

INNOVATION AND TRANSFORMATION FOR THE SUSTAINABLE DEVELOPMENT OF HEALTH CARE SERVICES IN BUSINESS AND SOCIETY

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Abstract:

In an era of rapid advancement of digital technologies, the transformative & dynamic change and adaptation to such changes can also be seen in the context of health care sector. This research paper investigates the pivotal role of innovation and transformation in promoting sustainable development within the health care sector. As the healthcare landscape undergoes rapid changes, there is a growing need to integrate innovative strategies and transformative approaches to enhance both business efficiency and societal well-being.

Healthcare innovation is valuable as it can lead to better patient care, improved population health, and lower healthcare costs. Healthcare innovations can improve patient outcomes by providing new and better treatment options, making it easier for patients to access care, and improving care coordination. This study therefore investigates the digital transformation of the healthcare services. The digital transformation of the healthcare industry in India is ongoing with several initiatives aimed at leveraging technology to improve healthcare services. The paper explores the intersection of innovation, business transformation, and sustainable development specifically within the context of health care services.

Keywords: *Healthcare, Innovation, Digitalization, Business Transformation, Sustainable Development.*

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Introduction:

The healthcare landscape in India has been dynamic, witnessing significant changes and challenges. India has a dual healthcare system with both public and private healthcare providers. Public healthcare facilities are often strained, leading many to seek services from private hospitals and clinics. India has a diverse healthcare infrastructure, ranging from well-equipped urban hospitals to basic healthcare facilities in rural areas. Disparities exist in healthcare infrastructure between urban and rural regions, leading to challenges in access to quality healthcare services.

India faces a high burden of communicable diseases like tuberculosis and vector-borne diseases like malaria and dengue. Non-communicable diseases (NCDs) like diabetes and cardiovascular diseases are contributing to the overall disease burden. Maternal and child health remain significant priorities, with efforts to improve antenatal care, immunization, and nutrition programs. Maternal mortality rates have seen improvements, but challenges persist in reducing infant mortality rates. The healthcare landscape has witnessed increased awareness and adoption of health insurance schemes. Government-led initiatives and private insurers aim to improve financial access to healthcare services for a larger population. Digital health initiatives, including telemedicine, have

gained momentum, especially in response to the COVID-19 pandemic. The Government of India has launched various healthcare initiatives, including Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (PM-JAY), which aims to provide financial protection for secondary and tertiary care hospitalization. National Health Mission (NHM) continues to focus on improving primary healthcare and maternal and child health. Challenges in the healthcare landscape include inadequate healthcare infrastructure, shortage of healthcare professionals, and disparities in healthcare access. Limited healthcare awareness and education, especially in rural areas, contribute to delayed healthcare seeking behaviour. The landscape is likely to continue evolving with advancements in technology, policy interventions, and collaborative efforts from public and private stakeholders. Teleconsultations and mobile health applications are becoming more prevalent, improving access to healthcare services. India is a major player in the global pharmaceutical industry, known for producing generic medicines. The pharmaceutical sector has been instrumental in providing affordable. medications, both domestically and internationally.

Objectives of the Study:

This Study help to understand the role of digital technology and synergies between innovation, transformative strategies adopted by healthcare businesses, and their impact on sustainable development in broader societal and environmental contexts. This study shows how healthcare services committed to sustainability contribute to societal well-being, including improved health outcomes, community development, and equitable access to healthcare.

1. To Investigate how innovation, including technological advancements and novel healthcare delivery models, have led to sustainable development outcomes.
2. To Analyze how transformative changes in the business models, organizational structures, and processes of healthcare entities can enhance sustainability in terms of economic viability and efficiency.

Hypothesis of the study:

1. **H₁:** There is significant relationship between innovation, including technological advancements and novel healthcare delivery models, and sustainable development outcomes in the healthcare sector.
H₀: There is no significant relationship between innovation, including technological advancements and novel healthcare delivery models, and sustainable development outcomes in the healthcare sector.
2. **H₁:** There is a significant positive association between transformative changes in the business models, organizational structures, and processes of healthcare entities and sustainability in terms of economic viability and efficiency.
H₀: There is no significant association between transformative changes in the business models, organizational structures, and processes of healthcare entities and sustainability in terms of economic viability and efficiency.

Research Methodology

The research design is mainly descriptive. This conceptual framework provides a structured approach to understand and investigate the relationships among innovation, technological advancements, novel healthcare

delivery models, and sustainable development outcomes in terms of economic viability and efficiency in relation to the healthcare sector. It sets the stage for empirical research to test and validate these relationships, contributing to the growing body of knowledge in healthcare management and policy.

Conceptual framework:

1. To explore the relationships between innovation, technological advancements novel healthcare delivery models and sustainable development outcomes in healthcare.

Independent variables: Innovation, Technological advancement, Novel healthcare delivery model such as patient centred medical homes, telemedicine and integrated care system.

Dependent variables: sustainable development outcome, technological acceptance & financial incentive.

2. To explore the association between transformative changes in healthcare entities and sustainability in economic viability and efficiency.

Independent variables: Innovation, Technological advancement, Novel healthcare delivery model such as patient centred medical homes, telemedicine and integrated care system.

Dependent variables: Improvement in financial health, profitability ratios, cost effective metrics, resource allocation effectiveness, operational efficiency, employee satisfaction, sustainable development outcome, technological acceptance & financial incentive.

Sample size: 80 respondents

Sample design

The researcher collected data from patients using technology to assess health care facilities using Convenience and Snowball sampling. After collecting 85 questionnaires filled by various respondents, 80 questionnaires were used for further analysis.

Tools used for the Study.

Simple statistical tools, percentages, and weighted Mean Scores are used for data interpretation and analysis.

Review of Literature:

Digital India was an initiative taken by the Government of India for providing high-speed internet networks to rural areas. Digital India Mission was launched by PM Narendra Modi on 1st July 2015 as a beneficiary to other government schemes including Make in India, Bharatmala, Sagarmala, Startup India, BharatNet, and Standup India. The Government has taken up many initiatives under the Digital India campaign.¹ **E-Hospitals** is a Hospital Management Information System (HMIS) which is a one-stop solution in connecting patients, hospitals and doctors through a single digital platform. Till February 2021, as many as 420 e-Hospitals had been established under the Digital India campaign.

Mukherjee Kanchan (2021): A scoping review of published peer-reviewed literature from the Scopus database was performed on healthcare innovations in India in the last 26 years (1996-2021). The review found that the concept of healthcare innovation was not uniform across these studies. Theory building studies and studies on the healthcare innovation ecosystem and policies have been limited. The studies identified changes in design,

¹ <https://digitalindiainsight.com/9-pillars-of-digital-india/>

services, products, technology, organization, system interaction and conceptual elements as innovations. Healthcare innovations are important in public health, clinical practice, pharmaceuticals, medical devices and Indigenous System of Medicine (ISM) but are affected by the international and national policies affecting the ecosystem. The need for inclusive and convergent innovation as a driver for equity and increasing the translational rate of healthcare technologies also emerges from the analysis. The review identified research gaps and proposed key areas for future research across different domains of healthcare innovation.

Jha, A.K., & DesRoches, C.M (2017): This paper investigates the relationship between regulation and innovation landscape in healthcare. It discusses how regulatory frameworks shape the adoption of innovative technologies and influence the overall trajectory of healthcare innovation.

Gambardella, (2010) The application of business model innovation in other sectors, such as high tech and production, has increased in recent years. Author has been focusing on business model innovations that lead to better commercialization of the product and technological innovations.

Amit & Zott, (2010): The design of transaction content, structure and governance to create value through the exploitation of business opportunities. The business model can also be seen to define the structure of the value chain as the set of activities from raw materials through to the final consumer with value being added throughout the various activities.

Data Analysis and Interpretation:

The data collected from primary sources are presented, analyzed, and interpreted with reference to the study's hypothesis. It has findings based on simple statistical tools and hypothesis testing.

Positive relationships, indicate that a supportive regulatory environment and financial incentives moderate the impact of innovation, drive the development of novel healthcare delivery models through technological advancements. The adoption of novel healthcare delivery models contributes to sustainable development outcomes have facilitated the emergence of new healthcare delivery models.

Positive relationship, indicating that transformative changes in business models are associated with improved economic viability, suggesting that transformative changes in business models positively influence efficiency, implying that transformative changes in organisational structures are associated with improved economic viability and efficiency resulting in employee satisfaction and technology integration relating to transformative changes and sustainability outcomes.

Impact of the Digitalisation/Innovation/Telemedicine on access to health care services

The study deals with the examination of the level of impact of the Digitalisation of health care services on the well-being of respondents and their social life. The impact of Digitisation was evaluated on 13 parameters and final outcomes are presented in Table: 1

Table 1: Level of Impact of Digitization/Innovation/Telemedicine on Respondents
SA: Strongly Agree, AG: Agree, N: Neutral, DA: Disagree, SDA: Strongly disagree

| Constructs related to Activities of Impact | SA | AG | N | DA | SDA | Weighted Mean |
|--|----|----|----|----|-----|---------------|
| Comfort and Convenience | 44 | 12 | 16 | 4 | 4 | 4.1 |
| Improvement in health and well being | 34 | 30 | 4 | 8 | 4 | 4.025 |
| Improvement in Confidence level | 44 | 12 | 16 | 4 | 4 | 4.1 |
| Networking and Collaboration | 34 | 24 | 14 | 4 | 4 | 4 |
| Community development | 20 | 10 | 17 | 20 | 13 | 3.05 |
| Social life | 34 | 24 | 14 | 4 | 4 | 4 |

Out of all ,80 respondents using digital applications were asked to rate the activities showing impact on their lives on five-point Likert scale, the impact level has been analyzed by calculating the weighted mean. This could lead to Community Development but the Procurement of medicines using telemedicine was a challenge which needs to be addressed.

Hypothesis testing:

The weighted average mean score of all constructs is greater than 3 hence null hypothesis is rejected. The alternate hypothesis that there is significant relationship between innovation, including technological advancements and novel healthcare delivery models, and sustainable development outcomes in the healthcare sector is accepted.

Conclusions:

Digitalization and the use of digital technologies have emerged as powerful tools for advancing sustainable development worldwide. The integration of digital solutions holds the potential to address many of the complex challenges outlined in the United Nations' Sustainable Development Goals (SDGs). These technologies enable improved access to information, healthcare, education, and financial services, while also fostering innovation and economic growth. Moreover, digitalization can enhance environmental sustainability, increase efficiency, and provide valuable data for informed decision-making in various sectors. The integration of digitalization with health care services will improve overall quality of life. The ripple effect of digitalization on Health-care services extends to families, communities, and society, creating a more inclusive and equitable environment.

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