

INFLUENCE OF ACCOUNTING DIGITISATION AND TECHNOLOGY 4.0 IN THE WELLNESS INDUSTRY IN THE POST-COVID ERA

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Abstract

The COVID-19 pandemic has significantly impacted the wellness industry, accelerating the shift toward digital transformation in accounting practices. This paper examines the impact of technology, including cloud-based accounting software, data analytics, and artificial intelligence, on financial management and reporting in wellness centers. During lockdowns, businesses adapted to changing consumer preferences by implementing digital solutions to maintain operations and financial stability. The findings reveal that this transformation has enhanced efficiency, transparency, and customer engagement, enabling wellness centres to not only survive the pandemic but also position themselves for future growth. However, challenges such as data security concerns and the need to upskill the workforce are also acknowledged. Ultimately, the study emphasizes the importance of embracing digital transformation in accounting for wellness centres to thrive in a digitized world, alongside discussions on telemedicine, virtual health services, and wellness apps.

Keywords:- Wellness industry, Digital transformation, Technology 4.0, Digital accounting, COVID-19

The COVID-19 pandemic caused significant disruptions in the global economy, prompting businesses to adapt to remote work and find innovative solutions for survival. In the post-pandemic era, digital transformation and

Technology 4.0 are key drivers of growth in the wellness industry. The Indian health and wellness market, valued at USD 156.0 billion in 2024, is projected to reach USD 256.9 billion by 2033, with a CAGR of 5.3 per cent from 2025 to 2033 (IMARC, 2024). Asia Pacific is the largest regional

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market, accounting for an estimated 1.5 trillion U.S. dollars.

The pandemic highlighted the shift toward preventive, holistic wellness encompassing both mental and physical health. According to Numb Research, India's 443 million millennials spend an average of Rs 4000 per month on health and wellness services. The government's support for traditional Indian medical knowledge, exemplified by the Ministry of AYUSH, further promotes this sector. Future trends will focus on products catering to various lifestyles and dietary needs, including Keto and immunity-boosting options.

2. Review of Literature

The COVID-19 pandemic significantly accelerated the adoption of Industry 4.0 technologies - such as the Internet of Things (IoT), artificial intelligence (AI), big data, blockchain, cloud computing, and cyber-physical systems - for managing public health and wellness. A meta-analysis indicates that these technologies are essential for enhancing healthcare resilience, improving supply chain efficiency, and ensuring digital transparency (Ahsan & Siddique, 2022). Comprehensive reviews emphasize the role of AI-enabled IoT in providing personalized and continuous care. Additionally, security vulnerabilities and system resilience are critically evaluated (Taimoor & Rehman, 2022).

COVID-19 acted as a catalyst for the deployment of IoT across healthcare and related sectors, reinforcing digital monitoring and remote wellness services (Umair et al., 2021). Technologies like IoT, big data, blockchain, and additive

manufacturing have improved resilience in healthcare supply chains, which is particularly crucial during disruptions such as COVID-19 (Reza et al., 2022). However, the adoption of Industry 4.0 among small and medium enterprises (SMEs) in India faces various barriers, including high costs, a lack of skills, and cybersecurity issues, reflecting similar challenges in the wellness sector (MDPI review, 2023).

In India, the healthcare sector demonstrates strong adoption of digital platforms, exemplified by initiatives like the Ayushman Bharat Digital Mission. Nevertheless, challenges remain regarding the integration of services across public and private systems (Journal of Egyptian Public Health, 2024).

3. Statement of the Problem

The COVID-19 pandemic disrupted the wellness industry, forcing rapid adoption of digital platforms and technologies for continuity and sustainability. However, the effects of accounting digitization and Technology 4.0 on financial management and service delivery in this sector, particularly in India, remain underexplored. This study aims to investigate how these digital advancements have transformed accounting practices, improved customer engagement, and aided the industry's recovery and growth in the post-pandemic era.

4. Scope of the Study

This study explores the impact of accounting digitization and Technology 4.0 on India's wellness industry in the post-COVID era. It focuses on how digital transformation has affected financial management, operations, and service

delivery in wellness businesses such as fitness centers, wellness apps, and telemedicine platforms. Based entirely on secondary data - government reports, industry publications, and scholarly articles - the findings are contextualized within the Indian wellness sector and include references to global trends for analysis.

5. Significance of the Study

This study highlights how accounting digitization and Technology 4.0 are reshaping the wellness industry in post-COVID India. By examining technologies like cloud accounting, artificial intelligence, and telemedicine, it sheds light on the ongoing digital transformation in wellness businesses. The findings are valuable for stakeholders, including wellness practitioners and entrepreneurs seeking efficient, customer-focused practices, accounting professionals aiming to modernize financial systems, policymakers developing supportive regulations, and academics looking for a foundation for further research into digital transformation in service industries.

6. Objective of the Study

To study the digital transformation of the wellness industry in the post-COVID era in India

7. Methodology

This study adopts a descriptive research design to explore the influence of accounting digitization and Technology 4.0 on the wellness industry in India during the post-COVID era. The focus is on identifying emerging trends, assessing technological integration, and understanding the role of digital transformation in shaping financial and operational practices within the sector.

7.1 Research Design

The research is qualitative and exploratory, aiming to provide a structured description and interpretation of the digital transformation observed in the wellness industry. It emphasizes thematic and content-based insights rather than numerical analysis, making it suitable for conceptual exploration.

7.2 Data Sources

The study is based entirely on secondary data, collected from a wide range of authoritative and credible sources: Annual reports from the Ministry of Health and Family Welfare and the Ministry of Tourism, Government of India, published research articles, academic journals, and white papers on digital transformation, accounting digitization, and wellness technologies, data and insights from government portals such as the AYUSH Ministry, Goods and Services Tax (GST) website, and other public resources, Industry market research reports (e.g., IMARC) and reputable online databases covering Technology 4.0 applications.

7.3 Sampling Technique

A purposive sampling technique was employed to select relevant secondary sources that provide in-depth insights into the adoption of digital tools in wellness businesses, accounting technology trends in the post-pandemic era, use of AI, IoT, wearables, and telemedicine in service delivery and financial management. The selection of sources was guided by relevance, credibility, and data richness.

7.4 Analytical Tools Used

The following tools and techniques were used:

- i. **Thematic Analysis:** To identify key themes such as digital accounting, customer personalization, and virtual service delivery.
- ii. **Content Analysis:** Applied to reports and academic literature to extract data points, conceptual trends, and implications.
- iii. **Comparative Review:** Used to contrast traditional vs. digitized approaches in the wellness industry before and after COVID-19.

8. Discussion

8.1 The Transition of the Wellness Industry

The wellness industry, traditionally linked to gyms and nutritional supplements, is evolving to meet the demands of consumers seeking a holistic approach to well-being, including physical, mental, and emotional health. This transformation is largely driven by Technology 4.0, which offers new opportunities:

- a. **Personalization and Data-Driven Insights:** Wearable devices and health apps provide tailored recommendations and programs based on individual data, enhancing effectiveness in wellness strategies.
- b. **Telemedicine and Virtual Care:** Telemedicine has increased access to healthcare professionals, allowing individuals to seek medical advice and mental health support remotely.

c. **Artificial Intelligence and Predictive Health:** AI is transforming healthcare by predicting health outcomes and identifying risks, enabling early disease detection, and more effective chronic disease management.

d. **Wellness Ecosystems:** Technology promotes integrated wellness ecosystems that combine fitness apps, nutrition programs, and mental health services for a comprehensive health experience.

e. **Digital Therapeutics:** Evidence-based apps for stress management and other mental health challenges are gaining traction as effective solutions.

f. **Remote Fitness and On-Demand Wellness:** Virtual fitness classes provide convenience and flexibility for users to engage in wellness activities at home.

g. **Blockchain for Health Data Security:** Blockchain technology enhances the security and integrity of health data, ensuring it remains trustworthy and protected against breaches.

8.2 The Digital Transformation Imperative

The wellness industry had to reevaluate its business models during the pandemic as social distancing measures became the norm. While many businesses temporarily closed, this crisis spurred innovation.

- i. **Telemedicine and Remote Services:** The rise of telemedicine led to virtual fitness classes and online therapy. Accountants played a key role in adapting financial systems for these changes.
- ii. **E-commerce Integration:** The e-commerce boom enabled wellness businesses to sell products and services online. Accountants helped implement software that streamlined transactions and enhanced financial visibility.
- iii. **Cloud-Based Accounting:** Many wellness businesses shifted to cloud-based accounting, allowing secure access to financial data from anywhere, improving decision-making and collaboration with accounting professionals.

8.3 The Role of Technology 4.0

The Fourth Industrial Revolution often referred to as Technology 4.0, represents a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), and other disruptive technologies. The wellness industry has started embracing these innovations to enhance customer experiences and streamline operations.

- i. **Wearable Devices:** Include smartwatches, fitness bands, and biosensors that track activity, heart rate, sleep, and stress levels. They provide real-time health insights and promote proactive wellness. Examples include Apple Watch, Fitbit, and Oura Ring.
- ii. **Artificial Intelligence (AI):** Analyzes health data to deliver

Figure 1
Technology 4.0 for Wellness



Source: - Alorica Insights

personalized wellness recommendations and detect anomalies. Used in virtual wellness assistants and predictive diagnostics. Examples include therapy chat bots like Woebot and AI fitness coaches.

- iii. **Internet of Things (IoT):** Connects wellness devices and environments, such as smart home systems that optimize conditions for better sleep and connected gym equipment that syncs with apps. Examples include smart beds and exercise bikes.
- iv. **Big Data & Analytics:** Collects and processes wellness data to identify trends, predict health risks, and customize programs. Supports population health insights for organizations. Examples include health dashboards and corporate wellness analytics.
- v. **Virtual & Augmented Reality (VR/AR):** Creates immersive wellness experiences like guided meditation and virtual fitness classes, used in rehabilitation and mental health therapies. Examples include VR yoga apps and PTSD simulations.
- vi. **Blockchain:** Ensures secure handling of health data, allowing for better privacy and trust in digital wellness. Examples include decentralized health records and wellness reward platforms.

8.4 Financial Wellness and Business Sustainability

In the after-pandemic era, businesses in the wellness industry have learned that

financial wellness is just as important as physical and mental wellness. Digital transformation and Technology 4.0 have not only provided ways to adapt to crises but have also positioned these businesses for long-term sustainability and growth.

- i. **Improved Financial Visibility:** The integration of digital technologies and cloud accounting systems gives wellness businesses real-time insights into their financial health, enabling data-driven decisions.
- ii. **Cost Reduction:** Technology 4.0 enhances efficiency and automation, lowering operational costs. Accountants can track these savings and identify further improvement opportunities.
- iii. **Enhanced Revenue Streams:** E-commerce and personalized services have created new revenue opportunities for wellness businesses. Accountants can evaluate the profitability of these avenues and refine financial strategies accordingly.

9. Findings & Inferences

- *E-Commerce Growth:* India’s e-commerce market reached \$147.3 billion in 2024, with an 18.7 per cent CAGR through 2028, fueled by innovations like AI and blockchain enhancing shopping experiences. (en.wikipedia.org)
- *Digital Health Sector:* Projected to generate \$5.34 billion by 2024, India’s digital health sector, growing at 13.14 per cent, will reach \$9.90 billion by 2029, with Digital Fitness leading. (statista.com)

- *Wearable Technology Market*: Expected to grow from \$3.19 billion in 2024 to \$9.55 billion by 2030, with a CAGR of 19.4 per cent.
- *Fitness Trends*: In 2023, over 90 million people used fitness apps, and gym memberships rose to 12 million, contributing to a \$2 billion industry. (grandviewresearch.com)
- *Service Expansion*: In Telangana, telemedicine services have aided 22.3 million people, growing from 5.3 million users in 2022–23 to a projected 8.7 million by March 2025. (marketresearch.com)
- *Urban Initiatives*: Nagpur's telemedicine initiative provided free consultations to 1,821 patients in three months, showcasing effective virtual healthcare. (timesofindia.indiatimes.com)
- *AI in Healthcare*: Expected to reach \$1.6 billion by 2025, AI in healthcare will grow at a CAGR of 40.6 per cent. (economictimes.indiatimes.com)
- *Operational Efficiency*: Generative AI is predicted to boost healthcare efficiency by 30–35 per cent in various operational areas. (ey.com)
- *Hospital Adoption*: Apollo Hospitals plans to invest more in AI to reduce staff workloads by automating routine tasks. (reuters.com)
- *AI Adoption in BFSI*: The banking sector leads in AI with a 68 per cent adoption rate in FY24, indicating a trend towards digitization. (economictimes.indiatimes.com)

- *Digital Payment Growth*: Digital payments grew by 23.8 per cent, driven by UPI, highlighting India's transition to a cashless economy. (en.wikipedia.org)

10. Suggestions

- There's a shift from reactive digitization to strategic integration of digital technologies for long-term value. Rapid adoption of Technology 4.0 tools like AI, cloud accounting, wearables, and telemedicine is essential.
- Develop sector-specific digital adoption roadmaps with government bodies like the Ministry of AYUSH and promote digital skill development on tools like Tally and QuickBooks while prioritizing cybersecurity.
- Establish government-backed grants, low-interest loans, or tax incentives for wellness start-ups and MSMEs investing in digital infrastructure, including accounting digitization and telehealth platforms.
- Encourage partnerships between tech companies and wellness providers to co-develop integrated platforms that bundle services like fitness tracking, remote consultations, billing, and data analytics.
- Invest in integrating technology, offering incentives for small to medium wellness businesses to transition to digital platforms. Enhance customer-centric services and expand remote and hybrid service models to reach a wider audience.

11. Conclusion

Digital transformation and Technology 4.0 have not only allowed the wellness industry to survive the pandemic but also to thrive in the after-pandemic era. Businesses that embrace these changes, and accountants who play an integral role in their implementation, are well-positioned to meet the evolving demands of the market and ensure long-term

financial wellness and sustainability. As the wellness industry continues to evolve, the influence of technology in accounting and finance will be pivotal in shaping its future. The post-pandemic wellness industry is likely to be more accessible, personalized, and technologically advanced than ever before, and these changes are poised to improve the health and well-being of people around the world.

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