward "social innovation," or start-ups that are motivated by the goal of meeting certain societal needs in addition to being financially successful. This contrasts with the widely held national belief that start-ups in India are the best places to produce novel items with significant economic potential.	This suggests that even if this innovation ecosystem is capable of addressing important societal problems, it does not address the underlying social structures that initially cause such problems. Drawing on the work of sociologist Cornelius Schubert, we argue that analysing social innovation in Kerala as an instance of "disruptive maintenance" is analytically productive.	Raqib, M., et al. (2024). [8]
9.	Regarding China's Regional Industrial Chain Innovation and Reform Policy, is it feasible to achieve the impossible triangle of energy? The Effects of Increasing Industrial Chain Resilience: A Causal Inference Analysis.	Using a spatial Durbin DIDs model and a double machine learning model (based on the random forest technique), quasi-natural experiments were conducted in this paper. These are the results: The implementation of innovation and reform policies related to regional industrial chains and their resilience can significantly and favorably address China's impossible triangle coupling of energy. These policies can also have a meaningfully positive spatial transmission effect on the coordinated development of energy in the impossible triangle coupling in other regions.	The treatment group experiences significantly positive direct and indirect effects from both the "innovation and reform policy of the regional industrial chain leading power of the regional industrial chain the energy sector’s impossible triangle coupling coordination degree" and the "innovation and reform policy of the regional industrial chain regional industrial chain resilience the energy sector’s impossible triangle coupling coordination degree." Only the direct effect is significant in the control group.	Lu, T., et al. (2024). [9]
10	The effect of financial technologies on financial inclusion in Kenya.	Evaluating the impact of financial technologies, or Fin-Tech, on financial inclusion in Kenya was the aim of the study. An approach known as descriptive study was used to collect and analyze the data. Participants in the study were 25,000,000 adult Kenyans who had some kind of interaction with fintech. Quarterly secondary data on Fin-Tec and financial	The data was exported from the Excel sheet using STATA version 15. Kenyan financial inclusion has been evaluated using the OLS regression model. Financial technology and other factors have a major impact on credit to the private sector, which is a crucial measure of financial inclusion, according to the report. Through the use of mobile	Kamau, L., et al. (2024). [10]

		inclusion were supplied to the study by the CBK, Communication Authority, and KNBS databases. Data collecting sheets were used to document the extracted data using Excel sheets.	phones, agency banking, mobile money, and point of sale, financial technology has been shown to have a statistically significant impact on financial inclusion. The private sector is credited with the study's finding that financial inclusion is significantly impacted by financial technology and other factors.	

There are scholarly articles published related to tech-business analytics and integration of ICCT emerging technologies [11-25].

3. OBJECTIVES OF THE RESEARCH PAPER :

(1) Employing tech-business analytics to analyze TBA's disruptive and innovative ideas in the tertiary industry sector.
(2) To investigate and put into practice diverse research methods about TBA's disruptive inventions in the tertiary industry sector.
(3) To examine diverse methods for addressing TBA's disruptive technologies in the tertiary industry sector.
(4) It should have extensive knowledge of disruptive concepts in the tertiary industry sector and tech-business analytics.
(5) To review multiple SWOC studies of each possible disruptive innovation in the tertiary industry sector using tech-business analytics tools.
(6) To offer further suggestions for improving the offered and its in-depth analysis of TBA's revolutionary technologies in the tertiary industry sector.

4. METHODOLOGY :

Deploying disruptive innovations in the tertiary industry sector using tech-business analytics involves a number of structured processes. These steps ensure analytics integration is systematic, aligned with company goals, and capable of yielding measurable results. A detailed description of the process is provided below:

Table 4: Various methodology related to TBA in Disruptive Innovations using Tertiary Industry Sector.

S. No.	Aspects	Description
1.	**Identify Business Objectives and Challenges**	Be mindful of the particular challenges the business is facing and set clear goals. Set up meetings to find out the requirements, expectations, and problems of the key players. SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) can reveal areas where tech-business analytics can have the biggest impact. Establish SMART goals for the analytics project: specific, measurable, achievable, relevant, and time-bound.
2.	**Data Collection and Management**	Gather relevant information and ensure that it is readily available. Find the sources of every piece of information that may exist, including internal databases, external sources, IoT devices, and customer reviews. Implement data governance policies to preserve data security, privacy, consistency, and accuracy. Use Extract, Transform, Load (ETL) methods to integrate and prepare for analysis.
3.	**Data Analysis and Modeling**	Create predictive or prescriptive models and gain insights by using data analysis. Descriptive statistics are useful for understanding historical trends and present performance. Find patterns, relationships, and

		anomalies in the data by doing an EDA analysis. Develop predictive and prescriptive models by utilizing advanced analytics techniques such as artificial intelligence and machine learning. Create predictive models based on historical data. Provide models with recommendations for how to proceed in order to achieve the intended outcomes.
4.	**Implementation of Analytics Solutions**	Automate the processes for collecting, processing, and reporting data to boost productivity. Integrate analytics programs into business operations. Create and test prototypes of analytics solutions to ensure their viability and effectiveness.
5.	**Monitoring and Evaluation**	Continuously monitor the analytics solutions' performance and evaluate their impact. Set up and track KPIs to evaluate the success of the analytics projects. Construct reports and dashboards to provide stakeholders with up-to-date data. Create a feedback loop to gather input from stakeholders and consumers for continuous improvement.
6.	**Scaling and Continuous Improvement**	Develop successful analytics initiatives and continuously improve them in response to feedback and new data; assess the scalability of analytics solutions and plan for future use; refine models and increase the accuracy and applicability of analytics solutions by integrating new data and insights; and motivate the organization to base decisions on data and an innovative culture.
7.	**Tools and Technologies**	AWS, Google Cloud, and Azure are examples of cloud-based services; Apache Hadoop and Spark are examples of data processing and storage tools. Software for business intelligence and data visualization includes Looker, Power BI, and Tableau. Scikit-learn, PyTorch, and TensorFlow are a few examples of libraries and frameworks that can be used to build machine learning models. AI model development and deployment platforms include Google AI Platform, IBM Watson, and Microsoft Azure Machine Learning.
8.	**Case Study Examples**	A big retailer uses predictive analytics to enhance customer satisfaction through customized marketing, reduce stockouts and overstock situations, and optimize inventory management. A healthcare provider uses predictive analytics to identify high-risk patients and allocate resources optimally, lowering fraud losses and boosting customer trust. Banks use machine learning algorithms to detect fraudulent transactions in real time.

The use of tech-business analytics in the tertiary industry sector necessitates a systematic approach that includes goal-setting, data collection and organization, in-depth analysis, implementation of solutions, performance monitoring, and iterative improvement. By following this framework, businesses can effectively use analytics to generate disruptive ideas and gain significant competitive advantages.

5. ABOUT TECH-BUSINESS ANALYTICS IN TERTIARY INDUSTRY SECTOR :

The tertiary industry, commonly known as the service sector, focuses on offering services rather than tangible goods. These services include retail as well as financial, recreational, medical, and educational services. Business analytics and technology integration are currently crucial elements for this industry to become more inventive, efficient, and to enhance customer experiences.

Table 5: Key Areas of Application (Retail and E-commerce)

S. No.	Aspects	Constraints
1.	**Customer Insights**	By examining consumer data, one may comprehend trends, preferences, and purchasing patterns.
2.	**Supply Chain Management**	Predictive analytics can help reduce costs, streamline operations, and control inventory levels.

3.	**Personalization**	Creating personalized shopping experiences with recommendation engines.
Financial Services		
1.	**Risk Management**	Assessing credit risk, managing a portfolio, and detecting fraud with analytics.
2.	**Customer Segmentation**	Dividing up a number of customer groups in order to personalize financial products and services.
3.	**Regulatory Compliance**	To guarantee regulatory compliance, data monitoring and reporting are used.
Healthcare		
1.	**Patient Care**	Analyzing patient data can improve diagnosis, treatment plans, and outcomes.
2.	**Operational Efficiency**	In hospital operations, scheduling, staffing, and resource allocation are all maximized.
3.	**Health Monitoring**	Real-time patient health monitoring using Internet of Things sensors and wearable technology.
Education		
1.	**Learning Analytics**	Tracking student progress to improve academic outcomes and customize learning opportunities.
2.	**Administrative Efficiency**	Simplifying administrative processes and enhancing the distribution of resources.
3.	**Predictive Analytics**	Forecasting enrollment trends and identifying at-risk children who require early support.
Technologies and Tools		
1.	**Big Data Analytics**	Big data processing tools, such as Hadoop and Spark.
2.	**Machine Learning and AI**	Predictive modeling, automation, and natural language processing algorithms.
3.	**Data Visualization**	Tools like Tableau and Power BI are used to create visual reports and interactive dashboards.
4.	**Cloud Computing**	AWS, Azure, and Google Cloud are examples of scalable data processing and storage solutions.
Benefits		
1.	**Improved Decision Making**	Data can help make better operational and strategic decisions.
2.	**Enhanced Customer Experience**	Improved client connections and customized offerings.
3.	**Increased Efficiency**	Simplified operations and reduced costs were the results of improved procedures.
4.	**Innovation**	Technologically advanced business models and creative service offerings.
Challenges		
1.	**Data Privacy and Security**	Making that the confidentiality of company and client information is maintained.
2.	**Integration**	Combining a variety of data sources and outdated systems.
3.	**Skill Gaps**	There is a shortage of professionals with data analytics and technical expertise.
4.	**Cost**	Significant up-front expenses for technological infrastructure and tools.
Future Trends		
1.	**AI and Automation**	Application of AI is growing in order to automate monotonous jobs and enhance decision-making.

2.	**IoT and Edge Computing**	Utilizing IoT devices to gather data in real time and edge computing to process information more quickly.
3.	**Blockchain**	Especially in the financial services sector, blockchain technology is being used to enable transparent and safe transactions.
4.	**Augmented and Virtual Reality**	Utilizing immersive technologies to enhance customer experiences in sectors like retail and leisure.

In the tertiary industrial sector, tech-business analytics is revolutionizing service delivery and consumption. By using data and advanced analytics, businesses may gain valuable insights, boost productivity, and innovate continuously. Despite challenges, ongoing technological advancements suggest that the service sector will become more responsive, individualized, and efficient in the future.

6. POSSIBLE DISRUPTIVE INNOVATIONS USING TECH-BUSINESS ANALYTICS IN TERTIARY INDUSTRY SECTOR WITH EXPLANATIONS :

Innovative developments in the tertiary industry sector, commonly known as the service sector, have the potential to fundamentally change the way services are delivered by enhancing their efficacy, value, and customization. Here are some potentially revolutionary developments utilizing tech-business analytics:

Table 6: Disruptive Innovations using TBA in Tertiary Industry Sector with explanation & examples.

S. No.	Aspects	Explanations	Example
1.	**Predictive Customer Service**	Businesses can use big data analytics and machine learning algorithms to predict customer issues and take proactive steps to address them. This reduces the effort for customer support workers while also improving client satisfaction by avoiding typical issues.	In order to predict network outages and alert affected customers before issues arise, telecom providers are using predictive analytics and automated maintenance scheduling.
2.	**Personalized Marketing and Recommendation Engines**	By analyzing vast amounts of customer data, businesses may offer highly personalized marketing and product recommendations. This increases the likelihood of sales and enhances the customer experience.	E-commerce websites such as Amazon and streaming services like Netflix utilize sophisticated recommendation algorithms to suggest content or goods based on the particular preferences and actions of each user.
3.	**Dynamic Pricing Models**	The primary determinants of dynamic pricing, which involves real-time price adjustments, are supply, demand, client profiles, and competitive pricing. Advanced analytics and artificial intelligence (AI) can be employed to optimize pricing strategies and boost revenue and market share.	Ride-sharing companies like Uber and Lyft use dynamic pricing, which adjusts prices in response to supply and demand, to guarantee availability and optimize profits.
4.	**Automated Financial Advisory Services (Robo-Advisors)**	In order to provide financial planning services with the least amount of human interaction possible, robo-advisors use algorithms. These companies analyze large datasets to offer personalized investment advice	Platforms like Wealth Front and Betterment make algorithm-powered financial planning services more affordable and accessible.

		and portfolio management for a fraction of the cost of traditional financial consultants.	
5.	**Smart Supply Chain Management**	Adding IoT and advanced analytics to supply chain management may make logistics more responsive and effective. With real-time data from sensors and advanced prediction algorithms, it is possible to optimize inventory levels, reduce waste, and deliver goods on time.	Using advanced analytics, big-box stores like Walmart optimize stock levels by examining supplier performance, seasonal patterns, and real-time sales data.
6.	**Enhanced Healthcare Services through Predictive Analytics**	Through the prediction of health issues, the customization of treatment plans, and the most effective use of resources, predictive analytics may benefit the healthcare sector. Healthcare services might adopt a more proactive rather than reactive strategy as a result of this.	Predictive algorithms can identify people who are at high risk of developing chronic diseases, which can lower hospital admissions and healthcare costs. Individualized treatment plans and early intervention are made possible by this.
7.	**Intelligent Virtual Assistants**	Virtual assistants with artificial intelligence (AI) capabilities may handle a range of tasks, from administrative to customer service inquiries, saving time and money by doing away with the need for human involvement.	Virtual assistants like Google Assistant, Apple's Siri, and Amazon's Alexa, which can do anything from setting reminders to controlling smart home devices, make life much easier for its users.
8.	**Advanced Fraud Detection and Prevention**	When businesses use AI and machine learning, they can better detect and prevent fraudulent activity. By looking at transaction patterns and customer behavior in real-time, abnormal activity can be promptly identified and fixed.	When financial institutions use advanced analytics to examine transactions for signs of fraud, like unusual spending patterns or locations, they can act quickly to halt illicit behavior.
9.	**Customer Sentiment Analysis**	Using natural language processing (NLP) to analyze customer reviews, comments, and social media interactions can help businesses improve their products and services and provide deep insights into customer sentiment.	Businesses can use tools like Brandwatch and Hoot Suite, which analyze social media data to assess customer sentiment, to modify their strategies depending on real-time input.
10.	**Enhanced Workforce Management**	Analytics may improve workforce management through forecasting staffing requirements, identifying talent gaps, and boosting employee engagement and retention. The aforementioned ensures that businesses have the right number of employees with the right skills at the right time.	Retailers and hospitality organizations use workforce analytics to forecast peak times and assign personnel appropriately, ensuring the highest service standards and reducing labor costs.

All of these technologies leverage advanced analytics and technology to transform traditional service delivery models and give the tertiary industry sector efficiency, personalization, and competitive advantage.

7. SWOC ANALYSIS OF EACH POSSIBLE DISRUPTIVE INNOVATION USING TECH-BUSINESS ANALYTICS IN THE TERTIARY INDUSTRY SECTOR :

8.1 Strengths of Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector:

Disruptive innovations that leverage tech-business analytics in the tertiary industrial sector have several benefits that have the potential to fundamentally alter the way services are delivered, managed, and experienced [26-30]. Here are a few of the primary benefits:

Table 7: Strengths of Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector

S. No.	Aspects	Strengths	Example
1.	Enhanced Customer Experience	Because tech-business analytics provide proactive problem-solving and customized products, they significantly boost customer satisfaction and loyalty.	Recommendation engines and predictive customer service systems that anticipate users' requirements and provide tailored solutions will make their experience more enjoyable and efficient.
2.	Increased Operational Efficiency	The application of analytics improves decision-making, reduces waste, and increases operational efficiency.	Real-time data is used by dynamic pricing and smart supply chain management systems to adjust prices and manage stocks, which reduces costs and maximizes resource use.
3.	Improved Decision Making	Through the reduction of risks and the optimization of opportunities, data-driven insights enable firms to make educated decisions quickly.	Financial institutions may more precisely assess credit risks and investment opportunities thanks to predictive analytics, which leads to safer and more successful financial strategies.
4.	Cost Reduction	Thanks to automated processes and efficient operations, operational costs are significantly reduced while service quality is maintained or even improved.	Because they provide excellent investment advice at a fraction of the cost of traditional human advisors, robo-advisors in the financial sector have made financial planning more accessible to a larger variety of consumers.
5.	Competitive Advantage	Effective tech-business analytics can help businesses beat competitors in a variety of ways, such as better consumer insights, more efficient operations, and better services.	Retailers may remain ahead of the competition and market trends by using thorough customer sentiment analysis to quickly adapt to changing consumer preferences.
6.	Scalability	Tech-business analytics solutions are readily scalable to accommodate the company's growth, ensuring that operations and services can expand without incurring commensurate increases in complexity or expenses.	Businesses can manage larger data quantities and more complex analyses using cloud-based analytics platforms without needing to invest heavily in infrastructure. This enables businesses to develop in tandem with their data processing capabilities.
7.	Enhanced Fraud Detection and Security	Advanced analytics can be used to detect patterns and abnormalities connected to fraud, enhancing security	Machine learning algorithms are utilized by banks and online payment systems to continuously monitor transactions in order to identify and

		measures and protecting the business and its customers.	prevent fraudulent activity before they do significant harm.
8.	Better Resource Management	Businesses can use analytics to gain insights on the best use of their resources, including workers, inventories, and other assets.	Workforce management systems that predict staffing needs based on historical performance and current trends ensure that businesses have the right number of employees available when needed, improving customer satisfaction and reducing labor costs.
9.	Innovation and Adaptability	Companies can react swiftly to market shifts and emerging trends thanks to the steady stream of data and analytical insights that foster an innovative and adaptable culture.	Healthcare professionals may remain at the forefront of medical innovation by using predictive analytics to predict health trends and then adapting new services or therapies to rising health concerns.
10.	Real-Time Insights	Rather than relying just on past data, real-time data analysis allows businesses to take advantage of opportunities and solve issues as they arise.	In order to offer the best possible pricing and efficient service delivery, ride-sharing companies dynamically assign drivers and adjust tariffs based on real-time data.

These attributes work together to help businesses in the tertiary industry sector deliver better services, function more efficiently, and stay competitive in a rapidly evolving market.

8.2 Weaknesses of Disruptive Innovations using Tech-Business Analytics in Tertiary Industry Sector:

Although disruptive innovations powered by tech-business analytics have many benefits, there are also disadvantages that need to be taken into account. A few notable shortcomings are as follows:

Table 8: Weaknesses of Disruptive Innovations using Tech-Business Analytics in Tertiary Industry Sector

S. No.	Aspects	Weakness	Example
1.	High Initial Costs	It is often necessary to make significant upfront investments in technology, infrastructure, and training in order to deploy advanced analytics solutions.	The upfront costs of hiring skilled data scientists and putting in place comprehensive analytics platforms may be prohibitive for small and medium-sized enterprises (SMEs).
2.	Data Privacy and Security Concerns	Massive amounts of personal data can be collected and processed, raising serious privacy and security issues that could lead to legal issues and a drop in customer trust.	Predictive analytics puts healthcare providers at risk of severe penalties and damage to their reputation if they violate regulations such as HIPAA on the preservation of sensitive patient data.
3.	Complexity and Skill Requirements	Integrating advanced analytics tools can be challenging for many firms since they require specific knowledge to function well.	Adopting dynamic pricing models requires data scientists and IT professionals who understand machine learning techniques and data integration processes.
4.	Data Quality and Integration Issues	For analytics to be successful, high-quality data is necessary. Inaccurate, inadequate, or badly integrated data may lead to	A financial institution's reliance on diverse data sources may make data integration problems worse, which

		false insights and poor decision-making.	could lead to erratic risk assessments and financial projections.
5.	Resistance to Change	Employees and stakeholders may be resistant to implementing new technology and processes, particularly if they are accustomed to using antiquated methods.	When a customer service department is hesitant to use AI-driven chatbots due to concerns about staff displacement or workflow changes, it could hinder the new technology's adoption and effectiveness.
6.	Over-Reliance on Technology	In over-reliance on automated technologies and analytics, human oversight may lead to mistakes or lost opportunities that require human judgment.	Sometimes, market anomalies can lead automated financial trading systems to make bad choices that, if ignored, could cause significant financial losses.
7.	Ethical and Bias Issues	Analytics systems, especially those based on artificial intelligence (AI), have the potential to perpetuate or even magnify biases in the data, leading to inaccurate or unethical outcomes.	Recruiting algorithms that look at historical employee data may inadvertently favor some demographics over others, which could lead to biased recruiting practices.
8.	Dependence on Data Availability	Analytics systems need to have constant access to big data collections. Interruptions in data flow or a lack of relevant data can have a major effect on the system's efficacy.	Supply chain analytics that rely on real-time data from IoT sensors may be affected by a data transmission issue, which could lead to poor inventory management choices.
9.	Maintenance and Upgrades	Advanced analytics systems require frequent updates and maintenance, which might be resource-intensive, in order to remain safe and operational.	Regularly adding new data sources, algorithms, and security updates to a retail analytics platform may need ongoing allocation of IT resources.
10.	Legal and Regulatory Challenges	Advanced analytics may give rise to laws and regulations concerning consumer protection, privacy, and data usage in some industries.	When using predictive analytics to make loan choices, financial institutions must adhere to a complex set of regulations to ensure they don't engage in discriminatory practices or violate any consumer protection laws.

To address these issues, comprehensive planning, ongoing investment, and a well-rounded approach that considers the benefits and drawbacks of revolutionary advances in tech-business analytics are required.

8.3 Opportunities of Disruptive Innovations using Tech-Business Analytics in Tertiary Industry Sector:

Disruptive innovations that use tech-business analytics in the tertiary industry sector offer a range of choices for achieving growth, efficiency, and competitive advantage. Here are some noteworthy opportunities:

Table 9: Opportunities of Disruptive Innovations using Tech-Business Analytics in Tertiary Industry Sector

S. No.	Aspects	Opportunities	Example

1.	Enhanced Customer Personalization	Through the application of tech-business analytics, companies can boost customer satisfaction and loyalty by offering highly tailored services and products.	E-commerce sites can use analytics to make product recommendations based on user browsing and purchase history in an effort to enhance the shopping experience and increase sales.
2.	New Revenue Streams	Companies can employ data analytics to discover new revenue streams through targeted advertising, dynamic pricing, and innovative service offerings.	Using dynamic pricing models, airlines may adjust ticket prices based on demand, time, and consumer characteristics in an effort to optimize revenue.
3.	Improved Decision Making	Companies can employ data-driven insights to improve strategic planning and operations.	Retailers can reduce overstock and stockouts and increase inventory profitability by using sales data and market trends.
4.	Enhanced Operational Efficiency	Analytics may help to streamline processes by identifying inefficiencies and areas for improvement, which could lead to reduced expenses and increased output.	By reducing fuel consumption and delivery times through the use of route optimization algorithms, logistics companies may improve overall efficiency.
5.	Innovation in Service Delivery	With the help of data insights, companies can develop innovative service delivery models, such as on-demand and subscription-based services.	To keep users and subscribers interested, streaming services like Netflix use viewing data to create suggestions and tailored content.
6.	Predictive Maintenance and Reduced Downtime	Predictive analytics can anticipate equipment issues and plan repairs in advance, reducing downtime and maintenance costs.	By using predictive analytics and Internet of Things sensors to monitor the state of their machines and foresee failures before they occur, industrial companies can ensure continuous operations.
7.	Enhanced Marketing Strategies	Analytics can improve marketing strategies by identifying target audiences, maximizing campaign execution, and measuring ROI more precisely.	Using social media platforms to deliver highly targeted ads based on user data might help businesses make their ads more relevant and effective.
8.	Better Risk Management	Advanced analytics can be used to more precisely identify and minimize threats, improving security and compliance.	Predictive models assess credit risk and spot fraudulent activity, which helps financial institutions manage risk more effectively overall.
9.	Real-Time Business Insights	Real-time analytics enables quick adjustments and adaptable responses to changes in the market by providing immediate insights into business performance.	Using real-time sales data to adjust prices and promotions, retailers can react swiftly to shifts in consumer behavior and competitive movements.
10.	Improved Customer Retention	When developing client retention strategy, analytics can be utilized to identify the reasons behind customer attrition.	Telecom companies analyze customer input and behavior to predict issues and give customized retention packages that reduce turnover.
11.	Competitive Advantage	Businesses can surpass competitors in a variety of ways by utilizing tech-business analytics effectively, such as better consumer insights, more	From inventory management to customer recommendations, retailers like Amazon use deep analytics in many aspects of their operations to remain ahead of the competition.

		efficient operations, and innovative goods and services.	
12.	Development of New Products and Services	The development of new products and services can be guided by data analytics, which can identify market gaps and unfulfilled customer needs.	Technology companies can use user data to assess if new software features or applications are needed, which spurs innovation and aids in their entry into new markets.
13.	Enhanced Collaboration and Partnerships	Potential corporate and joint venture partners may be found with the use of analytics, leading to profitable strategic alliances.	Together, healthcare providers may use analytics and data exchange to enhance patient outcomes and operational efficiencies.
14.	Sustainability and Resource Management	Sustainability objectives can be supported by analytics, which can optimize resource usage and reduce environmental impact.	Companies that generate and distribute energy use data analytics to increase energy efficiency, reduce waste, and improve operations.
15.	Workforce Optimization	In workforce management, analytics can assist boost employer satisfaction, retention, and productivity.	In order to avoid employee burnout and guarantee adequate coverage, call centers utilize analytics to determine peak hours and adjust staffing accordingly.

By taking advantage of these chances to promote innovation, boost productivity, and achieve sustainable growth, businesses in the tertiary industry sector may stay ahead of the competition in a world where data is becoming more and more significant.

8.4 Challenges of Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector:

There are several barriers that could prevent disruptive technologies using tech-business analytics from being successfully implemented and used in the tertiary industrial sector. These are a few significant restrictions:

Table 10: Constraints of Disruptive Innovations Using Tech-Business Analytics in the Tertiary Industry Sector

S. No.	Aspects	Challenges	Example
1.	Data Privacy and Security	Regulation compliance is made more difficult by the significant privacy and security concerns that arise from the collection and use of personal data on a large scale.	Businesses must abide by laws such as the General Data Protection Regulation (GDPR), which imposes strict restrictions on data management and imposes significant fines for noncompliance.
2.	High Implementation Costs	Sophisticated analytics technology, equipment, and skilled personnel may be expensive for small and medium-sized enterprises (SMEs) to initially invest in.	It could be challenging for SMEs to pay for the costs of hiring data scientists, setting up comprehensive analytics tools, and training current staff.
3.	Complexity and Skill Requirements	The specific expertise and skills needed to implement and use sophisticated analytics systems might be difficult for many firms.	Lack of experience and implementation issues may arise from an organization's inability to recruit and retain qualified data scientists and analytics specialists.
4.	Data Quality and Integration Issues	Analytics success depends on high-quality data and data integration from several	Inconsistent patient care analytics can occur when a healthcare provider struggles to integrate data

		sources. When data is inaccurate, incomplete, or divided into silos, it may lead to misleading findings.	and employs different systems for patient information.
5.	Resistance to Change	The reluctance of employees and stakeholders to embrace new technology and processes may stem from their familiarity with those methods.	Employee opposition to implementing advanced analytics technologies that change traditional job responsibilities and workflows may be common in a retail setting.
6.	Ethical and Bias Issues	In particular, analytics systems based on artificial intelligence have the potential to reinforce or reinforce biases in the data. Immoral or unequal outcomes may arise from this.	Due to biased historical data, an AI-driven employment platform may unintentionally favor candidates, leading to discriminatory hiring practices.
7.	Dependence on Data Availability	Analytics systems must have constant access to big data collections. Data flow disruptions or a lack of relevant data can have a major effect on the system's efficacy.	Logistics companies that employ real-time traffic data for route planning may face challenges if communications interruptions result in delays and inefficiency.
8.	Ongoing Maintenance and Upgrades	Advanced analytics systems require frequent maintenance and security updates to be secure and operational, which can require a significant investment of resources.	To incorporate new data sources, algorithms, and security updates, a retail analytics platform could need to be upgraded on a regular basis. This would necessitate a continuous investment in IT resources.
9.	Legal and Regulatory Challenges	In certain firms, the use of advanced analytics may give rise to laws and regulations concerning data usage, privacy, and consumer protection.	Financial institutions that utilize predictive analytics for lending decisions must navigate a complex web of regulations to ensure they don't carry out discriminatory activities or violate consumer protection laws.
10.	Technology Integration Issues	Interruptions may result from the time and effort required to integrate new analytics tools with existing processes and systems.	Should a hospital experiencing problems integrating a new patient data analytics system with its existing electronic health records (EHR) system run into problems, patient care may experience short-term disruptions.
11.	Shortage of High-Quality Data	The effectiveness of analytics depends on high-quality data. Nevertheless, obtaining relevant, accurate, and unambiguous data might be challenging.	A marketing firm may find it difficult to obtain high-quality data regarding consumer behavior because of privacy and data sharing restrictions.
12.	Rapid Technological Changes	Rapid technological change may make it difficult for businesses to keep up, which could lead to analytics systems becoming outdated.	A company that invests heavily in analytics technology may find that it becomes outdated in a few years and needs further cash to upgrade or replace the system.
13.	Ethical Use of Data	If data is collected and analyzed unethically, it could	It is imperative for social media platforms to ensure that user privacy

		lead to a loss of confidence and possible legal repercussions.	and behavior are not compromised when they use user data for targeted advertising.
14.	Cultural and Organizational Barriers	The culture and structure of organizations may make it difficult for analytics-driven innovations to be successfully deployed.	Agile and iterative methods are necessary for many successful analytics projects, but they can be challenging for a hierarchical organization with rigid procedures to adopt.

To overcome these challenges and ensure that disruptive technologies in the tertiary industry sector are successfully implemented and adopted, careful planning, strategic investment, and a strong emphasis on change management are required.

8. SUGGESTIONS :

Using tech-business analytics to implement disruptive technologies can result in significant increases in competitive advantage, customer happiness, and productivity in the tertiary industry sector. Ideas for applying tech-business analytics in this sector include the following:

Table 11: Suggestions on Disruptive Innovation using TBA in Tertiary Industry Sector with example.

S. No.	Aspects	Suggestions	Example
1.	Use AI-Powered Chatbots to Improve Customer Support	Develop and deploy AI-driven chatbots that can respond to common customer service inquiries using natural language processing (NLP). Because these chatbots can respond quickly, human agents may work on more challenging tasks.	Financial services firms can use chatbots to respond to common customer questions about account balances, transaction history, and basic financial advice. Reduced operating costs and more customer satisfaction are possible outcomes of this.
2.	Create Customized Suggestion Engines	Using machine learning algorithms to analyze client data and generate personalized product or service recommendations could increase revenue and improve customer happiness.	Netflix and other streaming services may improve user engagement and retention by improving their recommendation engines to provide more accurate content recommendations based on user viewing preferences and habits.
3.	Make use of dynamic pricing models	To increase profits and market share, use dynamic pricing strategies that use real-time price adjustments based on supply, demand, and other factors.	E-commerce sites can maximize their revenue potential by using dynamic pricing algorithms to immediately adjust product prices during times of high demand, such as holidays or flash sales.
4.	Utilize Predictive Analytics to Manage Inventory	Reduce the frequency of stockouts and overstock by estimating demand and optimizing stock levels with predictive analytics.	Retailers may use predictive models to assess sales data and market trends in order to reduce excess inventory of less popular products while ensuring that popular ones are always available.

5.	Put Predictive Maintenance into Practice in Healthcare	By anticipating equipment failures and planning repair ahead of time, predictive analytics can lower downtime and maintenance costs.	Hospitals can reduce the likelihood of unanticipated faults and ensure that critical medical equipment, like MRI machines, is always in working order by implementing predictive maintenance.
6.	Improve Systems for Fraud Detection	Develop advanced fraud detection systems that use machine learning to identify and halt fraudulent behavior instantaneously.	Machine learning algorithms can be used by banks and other financial organizations to monitor transactions for unusual patterns and alert them to potential fraud, protecting the business and its customers.
7.	Enhance Employee Management	Employee engagement and retention may be improved, talent shortages can be identified, and workforce requirements can be predicted with the use of workforce analytics.	Using predictive analytics, retail chains can forecast peak shopping times and adjust staffing levels to deliver optimal customer service and efficient labor management.
8.	Use Sentiment Analysis to Gain Understanding of Your Customers	Analyze customer feedback from surveys, social media, and reviews using sentiment analysis methods to have a better understanding of customer satisfaction and possible areas for improvement.	To enhance the tourist experience, hospitality businesses can use sentiment analysis to monitor evaluations and mentions from previous guests on social media. As a result, they are able to pinpoint areas for improvement and common problems.
9.	Provide Intelligent Supply Chain Solutions	Combining supply chain management with IoT and advanced analytics can result in smart, responsive logistics networks.	Using IoT sensors and analytics to optimize delivery routes, predict potential disruptions, and track the condition of goods in transit, logistics companies can guarantee efficient and timely deliveries.
10.	Put in place robot advisors, or automated financial advisory services.	Make use of robo-advisors, which use computers to manage portfolios and provide individualized financial advice with minimal human intervention.	For a small portion of the price of typical advisors, investment firms can offer robo-advisory services, which assess market data and individual investment goals to present customers with tailored investment suggestions.
11.	Make Business Decisions Using Real-Time Analytics	Install real-time analytics solutions that enable prompt and informed decision-making by providing immediate insights into the operation of the business.	Real-time sales dashboards allow retailers to monitor performance across several locations and quickly adjust their inventory levels or marketing strategies.

12.	Use Predictive Analytics to Strengthen Marketing Plans	Identify target consumers, improve marketing campaigns, and use predictive analytics to evaluate their effectiveness in order to optimize return on investment.	In order to improve conversion rates and client acquisition, e-commerce businesses can utilize predictive models to analyze consumer behavior and segment audiences for targeted advertising campaigns.
13.	Create Health Monitoring and Healthcare Predictive Solutions	Use predictive analytics and wearable technology to monitor patients' health in real-time and foresee potential issues in order to deliver proactive healthcare.	With wearable medical equipment from healthcare providers, which tracks vital signs and utilizes predictive analytics to identify early warning symptoms of chronic illnesses, better patient outcomes and early intervention are conceivable.
14.	Install Intelligent Systems for Customer Feedback	Automate customer feedback analysis with AI and machine learning to generate insights that could be applied to better products and services.	Intelligent feedback systems can be used by restaurants to analyze customer reviews and comments and identify trends and areas for improvement in order to enhance the dining experience.
15.	Make Energy Management Better with Analytics	Enhance energy management and utilization with analytics to cut costs and advance sustainable objectives.	Installing energy management systems in business buildings can help analyze usage patterns and regulate heating, cooling, and lighting to save energy costs.

By following these suggestions, companies in the tertiary industry sector can use tech-business analytics to maintain a competitive edge in the market, foster innovation, increase productivity, and enhance customer experience.

9. CONCLUSIONS :

Hence, disruptive concepts that use tech-business analytics have the potential to revolutionize the tertiary industry sector. Companies may maintain a competitive edge and achieve long-term growth by improving customer satisfaction, increasing operational effectiveness, and supporting data-driven decision-making. The associated challenges and ethical quandaries must be resolved for these advancements to be successfully used and to yield long-term benefits.

REFERENCES :

[1] Kumar, S., & Aithal, P. S. (2024). Tech Business Analytics in Quaternary Industry Sector. *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, *8*(2), 69-159. Google Scholar↗

[2] Kumar, S., & Aithal, P. S. (2024). Tech-Business Analytics in the Circular Economy. *International Journal of Management, Technology and Social Sciences (IJMTS)*, *9*(2), 173-201. Google Scholar↗

[3] Komolafe, A. M., Aderotoye, I. A., Abiona, O. O., Adewusi, A. O., Obijuru, A., Modupe, O. T., & Oyeniran, O. C. (2024). Harnessing business analytics for gaining competitive advantage in emerging markets: a systematic review of approaches and outcomes. *International Journal of Management & Entrepreneurship Research*, *6*(3), 838-862. Google Scholar↗

[4] Kumar, S., & Aithal, P. S. (2024). Tech-Business Analytics in Blue Economy. *International Journal of Applied Engineering and Management Letters (IJAEML)*, *8*(2), 156-185. Google Scholar↗

[5] Ejibe, I., Nwankwo, T. C., Nwankwo, E. E., Okoye, C. C., & Scholastica, U. C. (2024). Advancing environmental sustainability in the creative sectors: A strategic HR framework based on data analytics and eco-innovation. *World Journal of Advanced Research and Reviews*, *21*(3), 050-060. Google Scholar↗

[6] Javanmardi, E., Maresova, P., Xie, N., & Mierzwiak, R. (2024). Exploring business models for managing uncertainty in healthcare, medical devices, and biotechnology industries. *Heliyon*. *1*(2), 150-160 Google Scholar↗

[7] Chen, Z. (2024, May). How Tax Competition Affects the Transformation of Innovations in High-Tech Industries: Based on Provincial Panel Data. In *Proceedings of the 4th International Conference on Informatization Economic Development and Management, IEDM 2024, February 23–25, 2024, Kuala Lumpur, Malaysia*. Google Scholar↗

[8] Raqib, M., & Khandekar, A. (2024). Innovative Pathways to Social Transformation: Disruptive Maintenance Through Social Impact Start-ups in Kerala. *Science, Technology and Society*,2(2), 38-79. Google Scholar↗

[9] Lu, T., & Li, H. (2024). Can China's Regional Industrial Chain Innovation and Reform Policy Make the Impossible Triangle of Energy Attainable? A Causal Inference Study on the Effect of Improving Industrial Chain Resilience. *Energies*, *17*(10), 1-31. Google Scholar↗

[10] Kamau, L., & Aduda, J. (2024). The Effect of Financial Technologies on Financial Inclusion in Kenya. *Journal of Economics, Finance and Business Analytics*, *2*(1), 45-57. Google Scholar↗

[11] Kumar, S., & Aithal, P. S. (2024). Tech Business Analytics in Quaternary Industry Sector. *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, *8*(2), 69-159. Google Scholar↗

[12] Komolafe, A. M., Aderotoye, I. A., Abiona, O. O., Adewusi, A. O., Obijuru, A., Modupe, O. T., & Oyeniran, O. C. (2024). Harnessing business analytics for gaining competitive advantage in emerging markets: a systematic review of approaches and outcomes. *International Journal of Management & Entrepreneurship Research*, *6*(3), 838-862. Google Scholar↗

[13] Ejibe, I., Nwankwo, T. C., Nwankwo, E. E., Okoye, C. C., & Scholastica, U. C. (2024). Advancing environmental sustainability in the creative sectors: A strategic HR framework based on data analytics and eco-innovation. World Journal of Advanced Research and Reviews, 21(3), 050-060. Google Scholar↗

[14] Javanmardi, E., Maresova, P., Xie, N., & Mierzwiak, R. (2024). Exploring business models for managing uncertainty in healthcare, medical devices, and biotechnology industries. *Heliyon*.1(1), 43-69. Google Scholar↗

[15] Preißner, S., Raasch, C., & Schweisfurth, T. (2024). When necessity is the mother of disruption: Users versus producers as sources of disruptive innovation. *Journal of Product Innovation Management*, *41*(1), 62-85. Google Scholar↗

[16] Ahmed, J. U. (2024). Sofia Tech: Driving innovation through engineering excellence and IT solutions in Tunisia. *Journal of Information Technology Teaching Cases*,3(2).41-67, Google Scholar↗

[17] Aithal, S., & Aithal, P. S. (2024). Information Communication and Computation Technologies (ICCT) for Agricultural and Environmental Information Systems for Society 5.0. *International Journal of Applied Engineering and Management Letters (IJAEML)*, *8*(1), 67-100. Google Scholar↗

[18] Kaur, J. (2024). Tech Unleashed: The Influential Power of Artificial Intelligence on Venture Capital and Startups. In *Fostering Innovation in Venture Capital and Startup Ecosystems*, IGI Global. 2(1), 219-241 Google Scholar↗

[19] Kumar, S., & Aithal, P. S. (2023). Tech-Business Analytics in Primary Industry Sector. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, *7*(2), 381-413. Google Scholar↗

[20] Kumar, S., & Aithal, P. S. (2023). Tech-Business Analytics–a New Proposal to Improve Features and Quality of Products and Services in Various Industry Sectors–An Explorative Study. *International Journal of Management, Technology and Social Sciences (IJMTS)*, *8*(2), 53-70. Google Scholar↗

[21] Kumar, Sachin. & Krishna Prasad, K. (2019). Modified Location Model Estimation using Content-Based Medical Image Retrieval. *International Journal of Management, Technology, and Social Sciences (IJMTS), 4(2), 36-45.* Google Scholar↗

[22] Devanshu Dube, Sachin Kumar, Santosh Kumar Gupta, (2021). An Empirical study of the IoT arrhythmia detection methods: Review and research gaps. *International Conference on Computer Communication and Informatics (ICCCI).* Conference Paper, Publisher: IEEE Google Scholar↗

[23] Sachin Kumar, Devanshu Dube, Krishna Prasad, K. & Aithal, P. S. (2020). Emerging Concept of Tech- Business-Analytics an Intersection of IoT & Data Analytics and its Applications on Predictive Business Decisions. *International Journal of Applied Engineering and Management Letters (IJAEML), 4*(2), 200-210. Google Scholar↗

[24] Kumar, S., Krishna Prasad, K., & Aithal, P. S., (2023). Tech-Business Analytics in Primary Industry Sector. *International Journal of Case Studies in Business, IT, and Education (IJCSBE), 7*(2), 381-413. Google Scholar↗

[25] Kumar, S., Krishna Prasad, K., & Aithal, P. S., (2022). Technology for Better Business in Society. *International Journal of Philosophy and Languages (IJPL), 1*(1), 117-144. Google Scholar↗

[26] Aithal, P. S., & Kumar, P. M. (2015). Applying SWOC analysis to an institution of higher education. *International Journal of Management, IT and Engineering*, *5*(7), 231-247. Google Scholar↗

[27] Mallik, D. A., & Aithal, P. S. (2024). SWOC Analysis: Impact of Methodological Changes in Top 20 NIRF-ranked Management Institutions on Branding Strategy. *International Journal of Applied Engineering and Management Letters (IJAEML), 8*(2), 17-38. Google Scholar↗

[28] Venkata Lakshmi Suneetha M., Aithal, P. S. (2024). Unlocking Potential in the Chemical Industry Sector: An Innovative SWOT Analysis Study. *International Journal of Case Studies in Business, IT and Education (IJCSBE), 8*(2), 260-270. Google Scholar↗

[29] Aithal, P. S., & Aithal, S. (2023). Incubationship – A Systematic Analysis of Recently Announced Super Innovation in Higher Education using SWOC, ABCD, and PESTL Frameworks. *International Journal of Case Studies in Business, IT, and Education (IJCSBE), 7*(4), 48-90. Google Scholar↗

[30] Aithal, P. S., & Aithal, S. (2019). New Directions in Scholarly Research–Some Fearless Innovations & Predictions for 21st Century Research. *International Journal of Management, Technology, and Social Sciences (IJMTS), 4*(1), 1-19. Google Scholar↗

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