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Contemporary Issues in Social Science, Commerce and Management Research
Volume II

Editors:

Dr. Akhil Joshi
Dr. Abhishek Mishra
Ms. Shilpa Thakur
Dr. Sapna S. Kasliwal

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PREFACE

The ever-evolving landscape of social science, commerce, and management necessitates continuous exploration and dialogue. Contemporary Issues in Social Science, Commerce and Management Research Volume II is an earnest endeavor to provide readers, scholars, and practitioners with a comprehensive understanding of the current trends, challenges, and opportunities across these interrelated disciplines. This volume builds upon the foundation laid in the first edition and seeks to present research that is not only theoretically sound but also practically relevant.

The contributions in this volume reflect a diverse spectrum of topics, ranging from socio-economic studies and organizational behavior to emerging trends in digital commerce and sustainable management practices. By integrating empirical research with conceptual insights, the book aims to highlight the multifaceted nature of contemporary issues and the dynamic interplay between theory and practice. The chapters are authored by experienced academicians, industry practitioners, and emerging researchers, bringing together a rich mosaic of perspectives and experiences.

In today's globalized and technology-driven world, the relevance of interdisciplinary research cannot be overstated. Social scientists provide insights into human behavior, societal dynamics, and policy implications; commerce scholars address the ever-changing business environment; while management research offers strategies for leadership, innovation, and organizational efficiency. This volume underscores the importance of cross-disciplinary dialogue and evidence-based decision-making, offering readers a nuanced understanding of the factors shaping the contemporary social and economic environment.

We believe that this book will serve as a valuable resource for postgraduate students, researchers, educators, and professionals seeking to understand and address the complexities of the modern world. It encourages critical thinking, fosters innovative ideas, and promotes informed discussion on pressing issues that impact society, business, and governance.

We extend our heartfelt gratitude to all contributors for their dedication and scholarly rigor. Their research and insights have made this compilation possible. We also acknowledge the efforts of reviewers and the editorial team for ensuring the quality and coherence of this volume.

- Editors

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INNOVATION AND INFLUENCE: THE ROLE OF ENTREPRENEURS IN SHAPING THE INTERNATIONAL POLITICAL ECONOMY

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Abstract:

In today's whirlwind of technological breakthroughs and interconnected global markets, entrepreneurs are the driving force behind innovation and influence in the international political economy (IPE). This chapter explores how entrepreneurial ventures from gritty start-ups to world-changing multinationals are reshaping economies, steering policy decisions, and shaking up traditional power structures. Drawing on perceptions from neoliberalism, institutionalism, and global capitalism, it unpacks the dynamic dance between entrepreneurship and the global system. It also dives into how these innovators engage with governments, international organisations, and local communities, not just as business builders but as key players in shaping policies and institutions. While it celebrates their transformative potential, the chapter doesn't gloss over the challenges, like widening inequality, regulatory gaps, and the risks of concentrated power. In the end, it delivers a clear-eyed viewpoint on how entrepreneurship interweaves with global governance, economic diplomacy, and development, offering valuable insights for scholars, policymakers, and practitioners trying to navigate this ever-evolving world.

Keywords: International Political Economy, Entrepreneurship, Innovation, Global Governance, Economic Diplomacy

1. Introduction:

Entrepreneurship is about sighted opportunities, gathering resources, and creating new businesses that bring actual value, either economic, social, or both. It's an aggressive process that needs risk-taking, innovative problem-solving, and acute decision-making (Drucker, 1985; Shane & Venkataraman, 2000). Entrepreneurship innovation is about developing new products, services, processes, or business models that disrupt current systems or create completely new markets (Schumpeter, 1934). International Political Economy (IPE) is a discipline that explores how politics and economics intersect and influence one another on an international platform (Frieden and Martin, 2002). Push-and-pull between political actors such as governments and institutions and economic forces, including markets, corporations, and trade (Gilpin, 2001; Oatley, 2019). The foundation of understanding how entrepreneurs not only establish businesses but also shape global systems, policies, and power relations in the globalised world of today.

Purpose and Scope of the Chapter

This chapter puts a spotlight on the increasing political role of entrepreneurs as influential actors in the global political economy, not only as business brains but also as political actors. While mainstream IPE research has focused closely on states and large corporations, this chapter widens the lens to take in how entrepreneurs unsettle and strategically mold global arrangements (Balaam and Dillman, 2018). It discusses how their new businesses across tech, finance, and clean energy are disrupting world trade, re-writing rules, and even re-shaping geopolitics.

The scope includes:

- Historical and theoretical perspectives on entrepreneurial influence in global systems
- Case studies from tech, finance, and green innovation
- Analysis of the policy and governance challenges posed by high-impact entrepreneurs
- Discussion of future trajectories and global power shifts due to entrepreneurship

Relevance of Entrepreneurship in Shaping Global Economic and Political Structures

Entrepreneurs are disruptors in the international economy, spurring innovation, job creation, and leading fundamental changes in how things are done. On top of that, they're now shaping politics through the impact on regulations, trade agreements, and even foreign policy, particularly among those driving game-changing tech start-ups (Autio *et al.,* 2014). Take digital entrepreneurs, for example: their platforms, like cryptocurrency exchanges or social media giants, are shaking up national governance and steering political conversations (Bradshaw & Howard, 2018). In emerging economies, start-ups and entrepreneurial hubs are even becoming tools of soft power and economic diplomacy, helping countries plug into the global stage (Saxenian, 2006; Dutta & Lanvin, 2022). Entrepreneurs aren't just building businesses; they're rewriting the rules of global influence.

2. The Intersection of Entrepreneurship and International Political Economy

Entrepreneurship is a powerful force for economic growth, sparking innovation, building new industries, and creating jobs (Sagar, 2024). From cutting-edge tech hubs to bustling local markets, entrepreneurs are driving progress by introducing new products, services, and ways of doing business that push technology forward and boost economies worldwide.

- **In developed countries**, entrepreneurs fuel high-value sectors like tech, biotech, and green energy (El Ghak *et al.,* 2021). These industries don't just grow the economy—they raise the bar for efficiency and productivity (Nordhaus, 2001). Think of Silicon Valley, where companies like Apple, Google, and Tesla show how relentless innovation can create and dominate entire industries (Bhidé, 2000).

- **In developing nations**, entrepreneurship lifts communities by powering small and medium businesses that are often the backbone of job creation (Shailendra, 2024). Beyond jobs, entrepreneurs tackle big social issues like healthcare, education, and infrastructure. The World Bank (2020) highlights how these efforts improve lives, reduce poverty, and make economies more resilient.

Entrepreneurs are masters at spotting gaps in the market and filling them with creative solutions, often birthing entirely new industries (Sapsed *et al.,* 2007). Take fintech: by offering alternatives to traditional banking, especially in underserved regions, entrepreneurs have reshaped finance and opened doors for millions. E-commerce titans such as Amazon and Alibaba have revolutionised international retail, opening up new opportunities far and wide (Acs *et al.,* 2008). But entrepreneurs are not only creating businesses, they are also shaping politics and international trade (Acs *et al.,* 2001). As their businesses expand, they advocate for policies that favour innovation, such as tax relief on R&D or improved access to capital (Murray, 2007). They also have a say in trade policies, assertive for open markets and fewer restrictions, as observed through the negotiation of free trade agreements (Urata, 2002). Their power can reshape national and international economic policies, ranging from intellectual property regulations to data protection rules (Mazzucato, 2013). Technopreneurs are powerful players in creating global economic rules (Porter, 1990).

Entrepreneurs influence policies that affect their companies through lobbying, advocating for deregulation, tax breaks, or policies that facilitate innovation and international expansion (Anderson *et al.,* 2020). The influence of Silicon Valley on shaping data privacy and digital rights policy reveals how entrepreneurs can establish global standards (Zengler, 2018). Entrepreneurs are more than economic performers, they're political leaders, policy makers, and international game-changers, fuelling innovation as well as the rules that govern it.

Globalisation and the Role of Entrepreneurs

Globalisation has redefined entrepreneurship, have found ways to access overseas markets and connect with worldwide supply chains (Baumgartner *et al.,* 2014). International trade agreements and fewer restrictions on cross-border transactions are increasing their base of customers and revenue by exporting to new markets (Tu *et al.,* 2018). Entrepreneurs are the drivers of international innovation, collaborating on international research collaborations, connecting global tech hubs, and exchanging ideas and technology across borders (Reznikova *et al.,* 2020). The international start-up ecosystem in which entrepreneurs from various nations come together to work illustrates how such collaborations are transforming industries globally (Chesbrough, 2003). Digital entrepreneurship, specifically, is disrupting the global political landscape (Kraus *et al.,* 2019). Through the creation of platforms, apps, and services that operate across nations, digital entrepreneurs are dissolving conventional political borders (Song, 2019). Consider e-commerce retailers such as Amazon, online media such as Facebook, or taxi-hailing applications such as Uber they've shattered markets and disrupted rules wherever they go (Gawer and Srnicek, 2021).

The surge of the digital economy, driven by entrepreneurs, is raising significant questions regarding regulating data, privacy protection, and taxation globally. Global organizations such as the European Union are moving forward, with regulations such as the General Data Protection Regulation (GDPR) taking the forefront. Tech entrepreneurs are heavily invested in making these rules, advocating for policies that drive innovation and address concerns such as data privacy and cybersecurity (Graham & Phelps, 2020). In this rapidly changing world, entrepreneurs aren't establishing businesses they're redesigning the way the global system operates.

3. Innovation and its Influence on International Political Economy

Innovation is a leveller for international trade, empowering entrepreneurs to be different, think smarter, and transform the way products and services reach consumers (Chapman *et al.,* 2003). Through creating new designs and innovative business models, entrepreneurs can get an upper hand in the international marketplace. For example, practices such as lean manufacturing and just-in-time production have reduced waste and accelerated businesses to deliver on customers' needs. Meanwhile, ground breaking ideas like subscription services (think Netflix or Spotify) and platform-based businesses (like Airbnb or Uber) have turned industries upside down, sparking global demand for products and services no one even dreamed of before (Teece, 2010). These innovations aren't just reshaping businesses they're redefining how the world buys, sells, and connects.

- **Technology (e.g., Apple, Google):** Apple's innovation in mobile devices and ecosystems has reshaped global consumer electronics markets. Google's search algorithms and ad tech models have transformed digital advertising and global information access (Schilling, 2020).
- **Renewable Energy (e.g., Tesla, BYD):** Entrepreneurs like Elon Musk have accelerated the shift to electric vehicles and battery storage, challenging oil-dependent economies and influencing energy trade and climate policy.

- **Finance (e.g., PayPal, Stripe):** Fintech start-ups have introduced digital wallets, mobile payments, and decentralized finance (DeFi), reducing dependency on traditional banking systems and opening financial services to unbanked populations worldwide (Arner, Barberis & Buckley, 2015).

Tech entrepreneurs are breaking down borders with digital platforms that connect the world like never before, knitting global economies closer together (Nambisan *et al.,* 2019). Giants like Amazon, Alibaba, and Shopify empower even small businesses in far-flung places to sell to customers worldwide, making global trade more accessible than ever. Tools like Zoom and Slack let people work together across continents, blending labour markets and changing how value is created and shared globally (Baldwin, 2016). This wave of digital innovation brings both exciting opportunities and tricky challenges, pushing for new trade agreements, digital tax rules, and cybersecurity laws (Larionova and Shelepov, 2021). Cross-border entrepreneurs frequently promote harmonised rules and liberal internet policies to maintain their operations booming (Abdelhak and Belkacem, 2024). For instance, controversies regarding data localisation and digital service taxes are warming up at the World Trade Organisation (WTO), with nations balancing their dominance against the benefits of liberal digital markets (Aaronson & Leblond, 2018). Tech innovation is also influencing regional initiatives, such as the EU's Digital Single Market and the African Continental Free Trade Area (AfCFTA), where digital entrepreneurship is regarded as a means of inclusive growth. By creating platforms that cut across borders, tech entrepreneurs are not only driving commerce, they're redefining the way the world connects and grows.

4. Entrepreneurs as Drivers of Policy Change

Entrepreneurs are also emerging as influential players in policy-making at national and international levels, particularly in sectors influenced by innovation, digital transformation, and sustainability (Nambisan *et al.,* 2019a). Entrepreneurs are not like traditional firms; instead, they are boundary-pushers, and more likely than not, they find themselves in the midst of controversy regarding laws, regulations, and institutional arrangements. Their innovative thinking and revolutionary methods not only ignite new companies but challenge the norms, forcing discussions on how policies need to change to keep pace with a rapidly changing world.

- **Lobbying for Innovation-Friendly Policies**: Entrepreneurs often engage in lobbying efforts to reduce regulatory hurdles and promote frameworks that support innovation. For example, the tech industry in Silicon Valley has lobbied for favourable tax laws, immigration reforms (such as H-1B visas in the U.S.), and open internet policies to ensure a conducive environment for innovation-driven enterprises (Kerr, Nanda, & Rhodes-Kropf, 2014).

- **Environmental Regulations and IP Rights**: Green entrepreneurs and cleantech start-ups actively advocate for carbon credits, green subsidies, and stronger enforcement of intellectual property rights to protect their innovations and create a fair competitive landscape.
- **Economic Reforms and Social Advocacy**: Entrepreneurs, especially in emerging markets, are often involved in pushing for inclusive economic reforms. Social entrepreneurs, such as Muhammad Yunus (Grameen Bank), have shown how advocacy can lead to large-scale structural changes, such as microfinance regulations and poverty alleviation strategies.

Entrepreneurs play a vital role in public-private partnerships, where government agencies collaborate with private enterprises to deliver public goods and services more effectively.

- **Driving Economic Growth and Innovation Ecosystems**: Governments often partner with start-ups and entrepreneurs to spur innovation in strategic sectors. For instance, countries like Israel and Singapore have launched government-funded incubators and innovation hubs, offering grants, tax incentives, and infrastructural support for start-ups (Mazzucato, 2013).
- **Technological Advancement**: In the U.S., partnerships between NASA and private firms like SpaceX and Blue Origin demonstrate how PPPs can revolutionize even traditionally state-dominated sectors like aerospace. These partnerships have led to major cost reductions, faster innovation, and new commercial markets.

5. Innovation Ecosystems and Global Power Shifts

Innovation ecosystems geographic concentrations of interconnected businesses, academic institutions, and support organizations have become central to global economic competitiveness.

- **Silicon Valley (USA)**: Often cited as the world's foremost innovation cluster, Silicon Valley has been instrumental in advancing technologies in software, hardware, and biotech. Its success is attributed to the close collaboration between venture capital, research institutions (like Stanford University), and a strong entrepreneurial culture (Saxenian, 2006).
- **Bangalore (India)**: Known as the "Silicon Valley of India," Bangalore has become a global IT services hub due to factors like government investment in technology parks, a large pool of English-speaking engineers, and the rise of unicorns like Flipkart and Infosys.

- **Shenzhen (China)**: Once a small fishing village, Shenzhen has transformed into a global manufacturing and innovation hub, especially for electronics and hardware start-ups. It benefits from strong state support, proximity to supply chains, and rapid prototyping infrastructure (Chesbrough, 2010).

Emerging markets are increasingly contributing to global entrepreneurship and innovation, challenging the dominance of Western economies.

- In countries like India, Brazil, Nigeria, and Indonesia, entrepreneurship is spurred by digital inclusion, demographic dividends, and mobile-first solutions that address local challenges.
- Innovations such as M-Pesa in Kenya (mobile money) or Jumia in Africa (e-commerce) are examples of how emerging market entrepreneurs are creating scalable, globally relevant models.

Digital entrepreneurs play a growing role in the projection of soft power the ability to shape preferences through appeal and attraction rather than coercion.

- **Cultural Export**: Platforms like TikTok (China) and YouTube creators from various countries serve as tools of cultural diplomacy, shaping global opinions and norms.
- **Norm-setting in Technology**: Entrepreneurs developing AI, blockchain, and platform-based services (e.g., Stripe, Alibaba, Spotify) often influence global standards, ethics, and governance frameworks.
- **Thought Leadership**: Figures like Elon Musk, Jack Ma, and Nandan Nilekani use their global platforms to influence public discourse on sustainability, space policy, fintech, and digital identity.

6. Policy Implications and Governance Challenges

Start-up entrepreneurs are making a significant impact on the global economy and political landscape, pushing governments and international institutions to re-evaluate their strategies. Countries like the U.S., China, and India are launching initiatives to support entrepreneurs, such as tax incentives, seed funding programs like Start-up India, and streamlined regulations to leverage the power of start-ups. Global organisations like the World Trade Organisation (WTO), G20, and World Economic Forum (WEF) are now integrating entrepreneurship into discussions on trade, innovation, and development. Digital entrepreneurs, particularly in sectors like fintech, e-commerce, and platform businesses, are progressing faster than traditional regulations can keep up with, easily crossing borders and creating challenges related to data privacy, digital taxation, and trade barriers. The EU's strict General Data Protection Regulation (GDPR) contrasts with more lenient regulations in other regions.

The OECD has been grappling with how to fairly tax digital giants like Amazon and Google. The rise of "tech monopolies" and major start-ups such as Google, Meta, and Alibaba have sparked concerns about market supremacy and inequality. Governments in the U.S., EU, and India are intensifying scrutiny, launching investigations, and imposing fines on tech giants for anti-competitive practices. To promote fairness, over 130 countries supported the OECD's Global Minimum Tax Agreement in 2021, ensuring that large corporations pay at least a 15% tax regardless of their location. The OECD's two-pillar plan also addresses tax challenges related to the digital economy. Investors and regulators are closely monitoring business ethics, sustainability efforts, and board accountability, expecting companies to prioritize both doing good and doing well. Entrepreneurs are not just creating businesses they are driving a global shift in how we think about the rules of the game.

7. Future Outlook

Entrepreneurs are reshaping the world through ground-breaking technological innovations, cross-border influence, and bold leadership. By bypassing traditional systems, swiftly securing funding, and scaling their ideas globally, they have become powerful players in international affairs often surpassing the influence of conventional corporations. A striking example is Elon Musk's Starlink, which has delivered critical internet access to conflict zones like Ukraine and the Democratic Republic of Congo. In Ukraine, Starlink has enabled vital communications for civilians and the military amid ongoing war, while in the Congo where only 30% of the population had internet access as of 2023 its new licensing promises a digital transformation.

Emerging entrepreneurial hubs in Africa, Southeast Asia, and Latin America are shifting the global economic balance. Cities like Lagos, Bangalore, and São Paulo are buzzing with innovation, attracting significant venture capital and nurturing start-ups that tackle both regional issues and global challenges. Looking ahead, entrepreneurs in fields such as Artificial Intelligence (AI), biotechnology, and green technology are set to play key roles in shaping global priorities. Meanwhile, green tech pioneers are driving progress in renewable energy and carbon-neutral solutions, influencing climate negotiations and trade policies centered on sustainability. Entrepreneurs are instrumental in advancing the United Nations Sustainable Development Goals (SDGs), developing innovative solutions in areas like education, healthcare, clean energy, and economic inclusion. Through their vision and leadership, they are building inclusive innovation ecosystems that confront critical global challenges such as inequality, environmental harm, and social marginalization paving the way toward a fairer, more sustainable future

Conclusion and Policy Recommendations and Future Research:

Entrepreneurs are increasingly stepping into the spotlight as key actors in the global political economy, driving transformation through innovation, disrupting established industries, and extending their influence across national borders. They are at the forefront of emerging sectors such as the digital economy and green energy, redefining global production and consumption patterns. Yet, their impact goes well beyond economics. Entrepreneurs are also becoming political influencers, engaging in lobbying, shaping policy discourse, and collaborating with governments to influence trade rules, regulatory frameworks, and even international alliances. Tech entrepreneurs, in particular, are central to global discussions on data privacy, cross-border taxation, and intellectual property rights.

With the ability to scale disruptive ideas globally, entrepreneurs don't just influence policy—they often help craft it. They are not only transforming what economies produce but are also reshaping how nations interact, negotiate, and position themselves geopolitically. In this fast-paced, technology-driven, and interconnected world, entrepreneurship has become both a catalyst for economic evolution and a strategic tool of political influence, redefining where and how power is exercised on the global stage. Governments must craft adaptable, future-oriented policies that not only foster entrepreneurship and innovation but also uphold principles of fairness, sustainability, and accountability. As entrepreneurs increasingly operate across borders, international organisations have a critical role to play in shaping governance frameworks that support global innovation, promote equitable data practices, and address digital inequalities. This includes setting international standards for digital trade, intellectual property rights, and environmental responsibility.

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REVERSE MORTGAGE LOANS:
A JOURNEY FROM DHARMA TO MOKSHA

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Abstract:

This paper explores the cultural alignment of Reverse Mortgage Loans (RML) with Indian values, focusing on integrating the Bhārati model, specifically, the four Purushārthas (Dharma, Artha, Kāma, and Moksha) into financial decision-making for senior citizens in India. It examines how RML can be framed as a tool that upholds the cultural principles of duty (Dharma), financial empowerment (Artha), personal desires (Kāma), and spiritual liberation (Moksha). The study argues that by positioning RML within the Indian cultural context, financial institutions can enhance its acceptance among seniors and their families. The paper highlights the ethical implications of RML, advocating for its use as a means for seniors to maintain dignity, fulfil familial responsibilities, and pursue financial and spiritual peace in their later years. The research provides insights into how RML can be marketed in India, emphasizing family-centered marketing strategies that align with traditional values and address the unique financial needs of elderly citizens.

Keywords: Reverse Mortgage Loans, Dharma, Artha, Kāma, Moksha, Senior Citizens.

1. Introduction:

India is experiencing a significant demographic transition, with the aging population growing rapidly. Currently, over 100 million individuals in India are aged 60 or above, and this number is projected to exceed 300 million by 2050 (United Nations, 2017). This demographic shift, driven by increased life expectancy, poses a growing challenge to the financial security of senior citizens, who often face inadequate savings, rising healthcare expenses, and a lack of sufficient pension coverage (Mishra & Joshi, 2017). Additionally, the erosion of traditional family structures, such as the joint family system, has made it increasingly difficult for elderly individuals to rely on family support, especially in urban areas (Chand & Sharma, 2019). Consequently, there is a pressing need for innovative financial solutions that can help to ensure the financial independence and well-being of India's aging population.

As the elderly population in India continues to grow, many seniors are finding it difficult to cover the increasing costs of healthcare, maintain a satisfactory standard of living, and meet daily expenses, particularly in the absence of comprehensive pension schemes (Natarajan & Gupta, 2018). The lack of financial literacy and access to appropriate financial products further worsens these issues. Given the changing dynamics of family structures, it is clear that seniors need alternative financial mechanisms to maintain their independence and dignity in their later years (Gupta & Rajput, 2020).

2. Introduction to Reverse Mortgage Loans (RML)

Reverse Mortgage Loans (RML) are a financial product designed to help senior citizens leverage the equity in their homes to generate a steady income stream without having to sell the property. Typically, RMLs are available to homeowners aged 60 or above, who can access funds based on the value of their property (Chand & Sharma, 2019). The loan is repaid only when the homeowner passes away or vacates the home, ensuring that seniors can continue to live in their homes without the worry of making regular repayments during their lifetimes (Mishra & Joshi, 2017). In addition to providing financial stability, RMLs offer a means for seniors to cover medical expenses, household costs, and other financial needs, which is particularly critical in a country where social security systems remain underdeveloped (Sharma & Agarwal, 2021).

3. Purpose of the Paper

This paper examines Reverse Mortgage Loans (RML) through a cultural lens by integrating the Bhārati Model of Life Stages, a framework rooted in Indian philosophy. The Bhārati Model, which focuses on the four Purushārthas—Dharma (duty), Artha (material wealth), Kāma (desires), and Moksha (spiritual liberation)—offers a culturally aligned approach to financial decisions. By applying this model to RMLs, the paper aims to reframe these loans as a tool for financial empowerment that supports both economic security and emotional well-being for seniors. Given India's growing aging population, aligning RMLs with traditional values can enhance their acceptance, ensuring they contribute to financial independence and dignity for elderly homeowners.

4. Understanding the Bhārati Model: The Four Purushārthas

The Bhārati Model, rooted in ancient Indian philosophy, provides a structured framework for understanding life’s stages through the four Purushārthas: Dharma (righteous duty), Artha (material wealth), Kāma (pleasures and desires), and Moksha (spiritual liberation). These interconnected goals guide individuals in balancing material needs with spiritual aspirations, offering a holistic approach to life (Patel, 2012).

Dharma refers to ethical responsibilities and duties toward family, society, and oneself. For seniors, this often involves mentoring younger generations and maintaining social harmony (Rao, 2015). Financial stability supports Dharma, allowing elders to fulfil their obligations without financial distress.

Artha emphasizes financial security and wealth management, especially crucial for seniors as traditional earning opportunities decline. Reverse Mortgage Loans (RMLs) align with this goal by enabling homeowners to access their home equity without selling their property, ensuring financial stability during retirement (Singh, 2016).

Kāma pertains to personal fulfilment, relationships, and leisure. Seniors seek comfort and joy in their later years, but financial insecurity can hinder this pursuit. RMLs alleviate financial stress, enabling elderly individuals to focus on relationships and personal satisfaction without economic worries (Mishra & Kumar, 2019).

Moksha, the ultimate spiritual goal, encourages detachment from material concerns in pursuit of inner peace. Seniors often prioritize spiritual growth through meditation and religious practices. By securing financial independence through RMLs, they can dedicate themselves to their spiritual journey without financial burdens (Bhattacharya, 2017).

Integrating the Bhārati Model with Reverse Mortgage Loans presents a culturally sensitive approach to financial planning for seniors. By aligning RMLs with the Purushārthas, this framework ensures that financial decisions uphold traditional Indian values while fostering economic security and holistic well-being for elderly homeowners.

5. The Bhārati Model and Senior Life Stages

The Bhārati Model, which divides life into four Ashramas: Brahmacharya (student life), Grihastha (householder life), Vanaprastha (retirement life), and Sannyasa (renunciation)—provides a philosophical framework for understanding senior life stages. Vanaprastha and Sannyasa, particularly relevant for elderly individuals, emphasize the transition from active social participation to spiritual detachment and self-realization (Patel, 2012).

During these stages, seniors seek spiritual fulfilment while managing their material needs. Reverse Mortgage Loans (RMLs) serve as a financial tool that allows elderly homeowners to maintain stability while focusing on their spiritual aspirations. The Bhārati Model highlights the need for a balance between financial security and spiritual liberation, ensuring that economic concerns do not hinder personal growth in later life (Patel, 2012).

By integrating RMLs within the framework of Vanaprastha and Sannyasa, seniors can maintain their independence while adhering to traditional values, fostering a harmonious transition between material nourishment and spiritual enlightenment.

6. Integrating Reverse Mortgage Loans within the Bhārati Model

Integrating Reverse Mortgage Loans (RMLs) within the Bhārati Model offers a culturally sensitive approach to financial planning for seniors, ensuring a balance between material security (Artha) and spiritual fulfilment (Moksha). By allowing seniors to access the equity in their homes, RMLs provide financial stability without requiring them to sell their property, thereby preserving their dignity and independence (Mishra & Kumar, 2019).

The Artha phase, which emphasizes financial security, is directly supported by RMLs as they offer a reliable source of funds during retirement. This ensures that seniors can maintain their lifestyle and effectively manage their resources while continuing to reside in familiar surroundings (Mishra & Kumar, 2019).

Additionally, RMLs facilitate the pursuit of Moksha by alleviating financial anxieties, enabling seniors to focus on spiritual practices, meditation, and inner peace rather than material concerns. With stable financial backing, they can devote their later years to self-realization and spiritual growth without the burden of financial insecurity (Sengupta & Gupta, 2018).

In conclusion, aligning Reverse Mortgage Loans with the Bhārati Model provides a holistic financial solution for elderly homeowners. By addressing both material and spiritual aspirations, RMLs promote economic security while fostering personal fulfilment, ensuring that seniors can lead meaningful and balanced lives in their retirement years.

7. Challenges for Reverse Mortgage Loan in the Indian Context

Despite being a viable financial solution for seniors, the adoption of Reverse Mortgage Loans (RMLs) in India has been limited due to several contextual challenges, including cultural barriers, lack of awareness and trust, and insufficient government and institutional support.

7.1 Cultural Barriers

- **Emotional Attachment to Family Homes**: In Indian culture, a home is more than just property, it symbolizes security, heritage, and familial ties. Many seniors perceive mortgaging their homes as a violation of family honour and ancestral legacy, leading to skepticism toward RMLs (Rao, 2015).
- **Desire for Control**: Many elderly homeowners feel uneasy about relinquishing control over their property, even if financial difficulties persist. The idea of losing autonomy over their home under a financial arrangement like RMLs causes significant resistance (Sharma, 2018).

7.2 Lack of Awareness and Trust

- **Insufficient Knowledge**: Reverse mortgages remain relatively unfamiliar in India, particularly among senior citizens. Many lack a proper understanding of eligibility criteria, loan mechanics, and long-term consequences, making them hesitant to consider RMLs (Patel & Desai, 2017).
- **Mistrust of Financial Institutions**: Older Indians often distrust financial institutions, particularly when it comes to complex financial products. Limited exposure to modern financial solutions further discourages seniors from engaging with RMLs due to their perceived complexity (Gupta, 2016).

7.3 Government and Institutional Support

- **Existing Schemes**: Banks such as the State Bank of India (SBI) offer Reverse Mortgage Loan schemes to help seniors convert home equity into income. However, these schemes face low uptake due to complex application processes and insufficient public awareness (Singh & Kumar, 2016).
- **Limitations**: Government-backed RMLs offer financial relief, but their effectiveness is constrained by interest rates, loan amount caps, and bureaucratic hurdles. These factors often discourage seniors from applying, reducing the accessibility of such schemes (Kumar, 2019).

Despite these challenges, Reverse Mortgage Loans hold significant promise for addressing the financial needs of India's aging population. Mitigating cultural resistance, enhancing financial literacy, and improving institutional support can increase acceptance and enable seniors to benefit from this financial tool.

8. Cultural Sensitivity in Promoting Reverse Mortgage Loans (RMLs)

Reverse Mortgage Loans (RMLs) must be reframed in a culturally congruent manner, especially in a country like India, where homeownership carries emotional, spiritual, and familial significance. For wider adoption, RMLs should be presented as instruments that preserve dignity, uphold traditional values, and promote holistic well-being (Bhatt & Bhat, 2020).

8.1 Upholding Dharma: Financial Responsibility Towards Family

In Indian philosophy, *Dharma* signifies one's duty towards family and society. For many elderly individuals, fulfilling responsibilities without burdening their children is paramount. RMLs enable seniors to maintain financial independence while ensuring the family home remains intact for future generations (Bhattacharya, 2019).

- **Preserving Dignity**: RMLs provide a dignified way to access finances without liquidating assets or seeking support from children (Kant, 2009).
- **Intergenerational Legacy**: Seniors can use RMLs to contribute to household expenses and healthcare while retaining ownership, ensuring the emotional and cultural legacy of the home is preserved (Singh, 2007).

8.2 Realizing Artha: Ensuring Economic Security in Old Age

Artha, or economic well-being, is essential for aging individuals. RMLs unlock home equity, providing funds to manage rising healthcare costs, inflation, and other financial needs during retirement (Sharma, 2010).

- **Sustainable Financial Access**: By accessing capital through RMLs, seniors can sustain their lifestyle and secure long-term needs (Verma & Soni, 2018).
- **Investment in Livability**: RMLs can also fund home modifications—such as solar panels or elder-friendly architecture—that enhance safety and comfort (Chaudhury & Das, 2020).

8.3 Fulfilling Kāma: Pursuit of Desires and Personal Satisfaction

Kāma pertains to the pursuit of desires, joy, and emotional well-being. RMLs allow seniors the financial flexibility to indulge in leisure, hobbies, travel, or even spiritual retreats, enabling a more enriching retirement (Vaswani, 2009).

- **Leisure and Fulfillment**: Whether it's pursuing art, joining educational courses, or travelling, RMLs empower seniors to enjoy life on their terms (Vaswani, 2009).
- **Balance of Duty and Desire**: By responsibly using RML funds, seniors can enjoy personal happiness without neglecting their family duties or spiritual goals.

8.4 Attaining Moksha: Spiritual Liberation Through Financial Freedom

Moksha, the ultimate life goal in Indian philosophy, involves detachment from material life and spiritual liberation. Financial insecurity can hinder this pursuit. RMLs offer a way to reduce stress and facilitate spiritual focus (Patel & Desai, 2017).

- **Freedom from Financial Worry**: With basic needs covered, seniors can devote time to spiritual practices like meditation, pilgrimage, or religious activities (Sharma & Gaur, 2021).
- **Letting Go of Material Attachment**: RMLs encourage detachment by allowing seniors to use home equity without "selling out" emotionally or culturally (Bhattacharya, 2012).
- **Legacy of Peace**: By securing finances through RMLs, seniors leave behind not only property but also peace of mind for heirs (Krishna, 2016).

9. Cultural Reframing of RMLs: Aligning Product with Values

To increase the acceptance of RMLs, cultural reframing is essential. This includes presenting RMLs not as instruments of financial distress, but as tools for empowerment and value alignment (Bose, 2022).

9.1 Family-Centric Marketing and Awareness

In India, financial decisions are rarely made in isolation. Collective family involvement is key to ensuring acceptance of RMLs (Rao, 2015).

- **Family Education Programs**: Financial institutions must design campaigns that involve children and caregivers, highlighting how RMLs preserve both assets and dignity (Patel, 2022).
- **Community Engagement**: Workshops, seminars, and digital awareness drives can dismantle myths around mortgaging and demonstrate the benefits of RMLs (Agarwal & Kumar, 2021).

9.2 Addressing Emotional and Ethical Concerns

Resistance to RMLs often stems from fears about losing the family home or breaking cultural norms.

- **Ethical Framing**: RMLs should be described as ways to uphold *Dharma* by preventing financial dependence and retaining property ownership (Sharma & Gaur, 2021).
- **Spiritual Relevance**: Emphasizing how RMLs enable *Moksha* by freeing seniors from economic stress creates deeper emotional resonance (Choudhary, 2019).

10. Policy Recommendations for Culturally Adapted RMLs

Financial products in India must account for the diverse cultural, spiritual, and familial structures of senior citizens. The following recommendations aim to enhance the relevance and safety of RMLs:

10.1 Regulatory Reforms and Safeguards

- **Transparent Loan Structures:** Establish clearer terms, safeguards against mismanagement, and fair valuation mechanisms to protect seniors (Reddy & Narayan, 2021).
- **Flexible Usage Norms**: Allow RML funds for a wider range of expenses such as medical care, home modifications, and spiritual travel (Das & Singh, 2022).

10.2 Public Sector Involvement and Inclusion

Government-Backed Schemes: Introduce subsidized or guaranteed RML schemes to build trust and extend reach to low-income households (Chakraborty, 2019).

- **Education and Outreach**: Launch multi-lingual, culturally sensitive education drives to improve understanding of RMLs among seniors and their families (Kumar & Singh, 2020).

11. Integrating RMLs into the Bhārati Model

The Bhārati Model, rooted in the *Purushārthas*—Dharma, Artha, Kāma, and Moksha—provides a culturally holistic approach to personal finance. RMLs, when interpreted through this lens, transform into tools of empowerment and not just monetary relief (Gupta, 2021).

- ***Dharma**:* Fulfilling duties to self and family without dependence
- ***Artha**:* Achieving financial autonomy and resilience
- ***Kāma***: Pursuing happiness and meaningful experiences
- ***Moksha**:* Creating spiritual space by eliminating financial distress

Conclusion: A Holistic Future for Senior Finance in India

As India's senior population grows and traditional familial support systems evolve, innovative financial products like RMLs will be critical. When framed within Indian values and spiritual ideals, RMLs can support aging with dignity, peace, and purpose (Raj, 2022).

Financial institutions must take a culturally embedded approach to product design and marketing. Aligning RMLs with traditional goals such as ethical responsibility, economic empowerment, life satisfaction, and spiritual growth will help reshape public perception and foster wider adoption (Sinha & Yadav, 2021).

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HEALTHCARE QUALITY IMPROVEMENT AND MANAGEMENT ON PATIENT OUTCOMES: COMPREHENSIVE REVIEW

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Abstract:

Quality improvement in healthcare is paramount within contemporary healthcare systems, including efficiency, equity, timeliness, safety, efficacy, and patient-centeredness. Successful health management strategies play a central role in promoting and maintaining improvements in these areas. Through this review, this discussion attempts to address fundamental issues where healthcare management strategies are shown to lead to improved healthcare quality. The discussion initiates by looking into the core principles of leadership and governance of healthcare organizations. Strategic leadership determines direction and vision, while sound frameworks for governance provide ethical decision-making and accountability. Quality improvement approaches that are ongoing, such as Plan-Do-Study-Act (PDSA) [1] Despite the widespread acceptance of the benefits of electronic health record and Health Information Technology for Economic and Clinical Health (HITECH) Act that promotes adoption of EHR to enhance care quality and efficiency, previous studies exhibit disparate results of EHR implementation maximize care delivery and patient outcomes [2]. HRM (Human Resource Management) within the health industry is a critical process to ensure the smooth functioning of organizations.[3] In the future, we expect the future of healthcare management AI to be a point of debate among physicians, questioning whether it will be more capable than them or interfere with their duties. We would like to see harmony within collaboration led by quality-oriented professionals. [4]. This review ends with an appeal to healthcare leaders to steer through these challenges and adopt future trends in order to further improve the quality of healthcare. By making use of good management practices.

Keywords: Leadership Quality, TQM, PDCA Model, Effective Patient Outcome, Top-Notch Health-Care Quality, Risk Factors.

1. Introduction:

Hospital accreditation is a procedure that allows healthcare institutions to demonstrate their dedication to patient safety and treatment quality by meeting predetermined requirements set by accrediting organizations. The principle of accreditation is to enhance organizational practice and delivery of care, promoting a safety culture and a culture of constant improvement [5]. This thorough process reviews all elements of patient care and organizational design, guaranteeing that institutions not just satisfy specified standards but also participate in regular assessment and improvement of their practice. Hospital accreditation is utilized internationally as a powerful force in quality improvement. It offers a methodical way to for hospitals to determine and correct shortfalls, improve patient outcomes, and optimize their operations to ensure that safety measures are practiced consistently. Various studies have indicated that accredited hospitals frequently exhibit improved patient outcomes such as reduced mortality rates and fewer medical errors than non-accredited institutions. Additionally, accreditation procedures compel hospitals to implement best practices and technologies conducive to safer and more effective patient care [8]. As a result, accreditation is essential for enhancing patient safety and care quality as well as for fortifying hospital administration processes. By providing a structured framework for evaluation and continuous development, it helps healthcare institutions meet rising expectations in an increasingly complex healthcare environment.

2. Leadership in Healthcare:

Leadership is an important aspect of effective healthcare management, and over time numerous theories have been created attempting to explain what constitutes a good leader. These theories provide information on the characteristics, behaviours, and conditions that lead to effective leadership, especially in the dynamic and complicated domain of healthcare. [9]

Figure 1: Theories of leadership

2.1 Theories of Leadership

Table 1: Theories of leadership

Theory	Reflection in healthcare	Impact
Great Man Theory	Suggests that healthcare leaders are born and possess inherent characteristics like charisma, courage, and vision. Historically, it has been strong personalities like Florence Nightingale or Dr. Christiaan Barnard who exemplified this by spearheading significant reforms and breakthroughs.	Assists in times of crisis because strong characters can generate confidence and quick decision-making. Its drawback, however, is that contemporary healthcare needs to be collaborative and team-based in leadership as opposed to reliance on one heroic individual.[11]
Trait Theory	Suggests that good healthcare leaders have certain characteristics such as empathy, integrity, resilience, and decisiveness. For instance, empathetic nurse leaders enhance patient satisfaction and staff engagement.	Offers a model for choosing and training healthcare leaders according to identified desirable characteristics.[11]
Behavioural Theory	Emphasizes what leaders *do* rather than who they are. Effective healthcare leaders demonstrate supportive behaviours, such as transparent communication, participatory decision-making, and team building.	Suggests that leadership in healthcare can be taught and learned through professional development programs and training.[11]
Transformational Leadership Theory	Transformational leaders establish collective vision, foster innovation, and enable healthcare employees. For example, they might spearhead implementation of electronic health records by encouraging employees to adopt change.	Narrowly associated with increased patient satisfaction, less staff burnout, and better healthcare results.[11]
Contingency Theory	Proclaims that effectiveness as a leader is situation-dependent. In crisis situations, autocratic leadership will be most effective, whereas policy formulation will best be accomplished through participative leadership	Promotes flexibility, helping healthcare leaders adapt to diverse clinical and administrative challenges.[11]

3. Excellence in Healthcare:

To get it quality the key highlights are unwavering quality, confirmation and responsiveness. The seven columns of quality as displayed by Donabedian are adequacy, proficiency, optimality, worthiness, authenticity, value, and taken a toll. Concurring to the Organized of Pharmaceutical, administrations are quality, medical services achieve optimal performance when they maintain safety standards while delivering effective care that focuses on patients and operates with efficiency and equity within appropriate time frames.

Tools enable ongoing enhancement of quality management system effectiveness. The quality management system uses subject feedback together with internal quality audits and preventative actions to ensure compliance with pertinent standards. Efficient implementation is made possible by an IT-Integrated Health Management Information System and a committed leadership team. Since it applies a four-step quality model called the plan-do-check-act (PDCA) cycle, the Deming Cycle is the most used method for continuous quality improvement (CQI). Lean, Six Sigma, and Total Quality Management (TQM) are further methods that help with quality management. The Kano model is used by medical professionals to determine the needs of their patients and to raise their satisfaction levels with medical care. External accreditation of quality is dependent on internal quality control systems, which require clearly defined procedures, staff that is regularly trained, and adherence to standard operating procedures.[14]

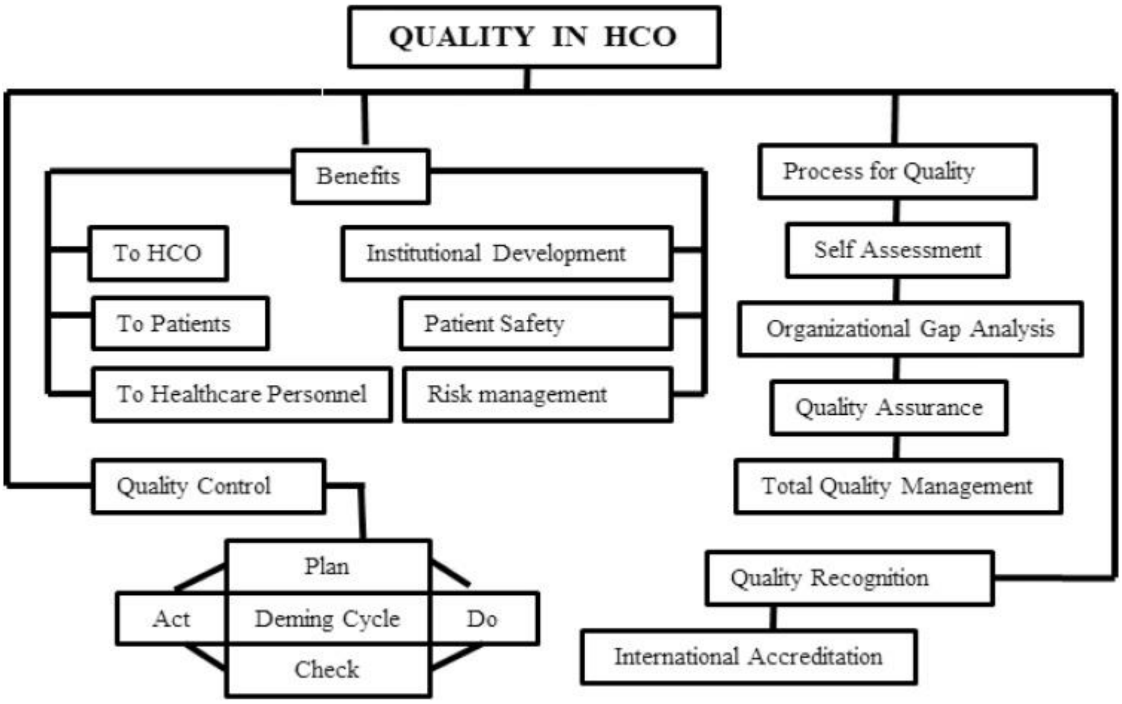

Figure 2: Quality in Health care organization

(Source: Journal of Oral Biology and Craniofacial Research)

3.1 TQM in Healthcare:

The principle of Total Quality Management (TQM) is ongoing improvement involving all employees at all organizational levels. It is a system that shifts the focus from simply fulfilling standards to exceeding them using methodical methods, collaboration, and patient care. Initially conceived in the industrial sector, Total Quality Management (TQM) has been effectively adapted and implemented in a variety of industries, including the healthcare sector. In the healthcare industry, it means being a part of a cohesive strategy where clinical quality, patient safety, operational effectiveness, and patient pleasure all work together to establish the foundation for high-quality care.[12]

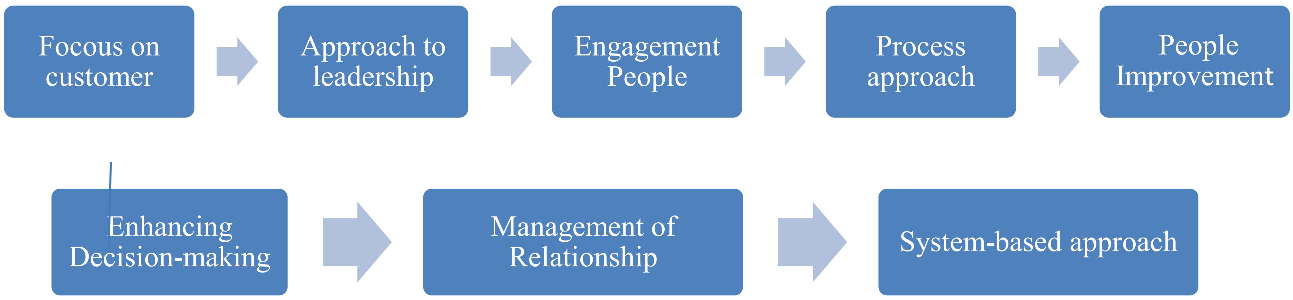

Figure 3: Principles of TQM

3.2 PDCA Model in Healthcare:

The PDCA cycle (Plan-Do-Check-Act), also known as the Deming Cycle, is a standard quality improvement process employed in healthcare. It is a structured and continuous process to address issues, enhance processes, and ensure patient safety. Its cyclical nature provides an effective method to facilitate sustainable change in health care services.

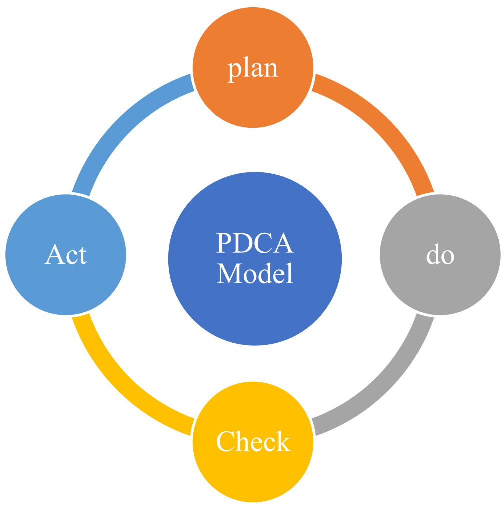

Figure 4: PDCA Model

Table 2: Application of the PDCA Cycle in Hospital Quality Improvement

Plan	Hospitals recognize critical issues with quality, for example, high infection rates, drug errors, or extended patient wait times. Solutions are envisioned, for instance, adding new hygiene standards, electronic medication management, or patient flow optimization systems. Incentives and control systems (such as quality scorecards or KPIs) are created to promote compliance and performance improvement.[16]
Do	The hospital applies these solutions department-wide. For instance, infection control training is conducted among staff, electronic health record (EHR) systems are installed, and lean methodologies are implemented to simplify processes. These practices are embraced by managers and healthcare workers in day-to-day operations.[16]
Check	Quality teams in the hospital continually track performance through data and scoring systems—e.g., infection rates, readmission rates, patient satisfaction scores, and error reports. Interventions are evaluated for effectiveness, and areas requiring improvement are determined.[16]
Act	Hospitals make process adjustments as per the evaluations—like perfecting protocols, enhancing staff training, or upgrading facilities. Effective strategies are strengthened, and areas of deficiency are improved. This way, there is continuous improvement in patient safety, care quality, and overall healthcare outcomes.[16]

4. Guidelines for Efficient Quality Management Within the Healthcare Industry

Table 3: Key Principles of Quality Management in Healthcare Organizations

Patients concentrate	our health organization relies on patients and thus ought to have an understanding of current and prospective patients need ought to meet patients' requirements and work towards exceeding their expectations.[15]
Engagement of Individuals in Leadership	Leaders create a sense of direction and purpose for the organization. The internal environment should be created and maintained so that individuals may fully participate in accomplishing the organization's objectives [15].
Participation of individual	People are foundation of any organization, regardless of their level. Their development and active participation allow them to be utilized for the benefit of organizations [15]

Methods that focus on process	When activity and associated resources are handled as a process a desired outcome more efficiently [15]
Methodical approach	To recognizing, comprehending, and managing interconnected processes as a system, makes it easier for the organization to achieve to objectives and effectively and efficiently.
Continuous involvement	ongoing improvement of overall performance of the organizations needs to be permanent objective of the organization [15]

Principle 1: Patients Focus

Our healthcare organization depends on the patients and therefore should understand current and future patients' needs, should meet patients' requirements and strive to exceed their expectations.

Principle 2: Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Principle 3: Involvement of People (Employees)

People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Principle 4: Process Approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Principle 5: System Approach to Management

Identifying, understanding, and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Principle 6: Continual Improvement

Continual improvement of the organization's overall performance should be a permanent objective of the organization.

5. **Improving the Standard of Care will Maximize Patient Outcomes:**

Clinical outcomes are directly impacted by the quality of treatment given in any health system; if that quality of care is intended to be improved, knowledge is essential. The more knowledge pathways providers have, the more opportunity for quality in care. The more information clinicians have at each moment of care – accessible via reliable, usable, and evidence-based sources – the faster they can respond and adapt during care-provision.

Now more than ever, this is applicable across the entire continuum of care because of new technology and therapies rapidly innovating and pushing the bounds and frontiers of the healthcare ecosystem into areas unfathomable just a few years ago – for example, genetics and telemedicine. As all these models refine themselves, there needs to be new ways to think about identifying and managing at-risk patients, reducing length of stay, and improving care delivery, etc.

In order to achieve these outcomes in this new space, clinicians will need to quickly, reliably, identify patterns, diagnose patients, safely prescribe therapies, and – not least of all – improve health outcomes for the patients. Our suite of solutions enables this and more.

6. Limitation

- **High Implementation Costs:** Tech and training for advanced quality management systems involve a high investment that some hospitals cannot undertake.
- **Resistance to Change:** Medical practitioners may oppose implementing new technologies or procedures, thereby limiting their adoption and efficiency.
- **Data Collection Challenges:** Difficulties in collecting accurate and consistent data on patient outcomes can hamper monitoring and decision-making.
- **Time-Consuming Processes:** Quality improvement activities take time before they reveal results, and this deters ongoing efforts.
- **Difficulties with Measurement:** It is challenging to pinpoint the precise influence of quality improvement (QI) on patient outcomes since there are many other factors that affect them, such as socioeconomic circumstances and patient conduct.

Conclusion:

Quality improvement and management are key pillars in improving healthcare systems and providing improved patient outcomes. Through adopting systematic methods like continuous monitoring, utilizing evidence-based procedures and data-driven decision-making, healthcare institutions are able to improve safety, efficiency, and patient satisfaction. Though obstacles like high cost of implementation, resistance from staff, and lack of resources continue to be there, the benefits of decreased medical errors, better service provision, and increased patient trust in healthcare far exceed these obstacles. Strong leadership, engagement of staff, and involvement of patients continue to be important for maintaining improvement. Quality improvement and management, in general, are not singular efforts but continuous processes that promote excellence, flexibility, and patient-centeredness in a dynamic healthcare landscape.

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IMPACT OF TEACHER TRAINING ON EDUCATION QUALITY: A SURVEY OF RURAL VILLAGES AND SCHOOLS IN GREATER NOIDA

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Abstract:

Teacher training really shapes education in a big way. It builds up what teachers know and how they handle classrooms. You know, it sharpens those skills for dealing with all sorts of student needs. Educators pick up the latest teaching methods and tech tools during this stuff. That sparks more creativity in the classroom, basically. Kids end up thinking critically a lot more. And things become way more inclusive, like including everyone no matter what. Plus, it pushes professional growth for teachers. It builds their confidence, you know. Gets them reflecting on their own teaching. All of that leads to better outcomes for students in the end. Looking at the bigger picture, solid training like this cut down on education gaps. It strengthens entire school systems. Even helps move national development ahead. Sure, resources are limited sometimes. Challenges keep popping up, I mean. But teacher training remains the key foundation for real excellence in education

Keywords: Teacher Training, Education Quality, Student Outcomes, Classroom Management, Inclusive Education, Professional Growth, Pedagogy, Critical Thinking, National Development

1. Introduction:

Education is what really holds a nation together, you know. It grows from there. Teachers make the difference mostly. They don't just hand out facts. They steer kids along, get them excited, shape who they become. To pull that off right, teachers have to keep getting better at it. Sharper ways to teach. Real understanding of how learning happens for different people. So yeah, training them turns into this big deal in education now. Teacher training, that's the pre-service stuff before they even start. Then in-service while they're in the thick of it. These programs load them up on subject knowledge. Classroom control too. Fresh ideas for lessons. Tech thrown in for good measure. Folks who get this training link up better with their students. They light a fire for creativity. Critical thinking gets a boost. Handling all sorts of learning styles, that's part of it. Things in classrooms speed up these days. Training gives teachers more confidence. It builds their leadership side. Gets them thinking about what they're doing, reflecting like that helps them improve right there on the job. Bigger picture, it knocks back those inequalities hanging around. Supports schools that include everyone. Ends up making citizens who know their stuff, act responsibly. Hurdles exist, sure. Resources short sometimes. Old habits stick. But the good from solid training outweighs that, pretty much Boils down to teachers being solid. That's what lifts education's quality. Training them right gets schools to real excellence.

2. Survey Locations and Methodology:

To check out how teacher training impacts education quality, we ran surveys and made field visits across 20 different spots in Greater Noida, Dadri, and Noida. Those areas had a nice variety, you know, with 10 schools split evenly between government and private ones. We also included 10 other places like universities, training centers, NGOs, community halls, and government offices. That mix helped us pull in all sorts of data from urban and semi-urban education setups. The visits took place on Fridays, Saturdays, and Sundays between September and October 2025. We stopped by spots such as Sharda University, Amity University, the District Education Office, Rotary Training Centre, and various schools in places like Knowledge Park, Surajpur, Dadri, and Sector 62. It basically allowed us to gather opinions from teachers, administrators, and training staff.

2.1 Methodology

Survey Design

We created a structured questionnaire that had 120 questions in total. It covered sections on teaching practices, classroom management, technology integration, professional development, challenges faced, and overall effects on student learning outcomes. We made separate sets of questions for schools, for universities or training institutes, and for NGOs or government offices, tailoring them to each group's specific context. I mean, that way it all fit better.

Data Collection

We conducted face-to-face interactions with teachers, principals, training coordinators, and education officers. During the visits, we distributed printed questionnaires on the spot. Oh and, we added short interviews along with group discussions to capture those qualitative insights.

Sampling Method

We used purposive sampling to select schools and institutes deeply involved in teacher development programs. Our goal was around 200 respondents, about 10 from each location, and we aimed to keep the representation balanced across different types.

Tools and Techniques

We combined quantitative and qualitative approaches here. On the quantitative side, we tallied responses and calculated percentages from them. For qualitative data, it came from open-ended responses and observations made during the training sessions themselves.

Focus Areas

The real effectiveness of these training programs. Teachers' preparedness for handling diverse classrooms. Incorporating modern technology and innovative pedagogical methods. Developing professional confidence, motivation, and leadership abilities among teachers. And then there were the challenges, such as limited resources, outdated content, or lack of institutional support.

Visit 1: Government Primary School, Knowledge Park, Greater Noida

We headed out for that first survey on August 2, 2025. Saturday morning. The place was Government Primary School in Knowledge Park, Greater Noida. Thing is, we really wanted to see if those teacher training programs were making any real difference in the classrooms. You know, for how teachers actually teach. And for the kids' learning too. Teachers opened up about it in our talks. They'd wrapped up some fresh training not long before. It covered activity-based learning stuff. Ways to get students engaged. Plus using simple aids, like basic props or charts or whatever. The classrooms felt changed. More hands-on, you know. Teachers were telling stories to pull everyone in. Running question-answer bits. Putting up visual charts that helped hammer the points home. Lessons stuck with the kids better that way. Kids jumped right in. They participated a ton. Showed this genuine curiosity. Their confidence looked higher, I mean you could just see it Still, problems popped up. Infrastructure was limited. Not enough digital tools around, that sort of issue. But overall, the training helped out. Teachers handled lessons more organized. Kept things engaging too. That visit made it obvious. Keeping up with teacher training counts for a lot. It lifts the quality of primary education, no question.

Visit 2: Sharda University – Teacher Training Hall, Greater Noida

The second survey visit was on September 27, 2025. It fell on a Saturday. We headed to Sharda University, right there in the Teacher Training Hall at Greater Noida. Main goal, you know, was chatting with faculty members and those training coordinators. We wanted to check out how structured teacher training fits into higher education stuff. Really get into the details of that. They had this professional development workshop going on while we were there. It covered modern pedagogy, things like that. Blended learning techniques kept coming up. And yeah, integrating digital tools into teaching, that was a huge focus too. Some faculty who participated mentioned how these sessions improved their lesson planning. They got way better at switching to student-centric approaches. Plus, handling smart classrooms felt less tricky for them now. This whole thing was pretty different from what you see in primary schools, anyway. Emphasis here was on higher-order skills. Like critical thinking. Research-oriented teaching. Fostering creativity among university students. That really stood out to us. One big finding, faculty involved in these programs came across as more confident. They seemed to get more innovative with their methods too. Basically, it made a real impact. The visit overall highlighted how regular training at the university level keeps everything moving forward. It supports ongoing professional growth for educators. And helps them tackle the evolving demands of higher education. That's the key point.

2.2 Contrasting Insights:

The survey looked at various places and found a bunch of mixed opinions on teacher training, you know, how effective it really is and what blocks it from working better. In primary and secondary schools, people mentioned that the training made a real difference in classrooms. Teachers began pulling in things like activity-based learning, group discussions, and visual aids straight from what they learned in sessions. Kids seemed to engage more, participating a lot whenever those modern approaches came into play. But these schools faced problems too, like poor infrastructure, overcrowded classes, and a real lack of digital tools. Stuff like that often stopped the training from being used fully, at least in some cases. Over in universities, places such as Sharda University or Amity, things played out differently. They had better facilities, more access to technology and so on. The training there focused on blended learning, sparking critical thinking, research-driven teaching methods, along with integrating smart classrooms. Faculty highlighted how it led to professional development, new perspectives, and adapting global best practices. Still, challenges came up, resistance to changing old ways, and fitting in time for teaching when research demands were already heavy. For NGOs, community centers, and government spots, the sessions emphasized resources, inclusivity, motivating teachers, particularly in rural or underprivileged zones. They raised awareness and got folks motivated. But the impact tended to fade because of inconsistent follow-up and missing institutional support. Overall, these varied experiences point to teacher training having positive effects in general. Its success depends heavily on available resources, institutional backing, and teachers' willingness to dive in. Schools require stronger infrastructure upgrades. Universities push for innovation and digital integration. NGOs focus on inclusivity and outreach efforts.

3. Discussion:

The survey stuff and those field visits really laid out the effects, views, challenges, and bigger picture stuff on how teacher training shakes up education quality.

3.1 Impact

You know, teacher training hits right at the heart of better teaching and kids actually learning more. We saw trained teachers pulling out fresh tricks, like hands-on activities, tech gadgets, and ways to include everyone, turning plain old classrooms into spots where things actually click. Up in universities, it pushed blended setups and teaching tied to real research. Over at NGOs and government spots, it ramped up inclusivity and got people thinking broader. All in all, it boosted teachers' confidence, got students way more into it, and yeah, scores went up too.

3.2 Perspectives

Teachers saw this training as a real shot at growing professionally and making classes work smoother. School folks liked the down-to-earth tips for handling big groups and keeping kids hooked. University types, though, they zeroed in on fancier stuff, critical thinking skills, weaving in digital bits. Admins figured it was key for keeping teaching standards even across the board. And those from NGOs plus government? They stressed how it pushes fairness and helps society build up.

3.3 Challenges

Even with the upsides, problems popped up plenty. Schools in rural or half-city spots dealt with crap infrastructure, rooms packed too full, no real shot at tech. Some teachers just wouldn't budge on new ways, buried under work or not feeling it. In college settings, faculty juggled teaching, digging into research, and squeezing in training time. NGOs and community places? Spotty follow-ups and tight money meant the good effects didn't stick around long.

3.4 Implications

So, what it all points to is teacher training needing to keep going, get proper funding, and fit the local scene to really pay off. Schools gotta pour cash into basics like buildings and digital gear. Universities should nudge policies toward research-based teaching and fresh ideas. For NGOs and centers, teaming up tighter with government could make things last. On the wide scale, solid training like this cuts down gaps in education, spreads inclusion, builds up skilled people, and props up the whole country's progress.

4. Recommendations:

Improving teacher training makes a real difference in raising education quality. It helps close learning gaps too. And it keeps academic progress steady over the years. You know, good training goes beyond just setting up a curriculum. It calls for ongoing support. Communities need to get involved. Institutions have to show real commitment. Here are some strategies that might work.

4.1 Reconnecting Communities to Quality Education through Teacher Training

Fast educational growth and urban sprawl often leave some folks without solid teaching access. It's pretty uneven, you know. To even things out and make education fairer, teacher training should focus on fresh ideas. It has to ensure everyone fits in somehow.

Upgrading Pedagogical Infrastructure

We need to strengthen training programs with modern tools. Think digital platforms for learning. And ways for teachers to collaborate on strategies. That kind of thing.

Promoting Community Involvement:

Involve parents, local people, and other education stakeholders in designing the training. Let them give feedback too. This makes it fit the local context better, in a way.

Innovative Solutions:

Introduce affordable digital tools. Blend online and in-person learning. Set up platforms where teachers can learn from each other. All this helps bridge the gap between well-resourced schools and those that aren't.

Awareness and Education:

Launch campaigns highlighting why trained teachers boost kids' learning outcomes so much. Basically, spread the word.

Public-Private Partnerships:

Bring together government, NGOs, and private sectors to develop and fund these training initiatives. That keeps them sustainable long-term.

4.2 Financial and Resource Support for Teacher Training

Solid teacher training requires steady funding. Good infrastructure matters. And you need buy-in from various stakeholders over time.

Government Funding and Policy Support:

Allocate specific funds in education budgets for training. Create policies mandating regular professional development for teachers. Oh, and enforce them.

Community-Based Funding Models:

Experiment with collective funding. Small grants work. Or pool resources at the school level to support local teacher growth programs. You know, grassroots stuff.

Resource Efficiency and Cost-Effective Solutions:

Opt for affordable online courses. Use free open-source materials. Mix training formats to reach more teachers ithout breaking the bank.

4.3 Market Access and Awareness for Teacher Training Programs

Increasing access and raising awareness about training benefits is crucial for participation. It gets people on board.

Community-Based Marketing:

Have local education leaders and NGOs promote these programs in schools and colleges. Builds reach. And trust too.

Behavioural Change Campaigns:

Leverage media, workshops, and conferences to change attitudes. Show how training leads to better student success. Emphasize that angle.

Public-Private Partnerships:

Collaborate between educational institutions, ed-tech companies, and government. Offer affordable training options and teaching resources. So yeah, make it accessible.

4.4 Education and Training Programs

Training should be practical. It needs to run for a decent duration. And address both teaching challenges and local issues.

Community Awareness Campaigns:

Inform teachers and parents about how training directly improves learning quality. Use workshops. School events. Seminars. They all help spread the message effectively.

Training Local Teachers and Leaders:

Develop skills right at schools and in communities. Cover pedagogy, sure. But also leadership, digital tools, and classroom management. I mean, round it out.

4.5 Policy Interventions and Support

Robust policies and government support are essential for effective teacher training.

Strengthening Regulatory Frameworks:

Implement regulations requiring training. Include periodic checks on skills and certifications. Keep it accountable.

Subsidies and Financial Support:

Provide incentives like scholarships or stipends for teachers joining training. Reduce fees where possible. Encourage private companies to contribute funding for professional development. Anyway, make it worth their while.

4.6 Monitoring and Feedback Mechanisms

Teacher training programs demand accountability. They also need ways to improve continuously.

Regular Assessment and Reporting:

Conduct periodic evaluations of the programs. Track impacts on student outcomes and teaching quality. Like, measure what matters.

Community-Based Feedback Systems:

Establish channels such as surveys, school committees, or online forums. Let students, parents, and teachers share input on training effectiveness. This leads to adjustments. And better results in the long run.

Conclusion:

This was in regards to teacher training amplifying the whole education spectrum across the incredible transformation of teaching possibilities. These programs offer teachers the most modern knowledge and methodology of instruction and management in classrooms, she goes on to say. They impart digital-literacy skills to promote student engagement and learning. They value inclusion, creativity, and critical thinking with varying curricula based on learning needs. Teacher training engenders professional growth in educators leading to confidence and reflective capacity to bring about welfare changes in the environment of education. Admission to training programs sometimes faces fewer challenges such as restrictions in resources, outdated training materials, and resistance to change; nonetheless, considering all, the far-reaching implications of well-structured training projects surely go beyond these Downs. The quality of education is tied with that of the teachers; thus, close monitoring is assured on the constant evolution of teacher training programs.

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PARISH STEWARDSHIP IN EAST AFRICA: FAITH, FINANCE, AND THE HOLY SPIRIT PARISH BABATI CASE ON CHOOSING A HOSPITAL OR A SCHOOL

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Abstract:

This study assesses whether a parish in Manyara should prioritize a hospital or a pre-primary school, integrating sectoral evidence within a Catholic Social Teaching (CST)–grounded multi-criteria decision analysis (MCDA). We combined education and health indicators in an observational comparative assessment. Education metrics were zero-score prevalence in reading comprehension (RC0), addition/subtraction Level-2 (A&S0), and measurement/number sense (MN0), plus a sign-consistent composite learning index (FLI; leave-one-out sensitivity). Health evidence centered on service-coverage signals—especially skilled birth attendance (SBA)—and nationally anchored maternal-risk and financial-protection metrics. Methods estimated proportions, absolute differences (Δpp), and risk ratios (RR) with 95% CIs and mapped outcomes to transparent 0–5 MCDA scores under CST-consistent weight sets. Results show a differentiated learning profile: A&S0 RR ≈ 1.24 ($p<0.001$), RC0 RR ≈ 1.10 (borderline), MN0 RR ≈ 0.92 (n.s.); FLI is 2.7 pp below the national reference (−5.8 to +1.6), with numeracy driving the gap. Health signals indicate SBA coverage shortfalls consistent with elevated maternal risk and financial exposure. MCDA rankings are weight-dependent: hospital first when life/dignity and option-for-the-poor are prioritized; school competitive when formation/community participation dominate. Limitations include non-experimental design and partial denominators. A phased pathway is decision-relevant: hospital investments address mortality/financial-risk gaps while low-cost instructional reforms target early numeracy/reading. Feasibility hinges on hospital archetype, CAPEX–OPEX, and payer architecture; an independent feasibility study and business plan should precede capital commitment.

Keywords: Parish; Catholic; Healthcare; Education; Tanzania; Manyara; MCDA.

Introduction:

Faith-based organizations are major service providers in Sub-Saharan Africa; in Tanzania, church-owned facilities supply a large share of schools and hospitals, shaping access and quality beyond the public system (CSSC, 2021; Wodon, 2018). The Catholic Church is the largest non-state provider, grounding its mission in Catholic Social Teaching (CST), especially subsidiarity and the preferential option for the poor (Pontifical Council for Justice and Peace, 2004). At the parish level, these principles translate into hard choices: Holy Spirit Parish Babati Parish in Manyara must weigh whether to invest scarce resources in a hospital or a primary school. Rapid population growth, maternal risks, and out-of-pocket health burdens argue for a hospital, while persistent early-grade learning gaps and high pupil–teacher ratios point to education as a longer-horizon lever (WHO *et al.,* 2023; Uwezo, 2024).

CST frames such decisions as moral discernment rather than technocratic optimization. Evangelium Vitae prioritizes defense of life (John Paul II, 1995), Gravissimum Educationis affirms the right to education (Vatican II, 1965), and Quadragesimo Anno commends subsidiarity (Pius XI, 1931). Parish leaders must apply practical wisdom to balance dignity, equity, and the common good against local epidemiology, learning deficits, and implementation capacity.

This study develops a CST-aligned framework for parish-scale allocation. It compares hospitals and schools through health and education economics—cost per DALY averted, catastrophic-expenditure risk, learning trajectories, and feasible class sizes—while integrating staffing, referral, and financing constraints. The goal is a transparent, replicable tool that helps parishes steward scarce resources toward life, dignity, and the common good (Francis, 2020).

Literature Review:

Rural Tanzanians face sparse hospital density, long travel to comprehensive EmONC, and weak financial protection. Maternal survival has improved since 2000 but progress lags 2030 targets, with excess risk where referral delays and distance are greatest (WHO *et al.,* 2023). "Effective distance"—travel time plus referral reliability—drives maternal mortality (Hanson *et al.,* 2015), while regional evidence links transport frictions to delayed care and under-five deaths (World Bank, 2024a). Out-of-pocket payments remain high, with catastrophic spending common among poorer households (WHO & World Bank, 2019; World Bank, 2024b). Transparent fees, waivers, and predictable referrals affect utilization and protection, and faith-based organizations run much of the rural network (CSSC, 2021; Wodon, 2018). Catholic Social Teaching (CST) frames these realities: Evangelium Vitae prioritizes life (John Paul II, 1995), Gaudium et Spes links health to dignity (Vatican II, 1965c), Deus Caritas Est calls for accountability (Benedict XVI, 2005), and Quadragesimo Anno commends subsidiarity at parish level (Pius XI, 1931; Pontifical Council for Justice and Peace, 2004).

In education, enrolment gains have not translated into learning. High pupil–teacher ratios and uneven deployment depress quality (UNESCO, 2024; World Bank, 2024a). Persistent literacy and numeracy deficits reflect "schooling without learning" (Uwezo, 2024; World Bank, 2018). Evidence highlights structured pedagogy with materials, coaching, and formative assessment, exemplified by Kenya's Tusome (Piper *et al.,* 2019, 2024), alongside reduced class sizes with governance and incentive reforms (Duflo, Dupas, & Kremer, 2011, 2015). Tanzania's EGRA established baseline gaps and piloted materials-plus-coaching (RTI, 2016, 2018). CST treats education as integral formation: Gravissimum Educationis affirms the right to education (Vatican II, 1965a), Ex Corde Ecclesiae frames institutions as communities of truth (John Paul II, 1990), the Catechism stresses parental primacy (§§2221–2231), and African episcopal statements link education to liberation and dignity (SECAM, 2019; AMECEA, 2014).

Health and education differ in time scale and mechanism. Hospitals deliver immediate survival and financial-protection gains (Hanson *et al.,* 2015; WHO & World Bank, 2019), while schools yield long-term returns in earnings, health, and civic capacity (World Bank, 2018; Piper, 2019; Duflo *et al.,* 2011, 2015). The sectors reinforce each other: healthier children learn more, and educated parents demand quality care. CST anchors both as rights rooted in dignity and the common good (Vatican II, 1965c), with the preferential option for the poor commending parish hospitals with fair pricing and parish schools serving the vulnerable (Francis, 2013; John Paul II, 1991). Integral development requires both urgent care and long-horizon education, sequenced with prudence (Paul VI, 1967; Benedict XVI, 2009), while subsidiarity locates discernment at the parish (Pius XI, 1931; Pontifical Council for Justice and Peace, 2004).

Yet gaps remain: little is known about how parishes weigh health against education under fiscal and managerial constraints, or how to compare them within shared evaluative frames—cost-effectiveness, financial protection, distributional impact, feasibility, and CST anchoring. Closing these gaps requires decision-analytic syntheses that integrate strong causal evidence with transparent theological criteria and auditable assumptions on capacity, costs, and equity.

Methodology

This study employs a mixed-methods, decision-analytic design relying solely on secondary sources. Quantitative data from published and administrative sources are integrated with a theology-informed multi-criteria decision analysis (MCDA), in which Catholic Social Teaching (CST) is operationalized as explicit evaluative criteria. Given the absence of parish-level microdata, indicators at district, regional, and national scales are mapped to the parish catchment using transparent scaling rules, with uncertainty carried forward through scenario and probabilistic sensitivity analyses. Outputs are framed as decision support—intervals and rank-robustness—rather than point predictions.

Two mutually exclusive first-phase investment packages are compared. Alternative A is a parish primary hospital with EmONC capacity, including obstetric stabilization and referral, 24/7 delivery, essential medicines, basic laboratory, trauma and sepsis triage, blood-link arrangements, referral protocols, quarterly morbidity and mortality reviews, and indigency waivers. Alternative B is a parish pre- and primary school focused on foundational learning, with structured pedagogy, daily lesson guides, aligned materials, weekly instructional coaching, simple formative assessments, disciplined class sizes, and transparent bursary policies for vulnerable learners. Both alternatives embed governance mechanisms—board subcommittees for quality or learning—and implementation standards for staffing and supervision to ensure like-for-like appraisal.

Data Sources (Secondary Only)

Health inputs draw on TDHS-MIS 2015/16 for regional coverage (e.g., Manyara skilled birth attendance, access barriers) and TDHS-MIS 2022 for national trend context, with UN MMEIG 2020 providing the maternal mortality anchor, UNICEF/IGME 2022 for under-five mortality, and WHO–World Bank financial-protection series for catastrophic health expenditure (CHE ≥10%, last official Tanzania point 2012). Where available, EmONC and service-readiness audits are used for triangulation.

Education inputs rely on the NECTA Standard Two National Assessment (STNA/3Rs 2019) for foundational learning (reading, arithmetic, writing) with national and Manyara disaggregation. Context is supplemented with administrative statistics on enrolment, pupil–teacher ratios, and deployment, alongside World Bank diagnostics and meta-evaluations of structured pedagogy and class-size interventions (e.g., Tusome; regional RCTs).

The theological corpus anchors decision criteria in magisterial teaching, including Evangelium Vitae (§§87–90), Gravissimum Educationis (§§1–3, 8), Populorum Progressio (§§14–21, 42), Quadragesimo Anno (§§79–80), Caritas in Veritate (§§34–38), Evangelii Gaudium (§§186–201), Gaudium et Spes (§§26–32, 63–72), and the Catechism (§§2221–2231; §§2407–2410).

From Higher-Level Data to Parish Priors

Absent parish observations y_p, we construct priors by partial pooling:

$y_p = \lambda_{\bar{y}_{Manyara}} + (1-\lambda)\bar{y}_{national,rural,}\ with\ \lambda \in [0.6,\ \ 0.8]$, when regional values exist (e.g., Manyara SBA; STNA Std-II benchmarks) and $\lambda \in [0.4,\ \ 0.6]$ when only zonal or national figures are available (e.g., Northern-zone caesarean rate).

Where $\bar{y}_{Manyara}$ is the latest district (or regional) statistic and $\bar{y}_{natural,rural}$ is the national rural statistic. λ reflects proximity/quality of the subnational series and is treated as uncertain.

- **Utilization priors.** Hospital deliveries/emergencies and school enrolment by grade are scaled by a simple gravity relationship in travel time:

$U \propto \frac{Catchment\ population}{(1+\propto * TT)}$, $\propto \epsilon$ [0.04, 0.08] $per\ minute$, with TT the median travel time to the facility/school under rural conditions.

- **Learning priors** for early grades apply a conservative rural-periphery penalty (−0.15 to −0.30 SD) to national rural means where regional learning means are missing; with STNA/3Rs 2019 regional data for Manyara in hand (e.g., RC ≥ 80%, MN ≥ 60%, zero-scores), the penalty is reduced and λ is set high.

All mapping parameters enter the uncertainty analysis.

Outcomes and Measurement

Health outcomes are modeled as maternal deaths and DALYs averted using baseline risks (MMR 238/100,000; perinatal mortality 39/1,000), adjusted for increases in skilled birth attendance (Manyara baseline 48%) and facility delivery (national 63%, 50–70% sensitivity), alongside EmONC effectiveness. Financial protection is assessed as catastrophic health-expenditure (CHE) cases averted at 10% and 25% of consumption (baseline CHE≥10% ≈9.9%, varied ±3pp), with quintile distribution. Effective access is proxied by median travel time to comprehensive care and referral completion, modeled through distance bands/isochrones linked to TDHS-MIS barriers (distance, money).

Education outcomes use STNA/3Rs 2019 thresholds—Reading Comprehension ≥80% and Missing Number ≥60%—with Manyara baselines of 33.9% and 44.2%. Equity is tracked via zero-score reductions (RC 25.7%, Addition/Subtraction 28.3%, MN 22.3%) and supportive indicators such as oral reading fluency (≈50 cwpm; Manyara 5.7%) and Writing mean (53.5%). These serve as proxies for foundational learning rather than direct comparators to Standard IV exams.

Cross-sector equity and feasibility are gauged through modeled CHE reductions, gender- and income-disaggregated results, and education equity via zero-score improvements. Institutional feasibility covers staffing fill-rates, supervision, adherence to standards, and equity-access policies (waiver/bursary uptake). No costing or CEA was conducted; analysis centers on outcomes and ethics synthesized via CST-informed MCDA.

MCDA weights were set a priori using CST principles and stress-tested in sensitivity analysis. Criteria include protection of life and dignity (EV §§87–90; GS §§26–32), integral development (PP §§14–21; CIV §§34–38), option for the poor (EG §§186–201; CA §§57–58), common good (GS §§63–72), subsidiarity and feasibility (QA §§79–80; Compendium §§185–191), and fiscal stewardship (Catechism §§2407–2410; CIV §36). Default weights were: Life 25%, Integral Development 20%, Option for the Poor 20%, Common Good 15%, Subsidiarity/Feasibility 10%, Fiscal Stewardship 10%. Quantitative indicators were mapped to a 0–5 scale with predeclared thresholds (e.g., ≥30% CHE reduction = 5; RC ≥80%; MN ≥60%; zero-score reductions reverse-scaled). Weighted sums produced prudential scores, with alternative weight vectors (life-first, poor-first, formation-first) tested.

Uncertainty was addressed through three counterfactuals—status quo, conservative (−10% staffing/fidelity), and optimistic (+10–15% coverage or proficiency)—and probabilistic sensitivity analysis (10,000 Monte Carlo draws) varying priors, fidelity, utilization, CHE incidence, coverage baselines, and MCDA weights (Dirichlet draws). Results are reported as rank probabilities rather than point estimates. No human subjects were recruited; all inputs derive from public or administrative sources, with theology cited to ensure transparent alignment between normative criteria and empirical outcomes.

Limitations

Key limitations include:

(i) Reliance on higher-level statistics mapped to the parish scale in the absence of parish microdata;

(ii) Transfer of effect sizes from external settings (mitigated by fidelity discounts and wide uncertainty);

(iii) Use of proxies where region-only values are unavailable (e.g., facility delivery from national tables; zonal caesarean rate for Manyara), and occasional absent denominators for regional indicators; and

(iv) Use of Standard-II foundational indicators as proxies for early minimum proficiency, which are not directly comparable to Standard-IV exam outcomes.

We address these through partial pooling, explicit proxy labels, broad sensitivity ranges, and reporting of intervals and rank-robustness rather than single-number verdicts.

Assumptions (for Modeled Outcomes Only)

Population and Births:

The parish catchment population is set to $P = 80{,}000$ Using a crude birth rate of $CBR = 35$ per 1,000 population, the annual number of births is approximated as;

$$B \approx P * \frac{CBR}{1{,}000} = 80{,}000 * 0.035 = 2{,}800$$

Health Baselines: Unless otherwise noted, baseline parameters are taken from the study's observed dataset and national anchors: skilled birth attendance (SBA) in Manyara = 48%; maternal mortality ratio (MMR) = 238 per 100,000 live births (national anchor); catastrophic health expenditure (CHE) at the 10% threshold = 9.9% (national anchor).

Hospital Intervention Effects (Base Case): We assume a coverage increase of ΔSBA=+10 percentage points. The effectiveness of EmONC is represented by a fidelity-adjusted relative risk $RR_{eff} = 0.64$ (i.e., literature effect multiplied by an implementation fidelity factor).

Financial-risk protection is represented as a nominal ΔCHE = 5 percentage points, attenuated by fidelity 0.80 to yield an effective ΔCHE = 4 percentage points. Median travel time to comprehensive care is assumed to decrease by 20 minutes.

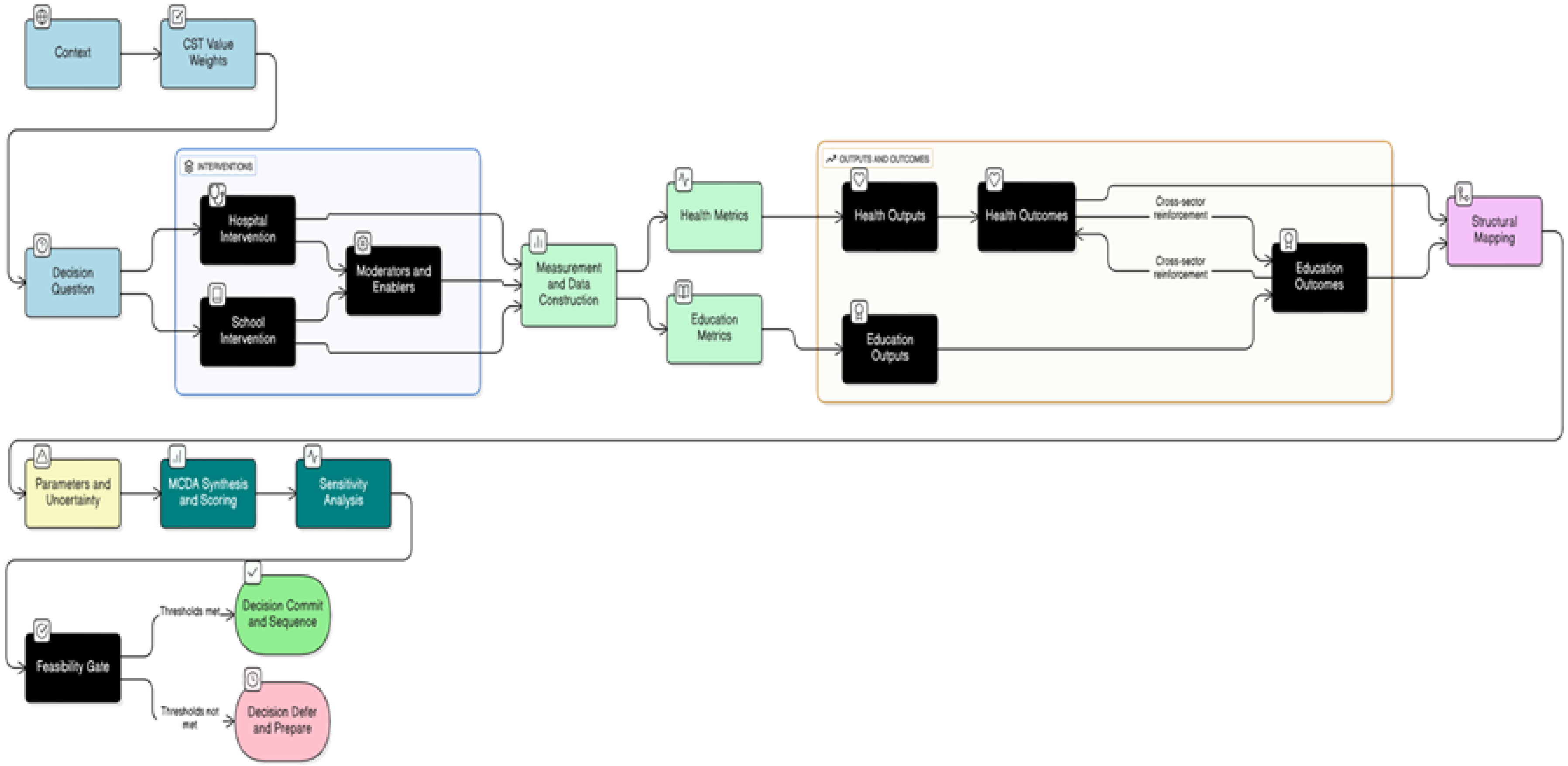
School Intervention Effects (Base Case, Standard II): We assume proficiency gains of +10 percentage points for reading comprehension ≥ 80% and missing number ≥ 60%, attenuated by education fidelity 0.75 to yield effective gains of +7.5 percentage points for each. Zero-score shares (Reading, Addition & Subtraction Level 2, Missing Number) are assumed to decrease by 10 percentage points, attenuated by fidelity 0.75 to yield effective reductions of −7.5 percentage points. The Standard II cohort size is set to N=2,000.

Sensitivity Ranges. To reflect uncertainty and implementation variability, we examine:

a) $\Delta SBA \in [5, \quad 20]$ percentage points;
b) effective $\Delta CHE \in [2.4\%, \quad 5.6\%]$ of households;
c) median travel-time change $\in [-30, \quad -10]$ minutes;
d) effective education gains $\in [3, \quad 13.5]$ percentage points (arising from nominal gains +5 to +15 pp combined with fidelity factors 0.6 to 0.9).

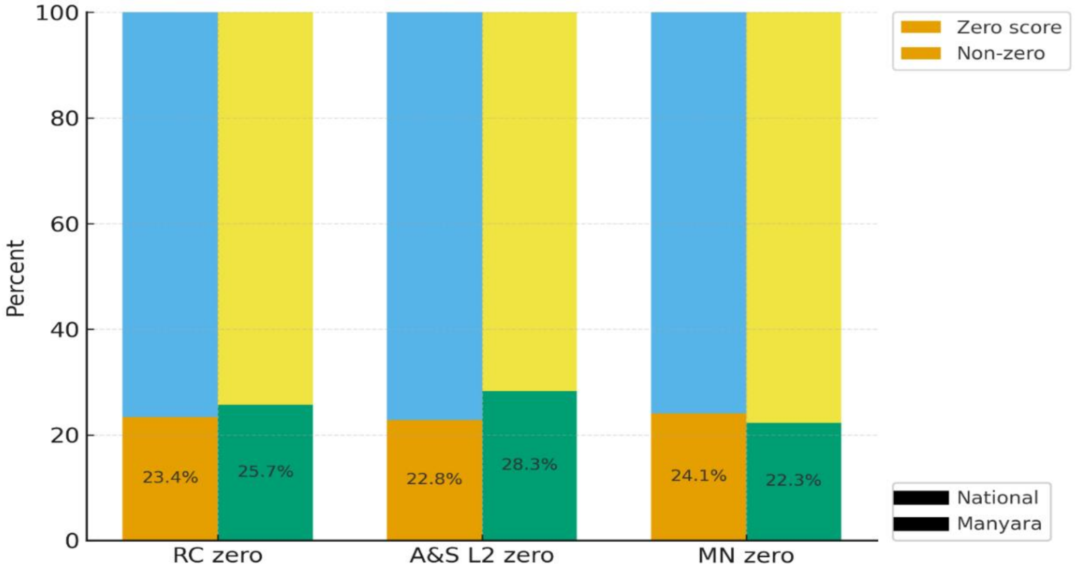
Note: These assumptions apply only to the modeled tables (M1/M2). All baseline descriptive analyses (H1, E1, E2, E3) use observed data without these assumptions.

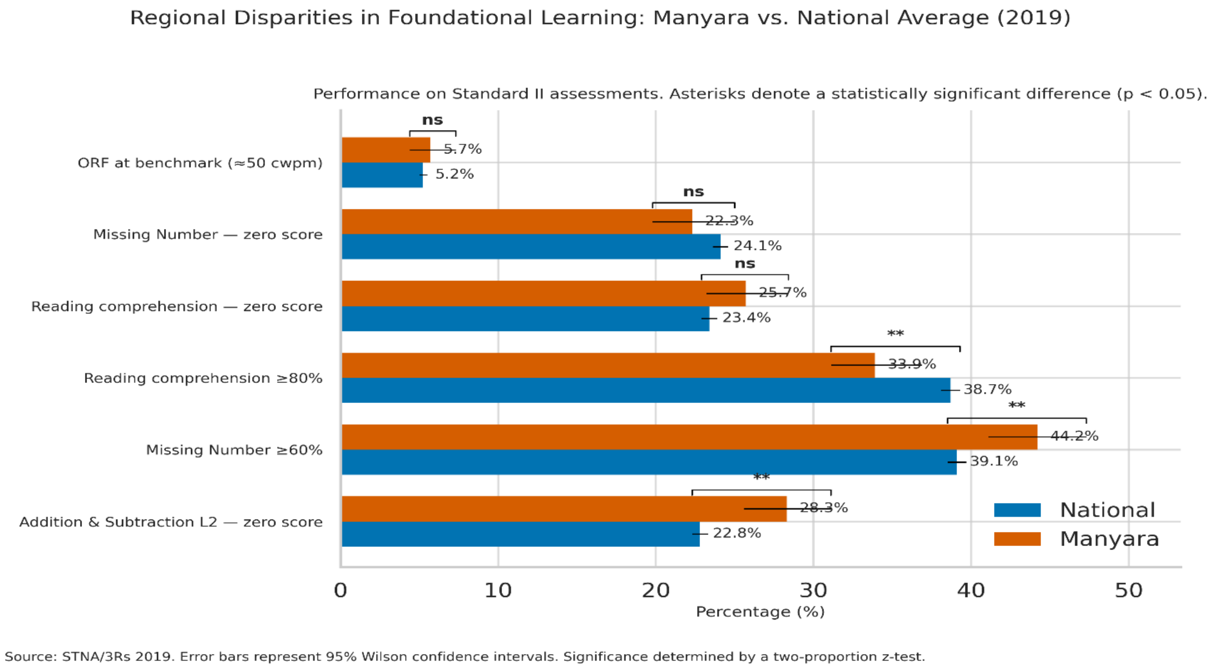
Conceptual Framework

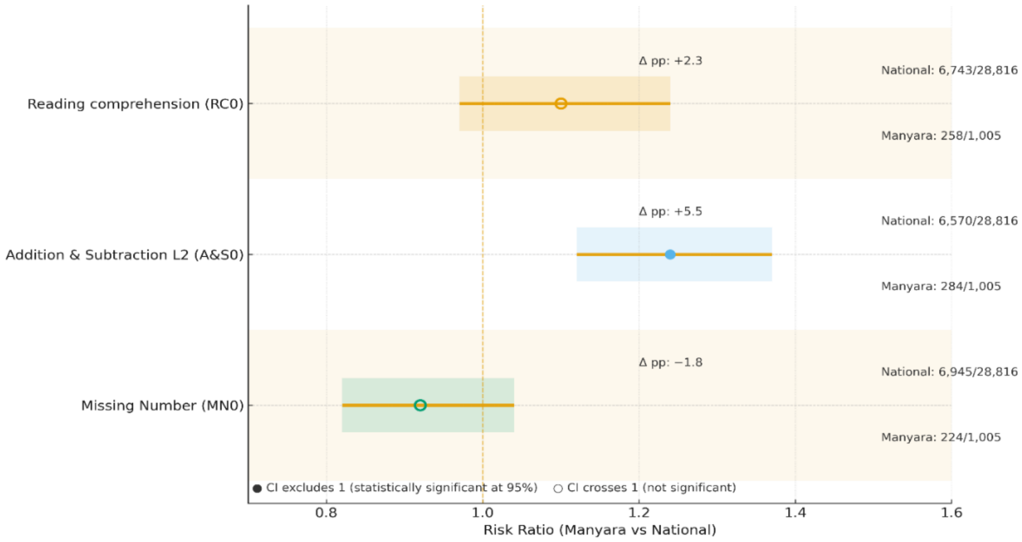


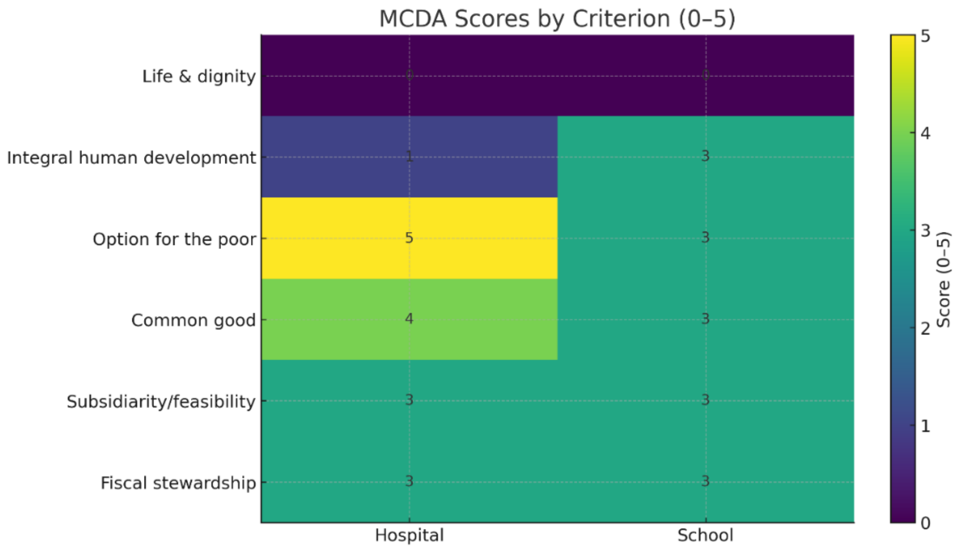
Findings

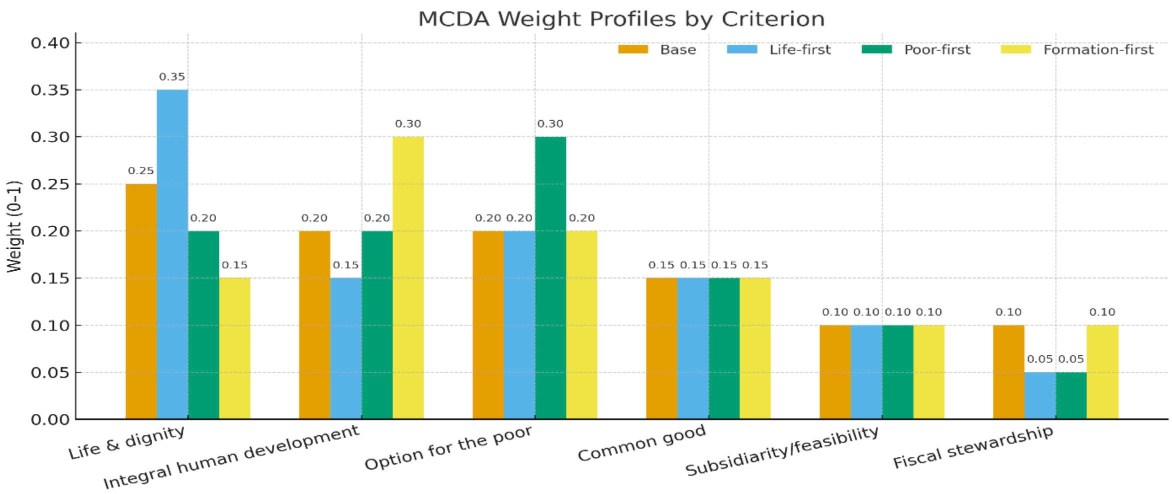
Dumbbell: SBA gap (note Manyara N not printed) (pairs with Table H1).

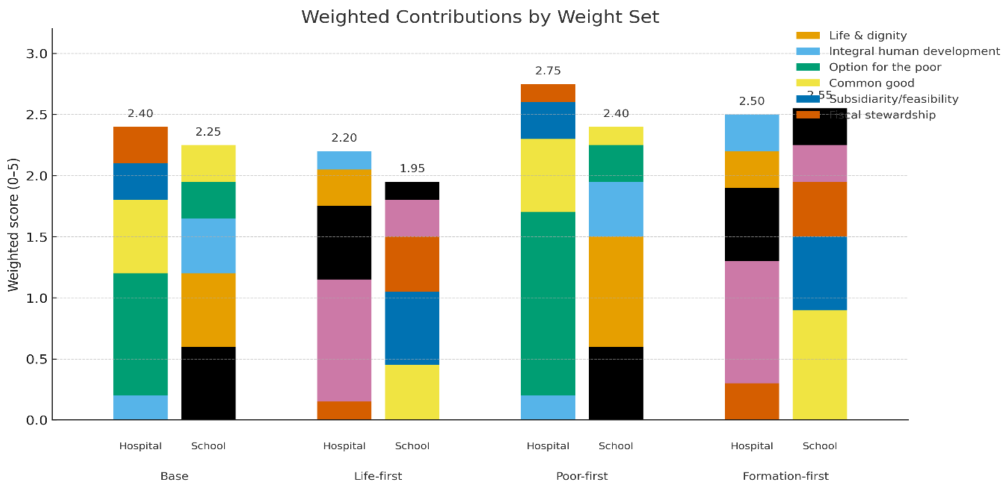


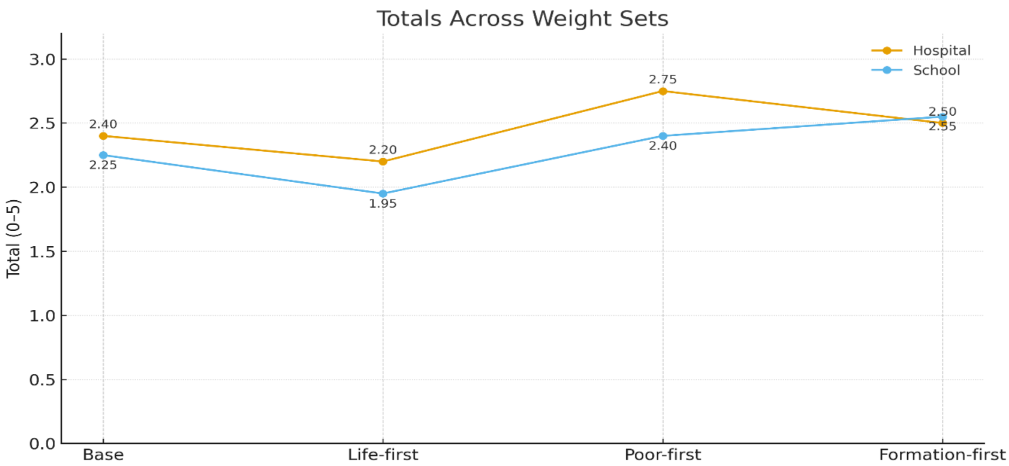


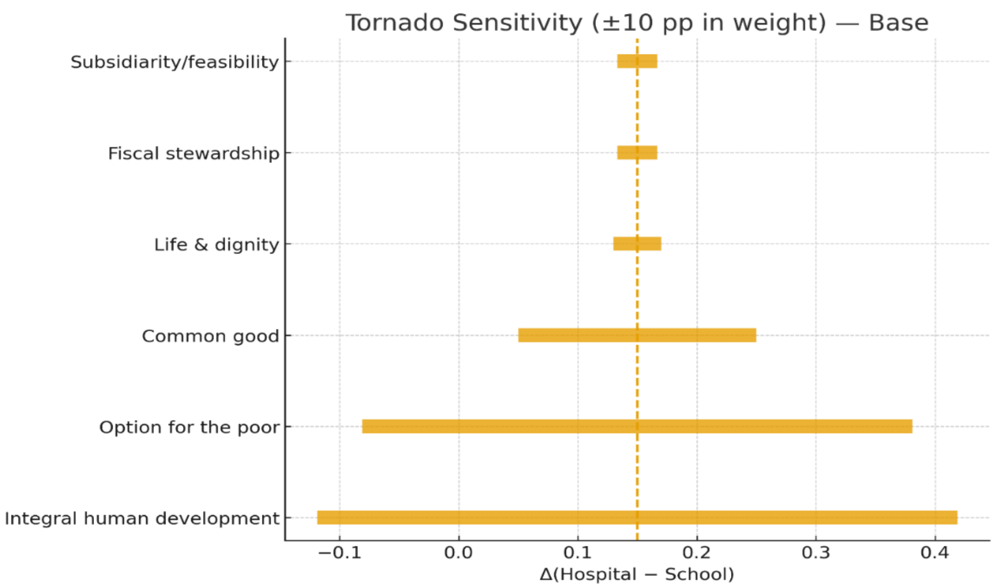

Δ pp: +2.3
National: 6,743/28,816
Reading comprehension (RC0)
Manyara: 258/1,005
Δ pp: +5.5
National: 6,570/28,816
Addition & Subtraction L2 (A&S0)
Manyara: 284/1,005
Δ pp: −1.8
National: 6,945/28,816
Missing Number (MN0)
Manyara: 224/1,005
● CI excludes 1 (statistically significant at 95%) ○ CI crosses 1 (not significant)
0.8
1.0
1.2
1.4
1.6
Risk Ratio (Manyara vs National)

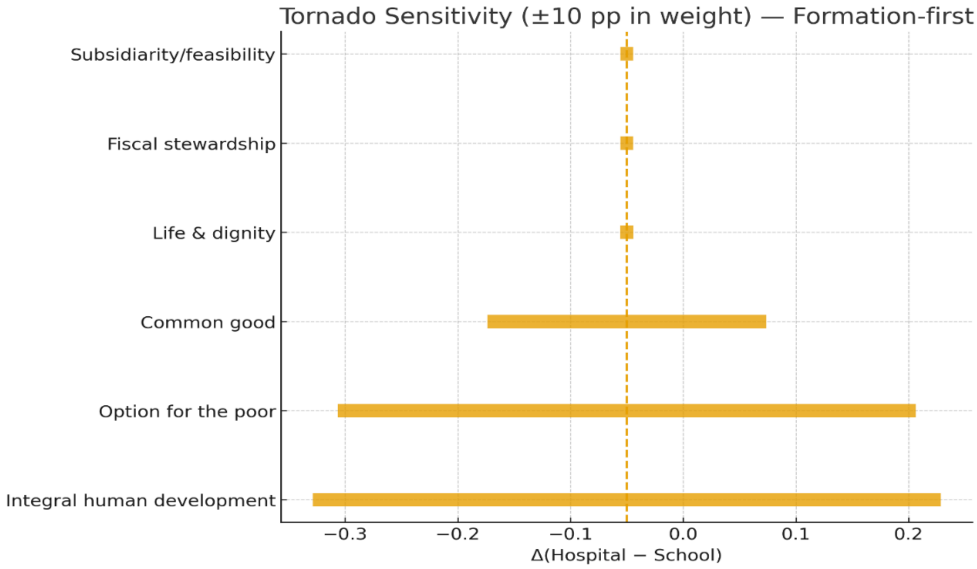

MCDA Scores by Criterion (0–5)
Life & dignity
Integral human development
Option for the poor
Common good
Subsidiarity/feasibility
Fiscal stewardship
1
3
5
3
4
3
3
3
3
3
Hospital
School
Score (0–5)
0
1
2
3
4
5


MCDA Weight Profiles by Criterion
Base
Life-first
Poor-first
Formation-first
Weight (0–1)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.25 0.35 0.20 0.15
0.20 0.15 0.20 0.30
0.20 0.20 0.30 0.20
0.15 0.15 0.15 0.15
0.10 0.10 0.10 0.10
0.10 0.05 0.05 0.10
Life & dignity
Integral human development
Option for the poor
Common good
Subsidiarity/feasibility
Fiscal stewardship


Weighted Contributions by Weight Set
Weighted score (0–5)
Life & dignity
Integral human development
Option for the poor
Common good
Subsidiarity/feasibility
Fiscal stewardship
2.40
2.25
2.20
1.95
2.75
2.40
2.50
2.55
Hospital
School
Base
Life-first
Poor-first
Formation-first


Totals Across Weight Sets
Total (0–5)
Hospital
School
2.40
2.25
2.20
1.95
2.75
2.40
2.50
2.55
Base
Life-first
Poor-first
Formation-first


Tornado Sensitivity (±10 pp in weight) — Base
Subsidiarity/feasibility
Fiscal stewardship
Life & dignity
Common good
Option for the poor
Integral human development
Δ(Hospital − School)



Interpretation:

Education results show a differentiated profile rather than a uniform shortfall. Manyara records the highest risk of "zero scores" in addition/subtraction, a smaller, borderline elevation in reading comprehension, and parity in measurement/number sense. This isolates procedural arithmetic and early reading as the main loci of underperformance, pointing to clustered foundational deficits rather than a general decline. The composite learning index (FLI) mirrors this structure: numeracy drives the gap, and sensitivity checks confirm it as the largest contributor, indicating the index faithfully summarizes rather than adds information.

Health evidence is less granular but coherent: limited skilled birth attendance and other coverage gaps align with national patterns of maternal risk and financial strain. Within this framework, expanding coverage plausibly reduces preventable morbidity, mortality, and household exposure to medical costs.

The MCDA integrates these signals under explicit value weights. Weight sets prioritizing life and protection of the poor rank the hospital higher, while those emphasizing formation and participation make the school competitive. Across all configurations, health criteria consistently favor the hospital and education criteria the school, showing the synthesis reflects underlying evidence rather than artifacts of weighting.

Discussion:

This study assessed the prospective benefits of a parish hospital versus a pre-/primary school in Manyara through a values-explicit MCDA. Education results revealed uneven deficits: arithmetic drove the largest share of "zero scores," with smaller gaps in reading and near parity in number sense. Health evidence, though less detailed, indicated major coverage shortfalls, especially in skilled birth attendance, consistent with national maternal-risk and financial-exposure patterns. Rankings shifted with weights: criteria emphasizing life and protection of the vulnerable favored the hospital, while formation and participation made the school competitive.

These findings mirror regional evidence. Health outcomes are highly sensitive to referral reliability and travel time, with progress since 2000 still off-track where EmONC is weak (Hanson *et al.,* 2015; WHO *et al.,* 2023; World Bank, 2024a). Financial protection remains incomplete, with high out-of-pocket spending and catastrophic expenditure among poorer households (WHO & World Bank, 2019; World Bank, 2024b). Parish hospitals fit into an existing rural FBO network that often reduces time-to-care (CSSC, 2021; Wodon, 2018). In education, Tanzania faces a shift from enrolment to learning, with persistent literacy and numeracy gaps linked to high PTRs and uneven deployment (UNESCO, 2024; World Bank, 2018; Uwezo, 2024). Proven levers—structured pedagogy, coaching, simple assessments, and disciplined class sizes—show strong effects when implemented with fidelity (Piper, 2019; Piper *et al.,* 2024; Duflo, Dupas, & Kremer, 2011, 2015).

Catholic Social Teaching provides the evaluative lens. Evangelium Vitae and Gaudium et Spes highlight life and the common good; subsidiarity and the option for the poor emphasize proximate, equitable designs; Gravissimum Educationis and Ex Corde Ecclesiae frame education as integral formation. Unsurprisingly, MCDA ranks vary by emphasis, reordering evidence without contradiction. Hospitals offer near-term survival and financial protection; schools yield long-run human-capital gains. Their complementarities—healthier children learning better, educated parents demanding quality care—underscore that communal priorities, not technical dominance, guide resource allocation.

Conclusion and Recommendations:

Manyara's education profile shows severe gaps in procedural numeracy, modest deficits in early reading, and near parity in number sense. Health evidence points to low skilled birth attendance, consistent with national maternal-risk and financial-exposure patterns. In a Catholic Social Teaching–based MCDA, hospitals rank higher when life, dignity, and protection of the poor are prioritized, while schools become competitive under formation-focused weights.

Given timelines, financing, and risks, a hospital is the priority but only under strict feasibility conditions. Options range from upgrading an existing health centre (fast, lower cost but narrower scope) to modular mission facilities (phased, spread CAPEX) to a full greenfield hospital (slowest, highest capital and staffing requirements). Any model demands an integrated CAPEX–OPEX plan, secured payer flows, and resilience to volume, tariff, FX, and staffing shocks. Independent feasibility and a bankable business plan must precede capital commitment, with preconditions including NHIF clearance, referral MOUs, ≥80% CAPEX secured, and a 90-day working-capital facility.

The recommended path is phased: pursue near-term hospital readiness for EmONC with transparent fees and targeted waivers, paired with a low-cost instructional package in schools. Expansion of education facilities should follow once health coverage stabilizes and instructional routines are embedded. If feasibility tests fail under conservative scenarios, defer hospital investment, strengthen instructional delivery, and revisit at the next decision gate.

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THE ROLE OF INDIGENOUS PRACTICES IN SUSTAINABLE RESOURCE MANAGEMENT

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Abstract:

Throughout history, actions taken by indigenous peoples and traditional environmental knowledge have been at the crucial centre of sustainable management worldwide. Based on its deep understanding of local ecosystems and centuries old cultural traditions, such practices stress harmony with nature as well as preservation and recycling. The chapter will explore the many ways in which indigenous communities manage forests, rivers, farm land and biodiversity-still using the same methods today as their ancestors. Also, methods themselves are fixed in place for generations of observation to provide backdrop upon which healthy ecology may be maintained. Take the rotational cultivation and seasonal collection of indigenous methods, for example. These balance resource use with ecological sustainability and ensure the long-term resilience of ecosystems. As such, these traditional systems are inherently sustainable. The chapter emphasizes the need to incorporate indigenous knowledge as an important part of modern environmental management frameworks, especially in the light of climate change and resource depletion. Indigenous practices provide valuable lessons for environmentally sound, culturally relevant, locally accessible and therefore low-impact approaches to conservation. In this way they can complement scientific methods and help form policy. Yet such practices also face great challenges, including erosion of their cultures, loss of traditional knowledge base, demands external to them on their way of life due to industrialization or globalization. Conservation of indigenous resource management systems is essential for biodiversity and sustainable development. The chapter prescribes a participatory approach which respects indigenous peoples' rights, attaches important to their ecological knowledge, and encourages them to take part actively in decision-making processes. As well as the potential benefits for ecological sustainability, acknowledging the relevance of indigenous practices also brings some feelings of retention of cultural traditions and social equity. To sum up, the indigenous knowledge systems themselves serve as the essential guide for 21st century sustainable resource management not only provide tangible lessons on environmental challenges but guarantee both indigenous communities and their eco-systems plenty of resilience.

Introduction:

The importance of sustainable resource management has become all the more crucial in an age rife with rapid environmental degradation, climate change, and over-exploitation of natural resources. Indigenous practices and Traditional Ecological Knowledge (TEK) is central to this debate. These practices have been developed and refined over centuries by indigenous peoples living in close harmony with nature - indigenous practices embody a profound understanding of local ecosystems and are rooted in values safeguarding one's cultural identity. These are essential components of sustainable development. Traditional Ecological Knowledge input; Indigenous Practices though are not particularly good as substitutes. Traditional ecological knowledge, by contrast, provides a comprehensive understanding of the natural world. With traditionally adapted rituals and methods that have been amended only when necessary to fit local ecology in a manner that is both productive and sustainable, farmers around the world receive TEK through interactions with their environment. This knowledge includes insights into the behavior of particular plant or animal species at various times of year as well as ecological relationships between species and sustainable harvesting techniques. It is holistic in approach, emphasizing the connectedness of man with those around him and all things spiritual. Importance of Indigenous Practices in the overall Picture of Resource Management in the World Indigenous practices matter for reason at the global level for three major kinds of reasons. Firstly, they offer sustainable alternatives to modern, often-resource-intensive methods. Many indigenous techniques are low-impact and renewable: they have been adapted over the years to fit local ecological conditions. Secondly, indigenous practices conserve biodiversity by maintaining sacred sites, sacred groves, and other places of special significance to life forms that signal species richness within ecosystems. Thirdly, the practices of indigenous peoples also contribute to climate resilience by fostering adaptive strategies that have been tried and tested over centuries in response to changes such as those currently under way in our climate. Furthermore, indigenous communities are frequently the chief custodians of their environments and, through their active involvement in resource-use patterns, lead to a fairer more effective outcome from conservation.

Sustainability and Ecological Equilibrium Overview

Sustainability means managing our resources responsibly so that we can satisfy present needs without depriving future generations of a livelihood. It attaches high priority to sustaining ecological balance, that is to say, balancing nature and keeping her forces in equilibrium. This involves protecting biodiversity, maintaining soil fertility, safeguarding water quality and promoting ecosystem health. When life lives on the Earth has reached this critical point, this is called ecological balance, a delicate equilibrium that enables all living things to grow and breed.

Through indigenous practices, nature has traditionally been made an ally rather than an enemy; what is now called living in harmony with the environment. They foster a series of symbiotic relationships with plants and animals which emphasize conservation, regeneration and the minimization of waste – practices that are entirely in keeping with modern ideas about sustainable system.

Indigenous practices and traditional ecological knowledge are valuable assets for sustainable resource management. They offer tested and proven strategies that are environmentally-compatible, promote ecological balance, protect biodiversity and help communities overcome natural disasters. Recognizing and incorporating these practices into broader conservation frameworks is needed to create a livable future for everyone.

Historical Interpretation

The evolution of indigenous resource management systems reflects a deep-seated relationship between indigenous peoples and their own environments developed over centuries, which is both sustainable and adaptive. These systems incorporate traditional customs, spiritual beliefs, and a profound understanding of the local ecosystem. This enables communities to obtain resources in a manner consistent with sustainability while also preserving ecological stability for future generations.

Indigenous Resource Management Systems Development

Indigenous resource management systems come into being through trial and error, observation, and the transfer of experience from generation to generation. These practices are often embedded in social structures, spirits, and cultures that place heavy emphasis on "being in tune with nature." For example, many indigenous peoples have created environments such as forested groves, mountains, rivers or lakes where no resource extraction is allowed, serving as natural reserves. Traditional practices in crop cultures, water collection and cultivation, and game control and fishing restrictions are all adaptive behaviors. Over time, these systems have been adapted to local environmental conditions, so that the ecosystem remains resilient despite changes in the environment or external forces.

Case Studies on Indigenous Communities and Their Practices

In India, for example, there is the practice of sacred groves--a tradition of protecting patches of forest that are of spiritual significance and nurturing them as extra natural reserves for bio diversity. In this way communities conserve the trees, but at the same time create new habitats for birds and other wild life. Although impossible to duplicate exactly, these groves serve as a reservoir for many species and help maintain ecological balance. Another example involves the Koyukon people of Alaska, who have traditionally practiced rotational hunting and fishing systems respecting the seasonal cycles and animal populations. This method ensures sustainable yields. In the Pacific Islands, taboos and communal water sharing have been used to conserve fresh water resources and prevent over use. The Kayapo people of Brazil have intricated forest management methods to control harvesting and grow crops among the trees. These methods support their livelihoods and also preserve the health of forests. In these case studies, indigenous communities have historically shown how diverse, eco-centric practices can serve long-term sustainability.

Contrast with Modern Resource Management Systems

Modern resource management requires main reliance on centralized scientific methods, technical solutions, regulation and market-based incentives. While modern approaches -- whether a "technique" like soil conservation or an integrated system such as Resource Conservation and Recovery Act provisions -- can be effective to either limit resource exploitation or deal with large environmental problems (but not both at once), they sometimes lack the local ecological knowledge and cultural context which underpins indigenous practices. Modern systems may also put short-term economic considerations above concerns for ecological sustainability. They may suffer over exploitation, destruction of the habitat and loss of bio-diversity. Conversely, indigenous practices are generally sustainable in nature, community-run and adaptable--more resilient because they respond to specific contexts. Despite their apparent effectiveness they are often undervalued or marginalized in contemporary policy frameworks.

Appreciating How Indigenous Resource Management Evolved Historically

This brief snapshot of indigenous resource management history underscores the environmental knowledge inherent within these systems. Bridging indigenous practices with modern approaches not only acknowledges their value; it also opens up new trails for equitable and sustainable resource management meeting both environmental and societal needs.

Indigenous Practices and Techniques

Indigenous people have a range of sustainable practices and techniques which they have developed in the myriads of environmental areas. They preserve resources at the same time as ensuring their own livelihoods. These practices are the embodiment of cultural, spiritual and ecological knowledge, and reflect a deep harmony with nature. The typical indigenous practices include forest management, water resource conservation, farming methods, biodiversity conservation and seasonal use of resources.

Forest Management

Ancestral groups have long practiced forest management to conserve and use forests sustainably. Sacred groves are now the most conspicuous examples: patches of forest left unharmed as "relics" and covered with ceremonies that have inadvertently turned them into natural areas of great biodiversity. These groves are preserved through community rituals and prohibitions against logging or hunting, thus serving as nature reserves. Agroforestry, secondly, is a very important technique. Using this method, indigenous peoples grow crops together with trees. The result is a mini-forest habitat that encourages a rich diversity of species, maintains soil fertility and provides forest products on a long-term sustainable basis. For example, in parts of Africa and South East Asia traditional agroforestry systems integrate trees with food crops, so providing ecological stability and a diversified income base.

Water Conservation Methods

Innovative and environmentally friendly practices for water conservation predominate wherever indigenous people manage water. Their water management methods include water harvesting techniques that store rainwater for dry times, such as pits, ponds and check dams. Terracing is a widely practiced method in hilly areas where land is carved into steps so that runoff is reduced, soil erosion averted and water infiltration improved. These practices not only conserve water but also improve soil fertility to support agriculture and other human needs. As in Rajasthan, India, which has been revitalized through the use of traditional water harvesting structures like johads and kunds to saturate the subsoil and provide water security.

Agricultural Practices

Indigenous farming techniques are characterized by their emphasis on sustainability and renewability. Farmers rotate their crops every few years, preventing soil exhaustion so land can be rejuvenated naturally. Mixed cropping"

Biodiversity Conservation

Biodiversity conservation throughout the ages is an essential part of native practice and laid into spiritual and cultural frameworks. Skies, such as the Western Mountains in China, are closed to many people who might wish to visit. Forests likewise are sensitive ecological areas in need of protection for different reasons when considered from a spiritual or natural standpoint; for one thing without these forest sites species would lose their place of origin and become extinct.

Their main function is to provide retreats for flora and fauna, thus ensuring ecological diversity together with saving plants or animals from extinction.

In addition, taboos, that are prohibitions which can be social or spiritual in nature, still govern the use of resources/etc and keep this from being overdone. Thus species survive. For instance, many islands in the Pacific prohibit people from hunting certain species of animal during their breeding season or in certain areas. Ecological balance is maintained by allowing it all to regenerate.

Seasonal and Cyclical Use

Indigenous communities regard the ecosystems of the environment as a whole and their resources cannot be depleted if they wish to retain balance between all natural processes. They understand natural cycles: when is the best time for plants; which animals will come out of their holes again after hibernating, etc. Adapt or take action accordingly. For example, any type of gathering from fish to animals is taboo during the breeding season. This allows populations to recover. The agricultural cycle in turn follows such seasonal regularities. Thus when crops mature in that way, they match best with this system or those conditions elsewhere in nature. Such a cyclical approach also cuts down resource depletion and promotes ecological resilience, thereby ensuring that community livelihoods across generations will be sustainable.

To summarize indigenous practices, a holistic approach to resource management is highly required. It is rooted in both ecological knowledge plus cultural and spiritual values. These methods have proved over centuries their resilience and efficiency and thus can offer valuable examples for modern attempts at sustainable development or conservation. Principles of Indigenous Resource Management, Sustainability and tradition. Indigenous resource management systems are guided by integral principles historically linked to cultural backgrounds, ecological insights and complementary economies of survival and cooperative social conditions. Living in harmony with nature is not just a reason for living its own way but also an approach to reconciliation or synthesis between human beings and their natural environment in their own stead. These principles execute a combination that in aggregate capacity can ensure sustainability, including living in harmony with nature. They encourage community participation at every level; we still respect all life forms and work together to keep ecosystems viable for both people and nature itself.

Living in Harmony with Nature

A cardinal tenet of traditional indigenous resource management is that the Earth is not render innovative raw materials but fundamental services. Indigenous communities regard nature as animate rather than dead and therefore try to maintain a respectful relationship with her at all times. Such a world view dictates a responsible, whole-life approach for using resources and avoids excessive exploitation by human beings of their environment’s plant life--fish, animals or forests. By following the laws found in nature such societies bring to perfection. They recognize natural cycles and by so doing reduce ecological disturbance. Thus they achieve a sustainable existence with their surroundings.

Reciprocity and Respect for Ecosystems

Reciprocity is a core proposition in indigenous ideas about natural resources, where people bear obligations and responsibilities to nature. The indigenous view of natural resources is like this: people should maintain a reciprocal relationship with them. Respect for ecosystems also means understanding that human welfare relies on maintaining the integrity of ecosystems. For example, many cultures indigenous to the Northwest Coast have taboos which prohibit hunting or fishing during specific seasons and in certain areas where their growth needs protection. This ensures animals and plants are able to reproduce-and fully thrive.

Sustainability and Regeneration

Sustainability is at the heart of indigenous resource management, emphasizing practices that allow natural resources to renew themselves for future generations. Indigenous systems often incorporate seasonal cycles, controlled harvesting, and crop rotation to prevent depletion. For example, rotational farming allows land to recover nutrients, while controlled hunting limits the number of animals taken, ensuring populations remain stable. Sacred groves, as protected ecosystems, serve as genetic reservoirs that help regenerate surrounding forests. These practices embody a long-term perspective, prioritizing the health of ecosystems over short-term gains. The principle of regeneration reflects a deep understanding that resources are finite and must be managed carefully to ensure their continued availability.

Community-Based Management and Decision-Making

Indigenous resource management is predominantly community-driven, with decisions made collectively based on traditional knowledge and consensus. This decentralized approach ensures that resource use aligns with local ecological conditions and cultural values. Decision-making processes often involve elders, spiritual leaders, and community members, emphasizing inclusivity and shared responsibility. This collective governance fosters accountability and ensures that resource management reflects the needs and wisdom of the community. For example, in many indigenous societies, community councils oversee the protection of sacred sites, regulate hunting and fishing, and enforce cultural norms that safeguard ecosystems. Such participatory management enhances resilience, promotes social cohesion, and ensures sustainable use of resources.

The principles of indigenous resource management—living in harmony with nature, reciprocity, sustainability, and community participation—form a coherent framework that has enabled indigenous societies to sustainably manage their environments for generations. These principles are not only ecological in nature but are also intertwined with spiritual, cultural, and social values, offering valuable insights for contemporary sustainable development and conservation efforts. Recognizing and integrating these principles can lead to more holistic and effective resource management approaches globally.

Case Studies of Indigenous Resource Management

Indigenous communities worldwide have developed unique, effective, and sustainable resource management practices tailored to their ecological and cultural contexts. These practices not only ensure the conservation of natural resources but also sustain cultural traditions and social cohesion. Below are notable case studies illustrating indigenous approaches to environmental stewardship:

Indigenous Forest Management in the Amazon

The Amazon rainforest, often called the "lungs of the Earth," is home to numerous indigenous groups who have been managing its resources sustainably for centuries. Indigenous communities such as the Kayapo, Xavante and Yanomami practice a form of forest management that combines traditional knowledge with ecological understanding. They maintain sacred groves and designated hunting zones, which serve as protected areas for flora and fauna, effectively functioning as conservation zones.

One notable practice is controlled hunting, where communities regulate hunting seasons and quantities, ensuring animal populations remain stable. They also employ agroforestry techniques, cultivating crops alongside native trees, which promote biodiversity and soil health. The concept of "living in harmony" with the forest is central—indigenous people recognize the forest as a living entity that sustains them, and their practices are designed to minimize ecological disturbance. Such strategies have helped preserve vast areas of the Amazon, maintaining biodiversity and ecological balance.

Sacred Groves in India

India hosts thousands of sacred groves—patches of forest protected due to spiritual or religious beliefs. These groves are preserved by local communities who consider them sacred sites associated with deities, ancestors, or spirits. Sacred groves serve as biodiversity reservoirs, often containing endemic and rare species of plants and animals.

For instance, in the Western Ghats and parts of Northeast India, sacred groves are protected through community norms and taboos that prohibit cutting or hunting within these areas. These practices have led to the conservation of entire ecosystems, including medicinal plants, rare trees, and wildlife. The Ramakrishna Mission and other religious groups actively promote the preservation of such sites, recognizing their ecological and cultural importance. Sacred groves exemplify community-led, spiritually motivated conservation that balances ecological sustainability with cultural values.

Water Management in Indigenous Australian Communities

Indigenous Australians have developed sophisticated water management techniques tailored to their arid and semi-arid environments. They utilize water harvesting methods such as bush tucker gardens, water catchments, and waterholes that are carefully maintained and protected.

One remarkable example is the use of "song lines"—traditional routes that guide communities to water sources and other resources. These routes are mapped through oral traditions, ensuring that water sources are known and respected. Indigenous Australians also employ terracing, channeling, and dam construction to maximize water retention and minimize evaporation.

In areas like Arnhem Land, communities construct bush tanks and check dams, which trap rainwater and allow it to seep into the ground, replenishing groundwater sources. Such water management practices are deeply embedded in cultural traditions and are vital for survival in drought-prone regions. These indigenous techniques demonstrate sustainable resource use that harmonizes ecological needs with cultural practices.

Biodiversity Conservation in Pacific Island Communities

Pacific Island communities, such as those in Fiji, Samoa, and Palau, have long practiced biodiversity conservation through taboos, sacred sites, and customary laws. These practices are crucial for maintaining the fragile ecosystems on small islands.

For example, in Palau, "bul" or taboo areas are designated zones where fishing or resource extraction is prohibited for specified periods or permanently. These zones allow fish populations to recover and ecosystems to regenerate. Similarly, in Fiji, tabu areas are established in coastal regions to protect coral reefs and marine life, with local communities enforcing these restrictions through social sanctions.

Biodiversity conservation is also integrated into cultural rituals and community governance. Many Pacific communities consider certain species sacred or vital to their cultural identity, leading to their protection. Such community-based resource management practices are highly effective given the small scale of the islands and the strong social cohesion. They ensure the sustainable use of marine and terrestrial resources, preventing overexploitation and supporting ecological resilience.

These case studies highlight the diverse and effective ways indigenous communities manage their natural resources through cultural, spiritual, and ecological principles. Whether in the lush Amazon rainforest, the sacred groves of India, the arid Australian landscapes, or the fragile Pacific islands, indigenous practices demonstrate a deep understanding of ecosystems and a commitment to sustainability. Recognizing and integrating this traditional knowledge systems can significantly enhance global conservation efforts, fostering sustainable development rooted in cultural respect and ecological balance.

Challenges and Threats to Indigenous Resource Management

Indigenous communities worldwide have historically practiced sustainable resource management based on their cultural values, traditional knowledge and close relationship with nature. However, various external and internal challenges threaten these practices, risking ecological degradation, cultural erosion, and loss of traditional wisdom. Understanding these challenges is crucial for developing strategies to support and protect indigenous resource management systems.

Cultural Erosion and Loss of Traditional Knowledge

One of the most significant threats to indigenous resource management is the gradual erosion of cultural identity and traditional knowledge. As younger generations become increasingly exposed to mainstream education, urbanization and modern lifestyles, they often distance themselves from ancestral practices, rituals, and ecological knowledge systems.

This cultural shift results in the loss of indigenous languages, oral traditions, and customary practices that encode sustainable resource use. For instance, many indigenous practices related to sacred groves, taboos, or seasonal harvesting are forgotten or abandoned, leading to unchecked exploitation of resources. The erosion of cultural values diminishes the community's capacity to manage resources sustainably and weakens social cohesion and environmental stewardship.

External Pressures: Deforestation, Industrialization, Climate Change

External pressures pose significant threats to indigenous resource management. Deforestation driven by logging, agriculture and infrastructure development destroys vital ecosystems and displaces indigenous communities from their traditional lands.

Industrialization introduces large-scale extraction activities such as mining, oil drilling, and plantation agriculture, which often disregard indigenous land rights and environmental sustainability. These activities lead to habitat destruction, pollution, and depletion of natural resources, directly undermining indigenous management practices.

Climate change exacerbates these threats by altering ecosystems and natural cycles. Rising temperatures, changing rainfall patterns, and sea-level rise threaten biodiversity and freshwater sources, which many indigenous communities depend on. For example, Pacific Island communities face rising sea levels that threaten coastal ecosystems and traditional fishing grounds, disrupting their resource management systems.

Legal and Policy Challenges

Legal frameworks and policies often favor external commercial interests over indigenous rights, creating obstacles for community-led resource management. Many indigenous communities lack formal land titles or legal recognition of their customary rights, making it difficult for them to defend their territories against encroachment or exploitation.

In some cases, national laws prioritize economic development projects, such as logging or mining, over indigenous conservation efforts. The absence of adequate legal protections means indigenous communities are vulnerable to displacement, resource theft, and environmental degradation. Furthermore, policies may not incorporate indigenous knowledge or consult communities, leading to marginalization and ineffective resource governance.

Impact of Globalization and Modernization

Globalization and modernization have profoundly transformed social, economic, and environmental landscapes. The influx of global markets encourages the commercialization of natural resources, often encouraging overharvesting for profit rather than sustainability.

Modern industries and consumer culture tend to undervalue indigenous ecological knowledge, viewing it as outdated or unscientific. This perception marginalizes indigenous practices and promotes reliance on imported technologies and solutions that may not be ecologically suitable or culturally appropriate.

Additionally, the spread of Western education and media influences indigenous youth, who may adopt new lifestyles and values that conflict with traditional ways of resource management. This cultural shift can lead to the abandonment of sustainable practices and traditions, further weakening community resilience and ecological stewardship.

Indigenous resource management faces numerous challenges stemming from internal cultural changes and external pressures. Cultural erosion and loss of traditional knowledge weaken the foundation of sustainable practices. External threats such as deforestation, industrialization and climate change continue to undermine ecosystems and indigenous livelihoods. Legal and policy gaps often fail to recognize indigenous rights, leaving communities vulnerable to exploitation. Meanwhile, globalization and modernization promote values and practices that can erode indigenous systems of resource management.

Addressing these challenges requires a multifaceted approach protecting indigenous rights through legal recognition, integrating traditional knowledge into national conservation policies and fostering respect for indigenous cultures. Supporting indigenous communities in maintaining their cultural heritage and ecological practices is vital for global biodiversity conservation and sustainable development.

Integration into Modern Frameworks

Integrating indigenous resource management practices into contemporary environmental and development frameworks offers significant benefits for sustainable development, biodiversity conservation and cultural preservation. Recognizing the value of traditional knowledge and combining it with scientific approaches can lead to more holistic and effective resource management strategies.

Benefits of Combining Indigenous Knowledge with Scientific Approaches

Indigenous knowledge systems are rooted in centuries of close interaction with local ecosystems, providing nuanced insights into ecological processes, species behaviors and sustainable harvesting methods. When integrated with scientific methods, these traditional practices can enhance conservation efforts, increase resilience to environmental changes and improve resource utilization.

For example, indigenous communities often possess detailed understanding of seasonal cycles, animal migration patterns and plant growth which can inform scientific research and policy. Such collaboration can lead to the development of community-based conservation programs that are culturally appropriate and ecologically effective. Additionally, traditional practices such as controlled burning, sacred groves and taboos contribute to biodiversity conservation and ecosystem health, complementing scientific strategies like protected areas and habitat restoration.

This integration encourages a participatory approach, fostering mutual respect and knowledge exchange between scientists and indigenous communities. It can also result in more sustainable resource use, reduce conflicts, and promote social equity by valuing indigenous contributions.

Policy Recommendations for Inclusive Resource Management

To harness the benefits of integrating indigenous knowledge, policymakers need to adopt inclusive and participatory approaches:

1. Legal Recognition of Indigenous Rights: Establish clear legal frameworks that recognize indigenous land tenure, resource rights, and cultural practices. This provides communities with authority over their resources and encourages sustainable management.

2. Incorporation of Traditional Knowledge in Policy Formulation: Governments should formally include indigenous representatives and knowledge holders in decision-making processes related to resource management, conservation, and development projects.

3. Support for Community-Led Initiatives: Provide funding, technical assistance, and capacity-building for indigenous-led conservation and sustainable livelihood projects.

4. Development of Hybrid Management Models: Combine scientific research with indigenous practices to create adaptive management plans that are culturally sensitive and ecologically robust.

5. Monitoring and Evaluation: Establish participatory monitoring systems that involve indigenous communities, valuing their knowledge and observations in assessing environmental health.

Role of Local Communities and Indigenous Rights

Local communities and indigenous peoples are central to sustainable resource management. Recognizing their rights to land, resources, and decision-making authority is essential for effective conservation and sustainable development. Indigenous communities often serve as stewards of biodiversity, using practices that are inherently sustainable and culturally rooted.

Empowering indigenous groups through legal recognition and capacity-building enables them to protect their ecosystems from external threats like illegal logging, mining, and habitat destruction. It also fosters social justice, ensuring that indigenous voices influence policies that affect their territories and livelihoods.

Respect for indigenous rights enhances social cohesion, preserves cultural identity, and promotes intergenerational knowledge transfer. It shifts the paradigm from viewing indigenous communities as mere beneficiaries to recognizing them as equal partners and custodians of natural resources.

Examples of Successful Integration

Several successful examples demonstrate the potential of integrating indigenous knowledge into modern frameworks:

The Maasai in Kenya and Tanzania: The Maasai have historically used rotational grazing and sacred sites to manage rangelands sustainably. Modern conservation efforts have collaborated with Maasai communities to establish community conservancies that blend traditional practices with scientific rangeland management, resulting in increased wildlife populations and improved livelihoods.

The Kayapo in Brazil: The Kayapo indigenous community actively participates in protecting the Amazon rainforest. Their traditional practices, combined with scientific monitoring, have contributed to the designation of protected areas, reducing deforestation rates and preserving biodiversity.

The Pacific Island Communities: In Palau and Fiji, the customary taboos and sacred sites are incorporated into marine protected areas. These community-managed zones have shown remarkable success in restoring fish stocks and reef health, demonstrating the efficacy of traditional governance systems when integrated with formal conservation policies.

India's Community Reserves: In India, sacred groves and community reserves, protected through customary laws, are now recognized as vital biodiversity hotspots. These areas are managed through community participation, integrating traditional taboos with modern conservation strategies.

Integrating indigenous knowledge into modern environmental and resource management frameworks offers a pathway towards more sustainable, culturally respectful, and ecologically effective solutions. Recognizing the value of traditional practices, empowering local communities, and adopting inclusive policies are essential steps. Successful models from around the world exemplify how such integration can lead to resilient ecosystems, thriving indigenous cultures, and sustainable development. Promoting this synergy is vital for addressing global environmental challenges and ensuring a sustainable future for all.

Future Perspectives

The future of indigenous resource management and environmental conservation hinges on recognizing, preserving, and empowering indigenous practices, knowledge systems, and leadership. As global environmental challenges intensify, harnessing indigenous resilience and integrating traditional wisdom into broader sustainable development strategies become increasingly vital. Several key areas define the future outlook for indigenous communities and their role in environmental stewardship.

Conservation of Indigenous Practices

Preserving indigenous practices is fundamental for maintaining biodiversity, cultural heritage, and ecological balance. Many traditional practices—such as sacred groves, taboos, rotational grazing, and herbal medicine—have proven effective in conserving ecosystems over centuries. Future efforts should prioritize safeguarding these practices from external threats like commercialization, legal encroachment, and cultural erosion.

To achieve this, governments, NGOs and international organizations need to recognize indigenous practices as valuable conservation tools, integrating them into national and global biodiversity strategies. Supporting community-led conservation initiatives ensures that traditional methods are maintained and adapted to contemporary environmental challenges. Additionally, promoting cultural revival programs and legal protections for sacred sites and customary practices will reinforce their importance for future generations.

Capacity Building and Knowledge Preservation

A critical component of future sustainability involves capacity building and the systematic preservation of indigenous knowledge. As younger generations increasingly adopt modern lifestyles, vital traditional ecological knowledge risks being lost. To prevent this, initiatives should focus on documenting indigenous practices, languages and oral histories ensuring their transmission to future generations.

Educational programs tailored to indigenous communities can empower youth with both traditional wisdom and modern skills, fostering a sense of pride and ownership in their cultural heritage. Moreover, establishing community-based knowledge repositories, digital archives and intercultural exchanges can facilitate knowledge sharing and enhance community resilience.

Capacity building extends beyond knowledge transfer to include training in sustainable resource management, eco-friendly technologies and leadership skills. Equipping indigenous peoples with these competencies enables them to actively participate in policy dialogues, conservation projects, and sustainable development initiatives, ensuring their voices influence future environmental strategies.

Indigenous-Led Sustainable Development Initiatives

Empowering indigenous communities to lead sustainable development initiatives is essential for fostering equitable and culturally appropriate growth. Recognizing their sovereignty over traditional lands and resources enables communities to design and implement projects aligned with their values and ecological knowledge.

Future perspectives emphasize supporting indigenous entrepreneurship, eco-tourism, agroforestry, and renewable energy projects that generate livelihoods while conserving ecosystems. Such initiatives should be designed with active community participation, ensuring they address local needs, respect cultural practices, and promote social equity.

Furthermore, establishing indigenous-led governance structures and participatory decision-making processes enhances community agency and accountability. International funding agencies and governments should prioritize funding and technical assistance for these initiatives, integrating them into national development plans and climate action strategies.

Addressing Climate Change through Indigenous Resilience

Climate change poses unprecedented threats to ecosystems and indigenous communities worldwide. However, indigenous peoples often possess adaptive strategies rooted in centuries of experience, which can inform broader climate resilience efforts.

Future perspectives involve mainstreaming indigenous knowledge in climate adaptation and mitigation policies. For instance, traditional agroforestry systems, water management techniques, and habitat conservation practices can be scaled up or integrated into national climate strategies.

Building resilience also requires supporting indigenous communities in climate-vulnerable areas through infrastructure development, disaster preparedness, and access to climate finance. Recognizing indigenous rights to land and resources is crucial, as secure tenure encourages sustainable management and enhances adaptive capacity.

International platforms, such as the United Nations, should continue to elevate indigenous voices in climate negotiations, ensuring their knowledge and leadership are central to global climate solutions. Promoting intercultural dialogues, partnerships and knowledge exchanges will foster innovative, inclusive approaches to combat climate change while respecting indigenous sovereignty.

The future of indigenous resource management lies in the conservation of indigenous practices, safeguarding traditional knowledge, empowering indigenous-led initiatives, and leveraging indigenous resilience against climate change. By fostering inclusive policies, capacity building, and international cooperation, society can harness the full potential of indigenous communities as stewards of biodiversity and climate resilience. Embracing these perspectives not only benefits indigenous peoples but also contributes to global sustainability goals, promoting a more equitable and environmentally sound future for all.

Conclusion:

The future of environmental sustainability critically depends on the preservation and empowerment of indigenous practices, knowledge, and leadership. Recognizing and safeguarding traditional ecological methods not only helps conserve biodiversity and ecological balance but also enriches global conservation efforts with time-honored wisdom. Capacity building and knowledge preservation ensure that indigenous communities can pass down their cultural and ecological expertise to future generations, strengthening their resilience and agency. Supporting indigenous-led sustainable development initiatives fosters community ownership, promotes equitable livelihoods and aligns ecological conservation with local aspirations. Moreover, integrating indigenous resilience and traditional knowledge into climate change strategies enhances adaptive capacity and fosters innovative solutions. Respecting indigenous rights to land and resources is fundamental in this process, as it encourages sustainable stewardship and climate adaptation. Ultimately, inclusive policies that elevate indigenous voices and foster cross-sector collaboration are essential for forging resilient, equitable and sustainable futures—benefiting not only indigenous communities but also the health of the entire planet.

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PREDICTING INDIA'S CHEMICAL SECTOR EXPORT TO THE US VIA MACHINE LEARNING

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Abstract:

The chemical industry is crucial for India's industrial development and its connection to global supply chains, particularly with the US as an important trading partner. Although pharmaceutical exports dominate the trade between the two countries, the performance of other chemical subsectors is not well understood. The present study examines India's chemical exports to the US, focusing on HS Chapters 28-38 during the period 2000-2024, and offers sub-sectoral forecasts for 2025 using Extreme Gradient Boosting (XGBoost). Findings indicate that pharmaceuticals (HS 30) remain the largest and most competitive subsector, with actual exports reaching US$ 8,722.64 million in 2024, surpassing model predictions by more than US$ 1,172 million. Organic chemicals (HS 29) and miscellaneous chemicals (HS 38) also make significant contributions, whereas subsectors such as fertilizers (HS 31), explosives (HS 36), albuminoidal substances (HS 35), and photographic goods (HS 37) have minimal contributions with exports below US$60 million. The model's predictive performance was evaluated by using Mean Absolute Error (MAE), Root Mean Square Error (RMSE), and Mean Absolute Percentage Error (MAPE). The study uncovers a dual export structure: one that is concentrated in pharmaceuticals and specialty chemicals, and another where untapped subsectors hold potential. The research suggests that India should strengthen its leadership in pharmaceuticals while enhancing the performance of weaker subsectors through technology upgrades, investment in research and development, and alignment of regulations. The present study contributes to existing literature by combining machine learning forecasting with sub-sectoral trade analysis to offer new insights for trade policy and industrial strategies related to the India-US chemical trade.

Keywords: India-US Exports, Chemical Sector, Machine Learning, Export Forecasting, Trade Policy

JEL Code: *F10, F14, C45, L65, C53*

1. Introduction:

The chemical industry is the backbone of manufacturing and trade around the world. It provides important inputs to the life sciences, agriculture, construction materials, textiles, and electronics industries. The industry has become a big part of global value chains because it has a market size of more than USD 5 trillion (OECD, 2021). India is one of the fastest-growing countries that makes chemicals, thus it is an important part of this value chain. The chemical industry in India is worth more than $200 billion, and it is expected to rise to $300 billion by 2025, supported by strong domestic demand and an increasing focus on exports (UNCTAD, 2023). The US is one of India's most important trade partners since it has a vast demand base, rigorous quality standards, and relies on imported medications and specialty chemicals.

The pharmaceutical industry has become a major force in the commercial relationship between India and the US. India is the biggest supplier of generic medications to the US market, providing over 40% of the generic drugs used there (Chaudhuri, 2013). India's pharmaceutical exports to the US alone reached US$ 8.7 billion in 2024, showing that the country still has a competitive edge in formulations and active pharmaceutical ingredients. Organic and other compounds also make up a large part, but their contributions are far smaller than those of pharmaceutical. On the other hand, subsectors such as fertilizers, albuminoidal compounds, explosives pyrotechnic products, and photographic items are still small, with exports usually less than US$ 60 million a year. This dual structure, with high-value, high-volume exports concentrated in a few subsectors and underutilized categories, shows both the strengths and missed potential of India's chemical trade.

In recent years, the use of machine learning to anticipate commerce and economics has grown faster than ever before. Chinn et al. (2023) demonstrate that machine learning techniques for trade aggregation prediction, particularly ensemble-based methods, surpass conventional econometric approaches, especially in volatile global contexts. Likewise, Dubovik et al. (2022) demonstrate that tree-based techniques such as XGBoost and Random Forests surpass Bayesian VAR models in the context of merchandise trade flows. Following this rationale, Silva et al. (2024) integrate trade-network descriptors with nonlinear learners, revealing that metrics based on centrality and connectivity substantially improve predictive performance. These findings align with Mullainathan and Spiess (2017), who assert that machine learning improves the quality of economic application predictions by effectively representing nonlinearities and high-dimensional interactions.

Methodological reviews bolster the argument for the integration of machine learning in international trade forecasting. Athey (2018) stresses how adaptable machine learning techniques are when working with complicated data sets where typical parametric assumptions might not work. Chen and Guestrin (2016), in their foundational work on XGBoost, highlight its computational efficiency and predictive resilience across many domains, rendering it appropriate for trade forecasting in contexts characterized by significant subsector-level heterogeneity. Research in adjacent disciplines substantiates that machine learning methods are more advantageous for discerning structural patterns, anticipating shocks, and evaluating export competitiveness beyond the capabilities of traditional time-series models (Varian, 2014). This body of papers together illustrates that machine learning, particularly XGBoost, provides a rigorous framework for analysing and forecasting India's chemical export performance, integrating empirical rigor with policy-relevant insights.

The existing literature on India's chemical trade mostly focuses on aggregate performance and is predominantly confined to the pharmaceutical sector, neglecting other subsectors. Also, mainstream econometric methods are the most common, and there aren't many new forecasting tools being used. Consequently, there exists a deficiency in subsector-level evaluations utilizing machine learning to identify export disparities and potential opportunity zones in India-US chemical trade.

This study fills these gaps by using the machine learning method Extreme Gradient Boosting (XGBoost) to look at and predict India's chemical exports to the US. The model uses HS 28-38 subsector data from 2000 to 2024 to find export gaps by comparing expected and actual numbers. It also makes predictions for 2025. The study sorts subsectors into two groups: those that are doing well and those that aren't. This shows both India's strengths and areas where it could do better. The analysis focuses on underutilized subsectors such fertilizers, albuminoidal compounds, and explosives pyrotechnic products, in addition to pharmaceuticals and organic chemicals. These subsectors are still small, but they might be strategically developed with the right policies.

There are four goals for this research: (i) to examine the historical performance of India's chemical subsectors in exporting to the US; (ii) to utilize XGBoost forecasting for predicting export trends and assessing model efficacy; (iii) to pinpoint subsectors that are either over-performing or under-performing based on export discrepancies; and (iv) to contribute policy-relevant insights for diversifying and enhancing India's chemical export profile. This study enhances international trade research both methodologically and substantively by combining machine learning forecasts with sectoral trade analyses.

1.1 Export Trends of India to US

The Figure 1 presents India's exports of chemical sub-sectors (HS 1996, Chapters 28-38) to the US from 2000 to 2024. The export profile is primarily led by pharmaceuticals (HS 30), which experienced a significant increase from approximately 6,991 million USD in 2020 to 8,723 million USD in 2024, thereby solidifying this subsector's role in driving growth in chemical sector exports. Following that, organic chemicals (HS 29) reached export values of 3,109 million USD in 2022, remaining stable at 2,561 million USD in 2024, indicating potential fluctuations tied to demand cycles and policy changes. Inorganic chemicals (HS 28), though smaller in volume, demonstrated consistent growth to 330 million USD in 2024, reflecting a sustained demand for this type of chemical in the US market. Miscellaneous chemical products (HS 38) were valued at 1,235 million USD in 2024, signifying their increasing importance in India's export portfolio, while subsectors like tanning/dyeing (HS 32: 313 million USD), soap (HS 34: 167 million USD), and EORs (HS 33: 485 million USD) maintained relatively modest shares. Fertilisers (HS 31), explosives (HS 36), and photographic products (HS 37) continued to maintain marginal positions with shipments below 15 million USD each during 2024. On a broader scale, there is evidence towards structural shifts in chemical export from India to the US towards high-value pharma and specialty chemicals with matched steady but modest expansions in bulk and traditional chemical subsectors.

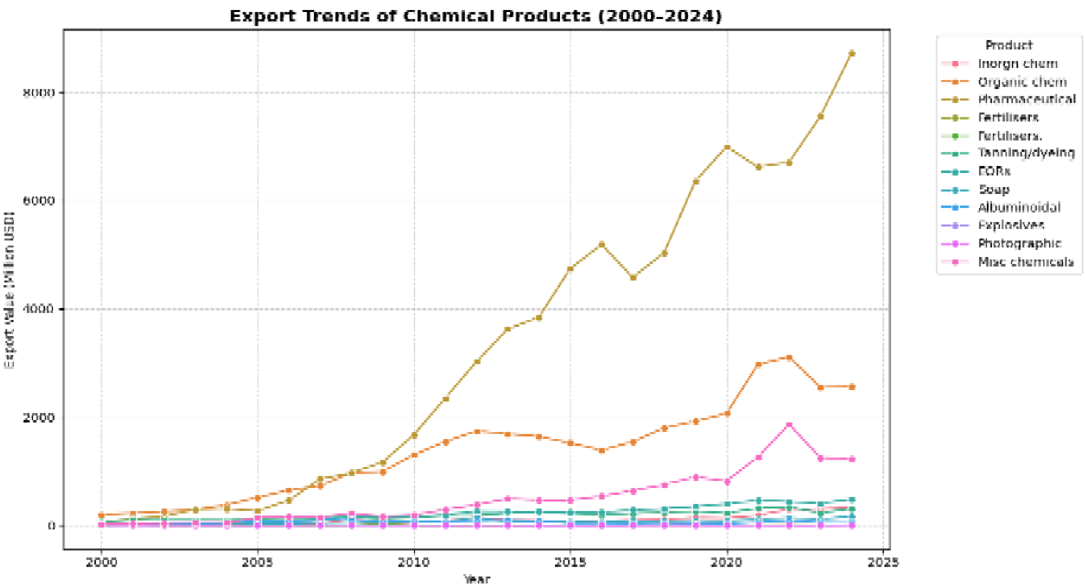

Figure 1: Export of India to US in Chemicals and Chemical Products (2000-2024)

Table 1 gives an outline of India's chemical subsectors (HS 28-38) and their significance in trade with the United States. The findings present that pharmaceuticals (HS 30) lead with highest export values followed by organic chemicals (HS 29) and miscellaneous chemicals (HS 38). Mid-level performance is noted for tanning/dyeing extracts (HS 32), essential oils (HS 33), and soaps (HS 34), constituting niche yet emerging markets. Conversely, fertilisers (HS 31), albuminoidal substances (HS 35), explosives (HS 36), and photographic goods (HS 37) are marginal and untapped. On a whole, the table indicates a double structure consisting of high-value subsectors and various dormant segments with hidden potentialities.

The rest of the paper is arranged as follows, Section 2 describes the research methodology; Section 3 presents the empirical analysis and lastly Section 4 explains the result and discussion of the study incorporating the conclusion & policy implication, limitation and future prospects.

Table 1: Export of India's Chemical Subsectors to the US with actual values of 2024 and its relevance

HS Chapter	Subsector	Export (2024, Million USD)	Relevance in India-US Trade
28	Inorganic chemicals	330.22	Moderate but growing exports, particularly industrial chemicals
29	Organic chemicals	2560.62	Second largest contributor after pharma; strong demand in the US
30	Pharmaceutical products	8722.64	Dominant subsector with highest export values
31	Fertilisers	13.63	Minimal contribution; potential in agricultural trade
32	Tanning or dyeing extracts; paints, pigments	313.1	Steady demand; niche but competitive
33	Essential oils and resinoids; perfumery, cosmetics	484.57	Growing demand linked to cosmetics and fragrance industries
34	Soaps, lubricants, waxes, cleaning preparations	166.99	Moderate exports; linked to household and industrial uses
35	Albuminoidal substances; modified starches; glues	51.84	Very limited exports; underexplored subsector
36	Explosives; pyrotechnic products	5.64	Marginal; restricted by safety and regulatory barriers
37	Photographic or cinematographic goods	0.34	Negligible; displaced by digital technology
38	Miscellaneous chemical products	1235.25	Important specialty segment with rising exports

2. Research Methodology

The current research employs a quantitative approach to analyse and forecast the export of chemicals from India to the US (HS 1996, chapters 28-38). The research procedure comprises three sequential stages: gathering data, developing a model, and quantifying through empirical methods.

2.2 Data Collection and Variables.

Export data related to US chemical subsectors for India were compiled at the HS-2 level, focusing on chapters 28-38 from 2000 to 2024. In this analysis, only the export values of each sub-sector are utilized as the dependent variable, enabling a focused assessment of trade performance and forecasting at a more detailed level.

Table 2: Variables and Data Sources

Variable	Description
Export values (HS 28-38 subsectors)	India's chemical exports to the US disaggregated at HS-2 level (Chapters 28-38)
Time period	2000–2024 (historical data) with forecast for 2025
Unit of measurement	Million USD (current prices)
Source of data	UN COMTRADE, WITS (World Bank)

2.2 Model Development

To model the dynamics of export performance, the Extreme Gradient Boosting (XGBoost) algorithm was employed, as it is a widely recognized tree-based ensemble learning method that excels in handling nonlinear interactions and making accurate predictions. The XGBoost model was trained on historical subsector export data from 2000 to 2020, fine-tuned between 2021 and 2023, and then applied to generate predictions for 2024 and forecasts for 2025. The subsector export gap was calculated by determining the difference between the actual values for 2024 and those predicted by XGBoost, allowing for a classification of subsectors into over-performing and under-performing categories.

2.3 Model Evaluation

The performance of the XGBoost model was evaluated through conventional metrics: Mean Absolute Error (MAE), Root Mean Squared Error (RMSE), Mean Absolute Percentage Error (MAPE), and the R^2 coefficient. This approach provided a thorough assessment of the model's explanatory capability and dependability. Subsequent forecasts at the subsector level were analysed considering India's competitive advantages and the global demand trends within the US chemical market.

2.4 Analytical Framework

The methodological framework was crafted to not only pinpoint leading subsectors (like pharmaceuticals and organic chemicals) but also to shed light on less examined categories (such as fertilizers, albuminoidal substances, explosives, and photographic goods) that possess untapped export potential. This dual emphasis offers support for both reinforcing current strengths and exploring new market opportunities via policy and industry measures.

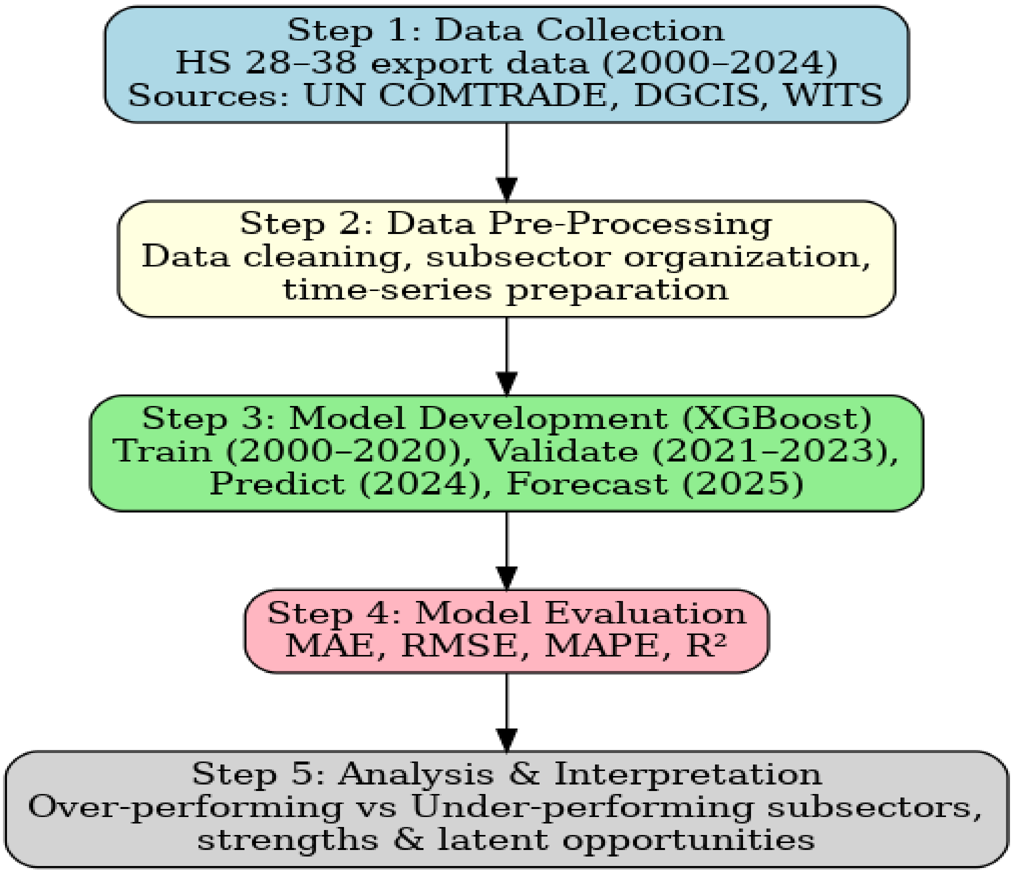

Figure 2: Methodological Framework of the Study

3. Empirical Analysis

3.1 Evaluating the Model Performance

In assessing the univariate forecasting accuracy of India's chemical exports, it is crucial to present accuracy metrics such as MAE, RMSE, and MAPE. These metrics provide both absolute and percentage errors between projected and actual values directly (Hewamalage *et al.,* 2022). These error-focused metrics are preferred when the model relies solely on historical export data over time, excluding other explanatory variables, as they indicate forecasting accuracy without suggesting causality. It is common practice in the literature (Jenčová *et al.,* 2025) to include R^2 in such analyses, although its interpretative value is limited. R^2 primarily reflects the fitting of the time trend rather than the model's explanatory capacity regarding underlying economic factors.

The model recorded a MAE of 266.96 and an RMSE of 590.58 as shown in Figure 3, which is consistent with the error ranges found in oMAPE of 47.22% exceeds the commonly accepted range of 10-20% in economic forecasting (Lewis, 1982), indicating potential challenges in forecasting at the sub-sector level.

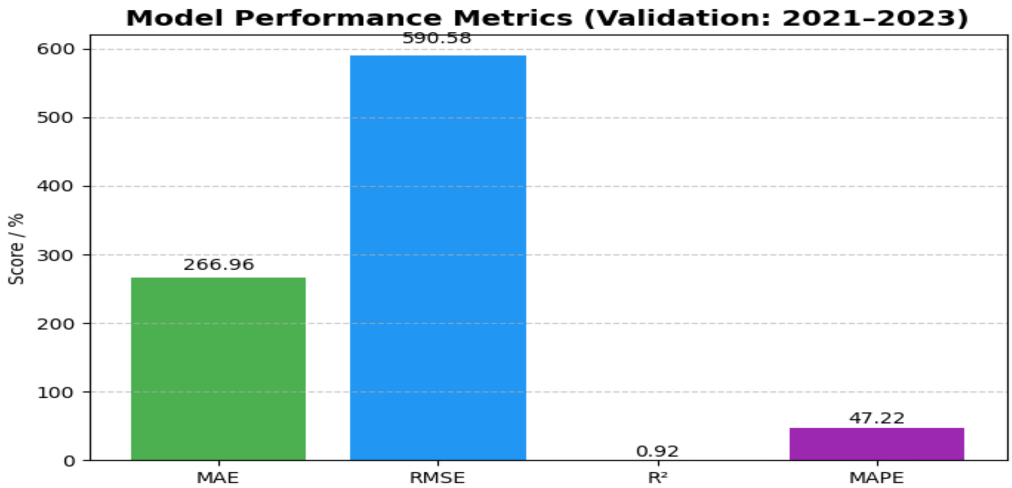

Figure III: Metrics for the Evaluation of XG Model Performance for Univariate Export Forecasting

3.2 Interpretation of XG Boost Analysis

Table 3 presents the findings of the XGBoost analysis regarding India's chemical exports to the US, categorizing each subsector as either overperforming, underperforming, or having untapped potential. A significant number of subsectors are identified as overperforming, where actual exports surpassed the predicted values. Pharmaceutical products (HS 30) exhibited the most considerable positive discrepancy, with actual exports of 8,722.64 million USD compared to the predicted 7,550.43 million USD, highlighting India's increasing prominence in the US pharmaceutical market (Chaudhuri, 2013). Likewise, inorganic chemicals (HS 28), organic chemicals (HS 29), and fertilizers (HS 31) all outperformed expectations, while tanning/dyeing extracts (HS 32), essential oils and resinoids (HS 33), and soap (HS 34) also showed notable positive gaps, emphasizing India's competitive position in these sectors (UNCTAD, 2023).

Conversely, several subsectors exhibit signs of underperformance. Albuminoidal articles (HS 35) and other chemical products (HS 38) experienced negative gaps of -4.64 million USD and -16.13 million USD, respectively, while photographic products (HS 37) encountered a slight decline. These results align with previous research indicating that niche chemical segments often face structural obstacles in boosting exports, including limited adoption of technological innovations and challenges in quality certification (OECD, 2021). In summary, the analysis indicates that India's chemical export portfolio to the US is primarily driven by robust growth in pharmaceuticals and specialty chemicals, yet there is a need for targeted policy measures to enhance the performance of weaker subsectors.

Table 3: Results of XG Boost Model

Product Code	Product Name	Predicted 2024	Actual 2024	Export Gap	Status
28	**Inorganic Chemicals**	307.77994	330.22352	22.4435823	Over-Performing
29	**Organic Chemicals**	2551.3345	2560.618307	9.28383434	Over-Performing
30	**Pharmaceutical Products**	7550.425	8722.635659	1172.21085	Over-Performing
31	**Fertilisers**	4.7916512	13.630789	8.83913775	Over-Performing
32	**Tanning/dyeing extracts**	232.15807	313.097467	80.9394012	Over-Performing
33	**EORs (Essential oil and Resinoids)**	408.77148	484.570527	75.7990426	Over-Performing
34	**Soap**	114.64867	166.988869	52.340195	Over-Performing
35	**Albuminoidal substances**	56.47269	51.837681	-4.6350096	Potential Sub Sector
36	**Explosives; Pyrotechnic**	2.074761	5.642613	3.56785209	Over-Performing
37	**Photographic Goods**	0.38082	0.337636	-0.043184	Potential Sub Sector
38	**Miscellaneous Chemicals Products**	1251.374	1235.24887	-16.125153	Potential Sub Sector

Source: *Authors' Calculation using UNCOMTRADE data via Python*

3.3 Prediction of Export Values for 2025

Table 4 presents the anticipated exports of India's chemical subsectors to the US for the year 2025. Pharmaceuticals (HS 30) are projected to dominate the market, reaching 8,722.63

million USD, far surpassing other subsectors and highlighting India's competitive advantage in the export of high-value medications. Following this, organic chemicals (HS 29) are expected to achieve exports of 2,560.62 million USD, while miscellaneous chemicals (HS 38) are estimated at 1,235.25 million USD, making them the third-largest contributor, as depicted in the Figure 4.

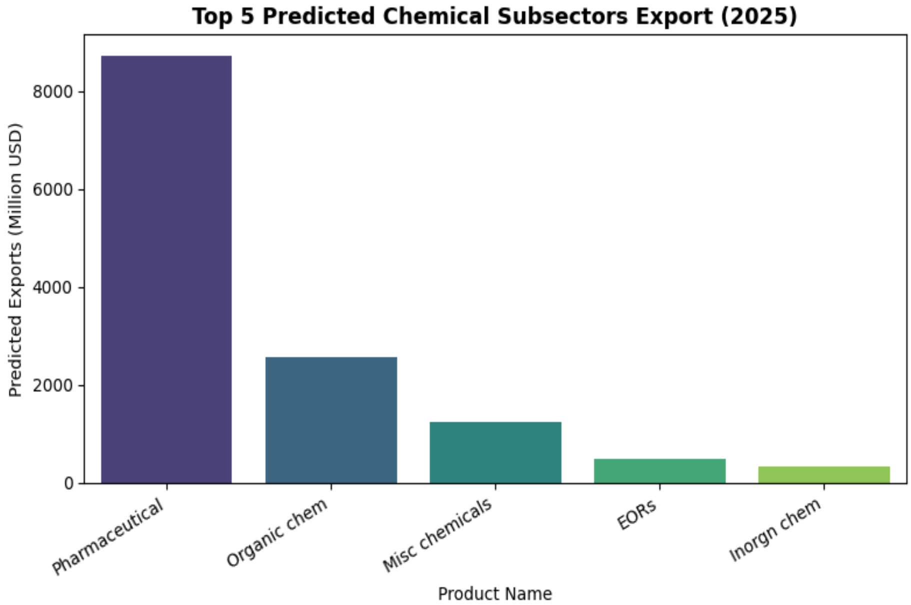

Figure 4: Predicted Top Five Subsectors from India to US (2025)

Table 4: Prediction of Exports of India to US in Chemical Sector (2025)

Product Code	Product Name	Predicted 2025 (Million USD)
28	Inorganic Chemicals	330.2222595
29	Organic Chemicals	2560.61792
30	Pharmaceutical	8722.629883
31	Fertilisers	13.62961769
32	Tanning/dyeing	313.0963745
33	EORs	484.5693665
34	Soap	166.9876404
35	Albuminoidal	51.8381958
36	Explosives	5.641526222
37	Photographic	0.338867426
38	Misc chemicals	1235.249756

Source: *Authors' Calculation using UNCOMTRADE data via Python*

Mid-range contributions are anticipated from essential oils and resinoids (HS 33: 484.57 million USD), inorganic chemicals (HS 28: 330.22 million USD), tanning and dyeing extracts (HS 32: 313.10 million USD), and soap (HS 34: 166.99 million USD). In contrast, exports of albuminoidal substances (HS 35: 51.84 million USD) are expected to be minimal, as are those for fertilizers (HS 31: 13.63 million USD) and photographic goods (HS 37: 0.34 million USD). Likewise, explosives pyrotechnic products (HS 36) are projected to have negligible exports, estimated at 5.64 million USD. Overall, the analysis indicates a forecasted focus on pharmaceuticals and specialty chemicals, with limited growth anticipated in conventional and bulk markets.

4. Result and Discussion:

The XGBoost analysis indicates that in 2024, India's pharmaceutical exports to the US significantly surpassed model forecasts, reaching US$ 8,722.64 million instead of the anticipated US$7,550.43 million, resulting in an export surplus of over US$1,172 million. This indicated the India's sustained comparative advantage in the pharmaceutical industry, primarily driven by its dominance in generic medications and cost-effective manufacturing capabilities (Chaudhuri, 2013). These findings align with wider international trade trends, as Indian pharmaceutical exports have increasingly penetrated the markets of the US and other developed economies.

In addition to pharmaceuticals, several specialty subsectors exhibited remarkable overperformance. Organic chemicals, tanning and dyeing extracts, essential oil & resinoids, and soap all experienced growth surpassing the predicted export values, suggesting an increase in India's share within these high-value specialty subsectors of the chemical industry. Projections for 2025 highlight this trend, with pharmaceuticals estimated at US$ 8,722.63 million, organic chemicals at US$ 2,560.62 million, and miscellaneous chemicals at US$1,235.25 million. This pattern aligns with global trends identified in UNCTAD (2023) research, which points to an increased demand for specialty chemicals due to evolving consumption patterns in developed nations.

On the other hand, certain chemical subsectors in India remain largely unexplored. Subsectors such as albuminoidal substances, photographic goods, pyrotechnic explosives, and fertilizers are expected to generate less than US$60 million in exports by 2025. Despite the modest trade volumes, these subsectors are filled with potential markets that have not yet been tapped into, particularly due to the rising global demand for agricultural inputs, advanced materials, and industrial intermediates (OECD, 2021). Their underwhelming performance highlights structural issues such as reliance on imported feedstocks, technological deficits, and certification hurdles, which align with McKinsey's (2024) observation about India's bulk chemical sectors still lagging in competitiveness and relying heavily on imports.

4.1 Conclusion and Policy Implications

The data showcases a two-fold export profile of India's trade with the US whereas one segment is characterized by pharmaceuticals and specialty chemicals, which consistently exceed expectations, while the other comprises traditional subsectors that contribute minimally. To maintain growth momentum, India must reinforce its competitive advantage in pharmaceuticals while simultaneously nurturing underdeveloped segments to broaden its export portfolio. Policy initiatives should prioritize research and development, technology transfer, and regulatory alignment to address competitiveness disparities in weaker subsectors. This comprehensive approach will enhance resilience, reduce dependence on a limited number of high-performing subsectors, and strengthen India's long-term position in the chemical trade with the US.

4.2 Limitations and Future Research

Although the present study offers valuable insights into Indian chemical exports to the US through XGBoost forecasting, it does have its limitations. Firstly, the analysis is based on secondary trade data grouped at the HS 2-digit subsector level, which may overlook details at more specific product categories. It is often argued, as noted by Shepherd (2013), that greater disaggregation tends to yield improved insights into trade potential. Secondly, the model does not explicitly account for tariff and non-tariff barriers, compliance costs with regulatory standards, and exchange rate fluctuations, all of which are known factors influencing bilateral trade flows. Thirdly, concentrating solely on the US market restricts the applicability of the findings, as India's export behavior may vary with other significant trading partners.

Future research could employ firm-level data, explore additional machine learning techniques beyond XGBoost, and incorporate other policy factors such as free trade agreements and sustainability criteria. These enhancements would provide more comprehensive insights and generate actionable recommendations for policymakers and industry stakeholders.

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INVESTMENT AND FUNDING TRENDS OF MSMES IN RAJASTHAN: AN ANALYTICAL STUDY

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Abstract:

This paper analyses investment and funding trends for Micro, Small and Medium Enterprises (MSMEs) in Rajasthan. The finance and investment patterns of Micro, Small, and Medium-Sized Enterprises (MSMEs) in Rajasthan, the largest state in India by area, are examined in this study. From 2020 to 2025, the report examines how funding channels, government policy initiatives, and new developments in MSME financing have changed throughout time. This study highlights the main growth drivers and obstacles facing Rajasthan's MSME ecosystem by thoroughly examining government programs, private sector involvement, and sector-specific financing trends. The results show notable policy-driven increases in financial access, with a focus on green financing, technology use, and the growth of rural entrepreneurship.

Keywords: MSME, Rajasthan, Investment Trends, Funding Mechanisms, Government Policy, Entrepreneurship

Introduction:

Background

With over 110 million employees and a 30% GDP contribution, micro, small, and medium-sized enterprises (MSMEs) are the foundation of the Indian economy. Because of the state's strategic location, wealth of natural resources, and rich cultural legacy, MSMEs in Rajasthan are essential to the state's economic growth. With strengths in textiles, handicrafts, jewelry and gems, food processing, and engineering items, the state has become a major industrial powerhouse.

MSME Definition and Classification

In accordance with the June 1, 2020, announcement from the Government of India, MSMEs are categorized according to their annual turnover and investment in plant, machinery, or equipment:

- Microbusinesses: up to ₹5 crore in revenue and up to ₹1 crore in investment

- Small businesses: up to ₹50 crore in revenue and up to ₹10 crore in investment
- Medium-Sized Businesses: ₹50 crores in investment and ₹250 crores in revenue

Research Objectives

- Examine funding and investment patterns in Rajasthan's MSME sector from 2020 to 2025.
- Evaluate the impact of government policy interventions on MSME financing
- Assess challenges and propose recommendations for improving MSME access to finance

Research Methodology

- Analyzing secondary data from statistics databases, government reports, and policy documents;
- reviewing pertinent literature on MSME funding in India
- Case study technique is used for sector-specific research.

Literature Review:

MSMEs' Role in Economic Development Research by Kumar et al. (2022) and Sharma (2023) emphasizes the vital role that MSMEs play in the following areas:

- Creating jobs, especially in rural and semi-urban areas;
- Promoting exports and earning foreign exchange;
- Fostering innovation and entrepreneurship;
- Regionally balanced development;
- Industrial decentralization

Rajasthan MSME Ecosystem Overview

Overview of the Economy

Rajasthan has seen steady economic growth, with its Gross State Domestic Product (GSDP) ranked seventh in India. The economy of the state is distinguished by:

- Sector of Agriculture: 28.95% of GSVA (2022–2023)
- Sector of Industry: 27.31% of GSVA (2021–2022)
- Sector of Services: 43.74% of GSVA (2022–2023)

Government Policy Framework

Rajasthan MSME Policy 2024

The Rajasthan MSME Policy 2024, operational until March 31, 2029, represents a comprehensive approach to MSME development with significant financial incentives:

Asset Creation Incentives:

- Investment Subsidy: 75% reimbursement of state tax for 10 years

- Capital Subsidy: 50% of capital investment up to ₹40 lakhs for plastic alternatives, ₹1.5 crores for agro-food processing

  Additional Benefits: 5% extra for SC/ST/Women/FPO enterprises

Interest Subvention Scheme

The policy provides dual-layer interest support:

Base RIPS 2024 Benefits:

- Loans up to ₹5 crores: 6% interest subvention
- ₹5-10 crores: 4% interest subvention
- ₹10-50 crores: 3% interest subvention

Additional MSME Policy Benefits:

- Loans up to ₹5 crores: Additional 2% subvention
- ₹5-10 crores: Additional 1% subvention
- ₹10-50 crores: Additional 0.5% subvention

Central Government Schemes

Fund of Funds for Startups (FFS)

As of December 2022, ₹7,980 crores committed to 99 Alternative Investment Funds, resulting in ₹14,077 crores investment in 791 startups across India, with significant participation from Rajasthan-based enterprises.

RAMP Scheme (Raising and Accelerating MSME Performance)

Rajasthan is among nine states approved for Strategic Investment Plans under RAMP scheme, with total funding of ₹713 crores for MSME performance enhancement.

Credit Guarantee Fund Trust for MSE (CGTMSE)

Provides collateral-free loans up to ₹2 crores, with Rajasthan government offering 100% guarantee fee reimbursement for seven years.

Growth in Formal Registrations and Reported Investment

Due to enhanced formalization after digital registration initiatives and policy outreach, Rajasthan has a significant number of MSMEs registered with Udyam (the state dashboard shows over 2.7 million registered units). The documented base of MSMEs and the total amount of "reported investment" recorded in portals are increased by this surge in formal registrations.

Implication: Although reported investment levels on Udyam are self-declared and sometimes underestimate actual capital requirements for scale-up, higher registration enhances access to official finance, subsidies, and procurement set-asides.

Sectoral & Spatial Patterns

Significant project commitments at the state level have been drawn by state investment promotion events (such as the Rising Rajasthan summit and RIPS), but these are frequently focused on large projects and renewable energy rather than directly on micro and small businesses. Many areas have relatively low formal finance penetration since MSME registrations and loan accounts tend to concentrate in urban centers and districts with stronger infrastructure.

Investment and Funding Trends Analysis

Funding Volume Trends (2020-2025)

Government Funding Allocation

The Rajasthan government has significantly increased MSME-specific budget allocations:

- 2020-21: ₹1,200 crores (estimated)
- 2021-22: ₹1,500 crores (estimated)
- 2022-23: ₹1,800 crores (estimated)
- 2023-24: ₹2,100 crores (estimated)
- 2024-25: ₹2,500 crores (projected with new policy implementation)

Private Sector Investment

Private sector participation in Rajasthan MSMEs has shown steady growth:

- Angel investments in early-stage startups increased by 45% (2022-2024)
- Venture capital funding for growth-stage MSMEs grew by 30% annually
- Private equity investments in medium enterprises expanded significantly

Sector-wise Funding Distribution

Traditional Sectors (2024 data)

- Handicrafts and Textiles: 35% of total MSME funding
- Food Processing: 25% of funding allocation
- Gems and Jewelry: 20% of investments
- Engineering and Auto Components: 12% of funding
- Others: 8% of total investments

Emerging Sectors Growth

- Agri-tech startups: 150% funding growth (2022-2024)
- Fintech MSMEs: 200% increase in investments
- E-commerce enablement: 180% funding expansion
- Renewable energy MSMEs: 250% growth in clean energy investments

Green Financing Trends

The Rajasthan MSME Policy 2024 emphasizes sustainable practices with specific green financing incentives:

- Environmental Projects: 50% reimbursement up to ₹1 crore
- Clean Production Technology: 10% subsidy on machinery
- Renewable Energy: 100% electricity duty exemption for 7 years
- Green Rating Benefits: 50% consent fee waiver

Green financing has emerged as a significant trend, with environmental project funding increasing by 300% since 2022.

Challenges in MSME Financing

Structural Challenges

Credit Assessment Difficulties

- Limited financial documentation
- Informal business operations
- Lack of audited financial statements
- Absence of credit history

Collateral Requirements

Despite government guarantee schemes, many lenders continue to require collateral:

- Land and building mortgages
- Equipment hypothecation
- Personal guarantees from promoters
- Fixed deposit margins

Operational Challenges

Processing Delays

- Lengthy loan approval processes
- Multiple documentation requirements
- Verification and technical evaluation delays
- Inter-departmental coordination issues

Interest Rate Concerns

Despite policy interventions, effective interest rates remain high:

- Processing fees and administrative charges
- Guarantee fee components
- Hidden costs in loan products
- Variable interest rate fluctuations

Sector-specific Challenges

Traditional Industries

- Seasonal business cycles affecting cash flows
- Competition from organized sector players
- Technology adoption resistance
- Export market dependencies

Emerging Sectors

- Lack of specialized lender expertise
- Regulatory uncertainty in new domains
- Higher perceived risk premiums
- Limited track record for assessment

Case Studies

Case Study 1: Handicraft MSME Cluster, Jodhpur

Background: Traditional handicraft cluster with 500+ artisan enterprises

Funding Intervention:

- Cluster Development Programme funding: ₹15 crores
- Common Facility Center establishment
- Individual enterprise loans through CGTMSE

Outcomes:

- 40% increase in production capacity
- 25% growth in export revenues
- 200 new employment opportunities created
- Digital platform adoption by 60% enterprises

Case Study 2: Agri-tech Startup, Jaipur

Background: EEKI Foods - Hydroponic farming technology startup

Funding Journey:

- Seed funding: ₹2 crores (2018)
- Series A: ₹15 crores (2020)
- Series B: ₹35 crores (2022)

Government incentives: ₹3 crores (various schemes)

Technology Innovation: Proprietary growing chambers for pesticide-free vegetables

Impact:

- Optimized agricultural production in arid Rajasthan climate

- Created employment for 50+ technical professionals
- Established supply chain across multiple cities

Case Study 3: Renewable Energy MSME

Background: Solar equipment manufacturing unit in Bikaner

Funding Structure:

- Bank loan: ₹8 crores (HDFC Bank)
- SIDBI refinance: ₹3 crores
- Government subsidies: ₹2 crores
- Promoter contribution: ₹2 crores

Green Financing Benefits:

- 100% electricity duty exemption
- Environmental project subsidy
- Carbon credit revenue potential

Results:

- Annual production capacity: 50 MW solar panels
- Export to 5 countries initiated
- Employment for 120 skilled workers

Recommendations:

Streamline Approval Processes

- Single-window clearance implementation
- Time-bound processing commitments

Enhance Credit Guarantee Coverage

- Increase CGTMSE guarantee limits
- Sector-specific guarantee schemes

Strengthen Financial Institution Capacity

- Specialized MSME lending training
- Technology adoption incentives

Product Innovation

- Cash flow-based lending products
- Revenue-based financing models

Digital Transformation

- Mobile-first lending platforms
- API integration with government systems

Financial Literacy Enhancement

- Awareness programs on funding options
- Digital platform usage training

Limitations:

Government papers, state policy PDFs, and industry studies are examples of secondary published sources that are used in this paper. Due to micro-level variation, primary surveys are necessary for accurate attribution; self-declared investment estimates on Udyam are one example of data that might not accurately reflect actual capital needs. In order to evaluate financing shortages by business size and sector, future research could supplement this desk analysis with firm-level surveys conducted throughout Rajasthan districts.

Conclusion:

Comprehensive governmental interventions and changing financial sector dynamics have significantly boosted Rajasthan's MSMEs' finance and investment patterns. A paradigm shift toward comprehensive assistance including the full MSME lifecycle, from birth to expansion, is represented by the Rajasthan MSME Policy 2024.

Key finding indicates:

1. Policy-Driven Growth: Through interest subventions, guarantee programs, and direct subsidies, government actions have significantly increased MSME access to financing.
2. Sector Diversification: Newer industries like agri-tech, fintech, and renewable energy are expanding quickly, while established industries still receive the majority of investment.
3. Digital Transformation: Through automated procedures, digital platforms, and alternative credit evaluation, technology integration is transforming MSME financing.
4. Sustainable finance: With targeted incentives and increasing private sector involvement, green finance has become a major trend.
5. Difficulties Remain: In spite of regulatory changes, structural issues such as procedural hold-ups, collateral requirements, and credit evaluation obstacles still affect MSME funding.

With sustained government assistance, growing private sector involvement, and technologically driven innovation, Rajasthan's MSME financing ecosystem has a bright future. To solve current issues and guarantee equitable growth in all areas and sectors of the state, however, consistent work is needed. In the end, successful finance programs will rely on efficient execution, ongoing oversight, and flexible policy adjustments in response to changing market demands and MSME specifications.

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OVERVIEW OF CSR AND ITS IMPLEMENTATION: STUDY OF SELECTED MNCS

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Abstract:

In the era of fierce competition where every company wants to grow exponentially there is growth of a concept that takes care of the social and environmental consequences of business. Now corporate are not only bothered about earning profit but they also think about the welfare of the society, taken such care of the society is termed as corporate social responsibility or CSR. It is the way through which a company achieves a balance of economic, environmental and social imperatives ("Triple-Bottom-Line- Approach"), focusing on people, planet and profit. While at the same time addressing the expectations of shareholders and stakeholders. It is a corporate initiative to assess and take responsibility for the company's effects on the environment and impact on social welfare. CSR is a tool used to integrate societal objectives with the company's operations and growth.

Keywords: Corporate Social Responsibility, Sustainable Development, Corporate Governance Transparency, Employee Responsibility

Introduction:

Many a times we think corporate and social responsibility are two unconnected words. They are oxymoron, they don't make sense together that is basically due to variety of reasons but one of the issues which world has faced over centuries is that most people lived in abject poverty, less than 2% in each society used to live life lavishly the rest 98% used to live in poverty as servants in servitude and so on. Corporate when they came up like a breath of fresh air, are responsible for the lifestyle we now live in but over the years they have evolved from profit driven entities to socially responsible entities leading to corporate social responsibility

CSR is a self regulating business model by which an organization thinks about its relationships with stakeholders, publics and itself for the common good, and demonstrates its commitment to the well being of society in this regard by adoption of appropriate business processes and strategies by working on the triple bottom line approach, and now with effect from April 1,2014 companies are compelled to react as it has become mandatory now to engage in

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activities that contribute to the social, environmental and economic development of the country. The idea has gained prominence over the last two decades with better understanding and taking different issues by different companies and countries in their own way, whatever may be the method, issues the main objective was to see that the society at par should be benefitted. CSR projects are far more replicable, scalable and sustainable, with a significant multiplier impact on sustainable livelihood creation and environmental replenishment

As per Section 135 of Indian Companies Act 2013, those companies which have an annual turnover of Rs.1000 crore or a net worth of 500 crore or a net profit of 5 crore are mandatorily required to spend 2% of their average net profit for the past three years. There are several activities that can be chosen by companies for discharging corporate social responsibilities such as contributions to PM's funds meant for socio-economic development, activities for promoting sanitation, availability of drinking water, health promotional activities, educational support of women and children, setting up of hostels for women, public library, contribution to research and development of science and technology etc. to name a few. At the same time benefits provided to company's employees and their families as well as donations to political parties are not considered as CSR activities.

The modern times are followed by Globalisation and the rise of variety for the consumers and their welfare is kept in mind to better oneself and the society at large. Some of the Companies based on the corporate social responsibility and its incorporation and implementation policies are studied for the same and the details are given below.

Tata Consulting Services CSR Policy

Tata Consultancy Services, globally referred to as TCS is India's largest software and IT services company. A part of India's largest multinational business Tata group, TCS has over 420,000 of the world's best trained consultants in 50 countries across major continents. Talking about their corporate social responsibility, TCS gives special attention to STEM (Science, Technology Engineering, and Mathematics) and rural education. In keeping with the philosophy of Tata Group, the company channelizes its best resources to improve literacy level and train the innovators and tech geniuses of tomorrow. Other areas of focus for social change include marine conservation, health and sanitation. TCS invests in addressing the most pressing needs of the community through various CSR initiatives and programs focused on education, skilling, employment, and entrepreneurship, aligned with the UN Sustainable Development Goals (UN SDGs). With a focus on bridging gaps in access to opportunities, TCS also invests in social innovation and community projects targeted the poorest sections of society, and supports programs addressing basic health and wellness, water sanitation and hygiene, conservation, and disaster relief efforts.

TCS has provided an integrated Hospital Management System and IT infrastructure, which includes a comprehensive and fully integrated web-based solution to The Cancer Institute, Chennai. TCS has also provided support to integrate the Health Insurance Scheme with the National Medical Commission (NMC) dashboard to facilitate daily syncing of patient data and statistics to aid monitoring and auditing. It has also been building new features including compliance with statutory requirements

Adult non-literacy continues to be a problem holding back India from reaching its full economic potential. Women account for 65% of the illiterate population, and the rest is from marginalized communities. To address the causes of non-literacy, TCS devised the Literacy as a Service Programme (LaaS) which augments the Government of India's efforts to improve literacy. Ignite My Future (IMF) Ignite My Future is a teacher professional development program which introduces the concept of computational thinking into all core subjects. This is a transdisciplinary education programme that transforms the way students learn. Teachers and students from schools like School of Scholars (Maharashtra), BGS Schools (Karnataka), Podar International School (Maharashtra), Rajya Ashram Paddhati Vidyalaya (Samaj Kalyan Department, Uttar Pradesh), APSWREIS (Andhra Pradesh) in India have collaborated with schools from North America under this program

Imperial Tobacco Company CSR Policy

Imperial Tobacco Company also known as ITC is one of the leading companies of India having a diverse portfolio and is engaged in several CSR initiatives over the years.ITC believes that a company's performance must be measured by its Triple Bottom Line contribution to building economic, social and environmental capital towards enhancing societal sustainability and the strategic context of business, enterprises possess, beyond mere financial resources, the transformational capacity to create game-changing development models by unleashing their power of entrepreneurial vitality, innovation and creativity. ITC has crafted unique models to generate livelihoods and environmental capital. Enhancing environmental and natural capital, supporting rural development; promoting education; providing preventive healthcare, providing sanitation and drinking water; creating livelihoods for people, especially those from disadvantaged sections of society, in rural and urban India; preserving and promoting sports; Developing the required capability and self-reliance of beneficiaries at the grass roots for social and economic development; Engaging in affirmative action interventions such as skill building and vocational training, to enhance employability and generate livelihoods for persons from disadvantaged sections of society; Pursuing in areas that fall within the economic vicinity of the Company's operations to enable close supervision and ensure maximum development impact; Carrying out in relevant local areas to fulfill commitments arising from requests by government/regulatory authorities and to earmark amounts of monies towards "Enterprise Social Responsibility (ESR)" activities and to spend such monies

As a corporate citizen with enduring relationships in rural India, ITC has a history of collaboration with communities and government institutions to enhance farm productivity and the rural resource base. ITC's commitments in agricultural R&D and knowledge sharing have spanned vital aspects of competitiveness - efficient farm practices, soil and water management.

ITC is committed to a national agenda of raising agricultural productivity and making the rural economy more socially inclusive. ITC believes that the urgency and scale of these tasks make market linked solutions and innovations more effective and sustainable than capital intensive approaches.

e - Choupal	4 million farmers empowered, 6,500 e - Choupals installed
Social & Farm Forestry	114,428 hectares greened, generating 51.48 million person - days of employment
Watershed Development	56,951 hectares brought under soil and moisture conservation
Women's Empowerment	15,378 women members 1183 self - help groups
Livestock Development	176 Cattle Development Centres 3,520 villages covered annually
Primary Education	252,329 children covered through 2,334 Supplementary Learning Centres

ITC e-Choupal' corporate social responsibility focus on farmers's empowerment through access to information, services, and markets, leading to increased incomes and improved supply chains. By creating internet kiosks in villages, farmers gain direct access to pricing, weather updates, and best practices, reducing reliance on middlemen and improving their ability to bargain collectively. The initiative evolved to become a broader platform for rural development

Wipro's CSR Policy

Wipro view is that it is critical to engage with the social and ecological challenges that face humanity. Social programs on a strong foundation of ethical principles, good governance and sound management. This includes, among other things, holding ourselves up to public scrutiny through a framework of transparent, rigorous reporting. Its engagement with social and ecological issues goes back a long time. The central tenets of its approach have been the emphasis on strong, meaningful work on systemic social issues. Its policy reflects these principles and strategies that have informed long history of corporate citizenship and social responsibility over the years.

1. Wipro's foremost responsibility of an organization is to run its business ethically and in compliance with the law in letter and spirit, with a set of foundational values as embodied in Spirit of Wipro and comprises, at the least, the following three principles
   a) Unwavering integrity in every aspect of business.
   b) Treating people everywhere fairly and with respect – at the workplace as well as in communities outside.
   c) Showing ecological sensitivity in thought and action.
2. Its approach to social responsibility and sustainability rests on three important pillars.
   a) The Strategic: Social responsibility is as much about being a sustainable organization as it is about external initiatives. Therefore, some of its areas of engagement lie at the convergence of business goals and social purpose.
   b) The Systemic: Within the chosen domains, engaging on systemic issues that require deep, meaningful and challenging work.
   c) The Deliberative: emphasis is on depth and on long term commitment implies a deliberative approach that precludes spreading ourselves thin or engaging in 'cheque book philanthropy'. By implication, this also means that we are wary of expanding and growing our social programs as ends in themselves.
3. Governance and Management: The Board Governance, Nomination and Compensation Committee will be the apex body that will oversee its CSR policy and programs. The committee comprises of following independent directors, Member An officer of the company at the senior most level will report to the Board CSR committee, who looks after the goals, objectives and budgets. Comprehensive, transparent reporting on sustainability.
4. Implementation: is through multiple channels – a separate trust (e.g. Wipro Cares) or directly through functions and groups within the company that have been set up for this purpose. Decisions will be taken by the CSR leadership of the company. The approach is to primarily work through partners with established track records in the respective domains. The majority of its projects are long-term multi-year programs.
5. CSR and sustainability must transcend boundaries whether organizational or national. Wipro's social and sustainability initiatives center on Education, Ecology, and Community Care.

The principles for the programs are:

1. **Education:** Engaging in deep and meaningful systemic work in the area of school and college education.
2. **Community Ecology and Health Care:** Engaging with the community on issues of health care, ecology and education for the underprivileged of rural and marginalized populations to promote sustainable well-being and equitable access to resources.
3. **Business Sustainability:** Reducing and minimizing the environmental footprint of our operations and enhancing the biodiversity.
4. **Diversity:** Encouraging and enhancing diversity at the workplace and outside on gender, nationality and persons with disability work in education is driven by the belief that education is a key enabler of social change and a better society, believe in a social vision of democracy where each citizen is not only capable in an individual sense but also sees the ethic of equity, the essentiality of diversity, the ethos of justice, and is thus driven by social sensitivity.
5. **School Education in India:** Systematic issues in school education in India through a network of partner organizations. Over the past 14 years, it is associated with 60 organizations at different levels and have worked closely with 35 organizations working in improvement of school education, through organization level and project-level support for 67 projects till now, which has contributed to systemic improvements at multiple levels including state and central government level educational reforms.
6. **Education for Children with Disability:** There has been inadequate focus on education for children with disability. Sustainability Education: Started in 2011, the program brings together key concerns: school education and sustainability. This program reached out to more than 3000 schools, 3500 educators and 15000 students since inception. School Education outside of India: Contribute to improve Science and Math education in schools primarily serving disadvantaged communities in US cities. The program is currently active in Chicago, in New Jersey, New york and in Boston Engineering Education, the IT Services industry contributes to nearly 8% of the GDP. Skills development for students that is based on a comprehensive framework of postgraduate level education and (b) Capacity building among the faculty of engineering colleges. The Wipro Academy of Software Excellence (WASE) program helps Science graduates to study for a Master's degree in Software Engineering (M.Tech). Run in partnership with the Birla Institute of Technology & Science (BITS), Pilani, India, this unique program blends rigorous academic exposure with practical professional learning at the workplace, we run a similar

program called WISTA in collaboration with Vellore Institute of Technology (VIT) for science graduates without a mathematics background. Since 2007, it has reached out to nearly 27500 faculty across 1300+ colleges in 27 states.

Primary Health Care: touches the lives of 50000 people in 45 village communities in the areas of Waluj, Amalner, Mysore, Tumkur and Hindupur in India. Engaging in a number of significant post-disaster rehabilitation projects, most notable of which have been the Gujarat earthquake, the Tamil Nadu tsunami and the Karnataka floods. Business Sustainability: working based on the Triple Bottom line framework, focuses on a range of ecological and workplace initiatives, the principal ones of which center around Energy and Carbon, Water, Waste, Biodiversity, Product Stewardship, Supply Chain Responsibility, People Diversity on the aspects of Gender, Disability and Nationality, Employee health, wellness and safety, Employee empowerment through continuous learning and advocacy forums and a framework of comprehensive public reporting .

It has a presence in more than 57 countries around the world; of our workforce of more than 145,000 employees, 11% comprise nationalities other than Indian. Issues of healthcare, education, access to energy, water and sanitation and livelihoods are often closely inter-linked.

Wipro's Charter on CSR it is critical to engage with the social and ecological challenges that face humanity. It is the conviction that the engagement with social issues must be deep, meaningful and formed on the bedrock of long-term commitment; for that is the only way by which real change can happen on the ground. This is also reflective of the fact that such an approach serves both, enlightened business interest and social good. its social programs run on a strong foundation of ethical principles, good governance and sound management.

Starbucks CSR:

Starbucks is a leading coffee company that has adopted various CSR practices to address social and environmental issues that affect its operations and impact. For example, Starbucks has sourced its coffee beans from certified suppliers that follow ethical and sustainable farming practices. Starbucks has also reduced its water and energy consumption by installing efficient equipment and devices in its stores. Moreover, Starbucks has supported various social causes and initiatives such as education, health, diversity, etc. by donating money, products, or services.

Unilever CSR:

Unilever is a leading consumer goods company that has adopted various CSR practices to improve its social and environmental performance and sustainability. For example, Unilever has reduced its greenhouse gas emissions, water usage, and waste generation by implementing its Sustainable Living Plan. Unilever has also improved the health and well-being of its consumers by providing nutritious and safe products. Furthermore, Unilever has enhanced the livelihoods of its suppliers and employees by providing fair wages, training, and opportunities.

Conclusion:

Corporate Social Responsibility is more than a corporate trend. it's a vital practice which ultimately establishes the goodwill of the company and project it a responsible entity. It represents a long-term, structured commitment to societal development and welfare. CSR programmes and their communication are not just about 'doing good' - they are strategic imperatives for businesses in the 21st century. They can help companies stand out in a crowded marketplace, foster goodwill, and ultimately contribute to long-term success. Let's hope more and more companies follow this and shine

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लोकसभा चुनाव 2024 और मतदान व्यवहार

चन्द्रशेखर पटेल

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सार:

लोकसभा चुनाव 2024 भारत के लोकतंत्र में एक महत्वपूर्ण मील का पत्थर साबित घटित हुआ, जो न केवल राजनीतिक दलों के बीच प्रतिस्पर्धा का केंद्र बनें, बल्कि यह मतदाताओं के बदलते मतदान व्यवहार को भी दर्शाए गाए। भारतीय चुनावी राजनीति में मतदान व्यवहार के विभिन्न पहलू थे, जैसे जाति, धर्म, आय, शिक्षा, और सामाजिक स्थिति, जो मतदाताओं के निर्णय को प्रभावित किए। लोकसभा चुनाव 2024 भारत में एक महत्वपूर्ण राजनीतिक घटना हुआ, जिसमें मतदाता अपने मताधिकार का प्रयोग करते हुए देश के भविष्य को आकार दीये। मतदान व्यवहार में बदलाव, जैसे अधिक सूचित मतदान, युवा वर्ग का सक्रिय भागीदारी, और डिजिटल मीडिया का प्रभाव, चुनावी परिदृश्य को नया रूप दीये। विभिन्न सामाजिक और आर्थिक पहलू चुनावी परिणामों को प्रभावित किए, और यह चुनाव न केवल राजनीतिक दलों के लिए, बल्कि देश की समग्र दिशा के लिए भी निर्णायक साबित किए

मुख्य शब्द: लोकसभा चुनाव 2024, मतदान व्यवहार, भारतीय राजनीति, मतदाता जागरूकता, जातीय राजनीति, धर्म आधारित ध्रुवीकरण, चुनावी मुद्दे, युवा मतदाता, सोशल मीडिया का प्रभाव

परिचय:

लोकसभा चुनाव 2024 भारतीय लोकतंत्र के लिए एक महत्वपूर्ण अवसर रहा, जो देश के राजनीतिक परिदृश्य को आकार देने में निर्णायक भूमिका निभायां। भारतीय चुनावी प्रणाली में, हर पाँच साल में लोकसभा चुनाव हुए, जहां लोग अपने प्रतिनिधियों का चयन करते हैं। चुनावी प्रक्रिया में मतदाताओं का व्यवहार, उनके मत देने की प्रवृत्तियां, और विभिन्न चुनावी मुद्दे चुनावी परिणामों को प्रभावित किए। 2024 के लोकसभा चुनाव में मतदाता पहले से अधिक सूचित हुआ थे , और उनका मतदान व्यवहार बदल चुका थे, जो मुख्य रूप से सामाजिक, राजनीतिक, और आर्थिक कारकों पर निर्भर किए, लोकसभा चुनाव 2024 में भारत में मतदान व्यवहार और उसके परिणामों के बारे में कई महत्वपूर्ण रुझान देखने को मिले। यह चुनाव भारतीय राजनीति में कई बदलावों का प्रतीक था, और इसमें मतदान व्यवहार को प्रभावित करने वाले कई कारक थे। आइए, 2024 के लोकसभा चुनाव के मतदान व्यवहार पर एक नजर डालें:

1. राष्ट्रीय मुद्दों का प्रभुत्व:

- **सुरक्षा और आतंकवाद**: 2024 में, राष्ट्रीय सुरक्षा और आतंकवाद को प्रमुख चुनावी मुद्दा बनाया गया। पुलवामा हमले के बाद, भारतीय सेना की एयर स्ट्राइक और सुरक्षा से जुड़े मुद्दे ने मतदाताओं को प्रभावित किया। सरकार ने इसे अपने चुनावी प्रचार का एक अहम हिस्सा बनाया, और इसका असर मतदान व्यवहार पर देखा गया।
- **नारी सुरक्षा और सशक्तिकरण**: महिला सुरक्षा और उनके सशक्तिकरण पर भी जोर दिया गया। विभिन्न योजनाओं जैसे "उज्ज्वला योजना" (गैस कनेक्शन योजना) और "बेटी बचाओ, बेटी पढ़ाओ" जैसी योजनाओं ने महिलाओं के बीच एक सकारात्मक संदेश दिया और उनका मतदान व्यवहार प्रभावित किया।

2. जातीय और धार्मिक ध्रुवीकरण:

- 2024 के चुनाव में जातीय और धार्मिक समीकरण का भी बड़ा असर था। भारतीय जनता पार्टी (BJP) ने हिन्दू मतदाताओं को एकजुट करने का प्रयास किया, जबकि कांग्रेस और अन्य विपक्षी दलों ने विभिन्न धार्मिक और जातीय समूहों के बीच गठबंधन बनाने की कोशिश की। इस बार हिन्दू वोट और मुस्लिम मतदाताओं के बीच विभाजन स्पष्ट था।
- बीजेपी ने अपनी चुनावी रणनीति में यह सुनिश्चित किया कि हिन्दू मतदाता एकजुट हो जाएं, और विपक्ष ने मुस्लिम और दलित समुदायों को अपना समर्थन हासिल करने की कोशिश की।

3. युवाओं का मतदान रुझान:

- 2024 में युवाओं का वोट काफी महत्वपूर्ण था। सोशल मीडिया और डिजिटल प्लेटफॉर्म्स के जरिए बीजेपी और अन्य पार्टियों ने युवाओं से जुड़ने की कोशिश की। खासकर, सोशल मीडिया पर प्रधानमंत्री मोदी और बीजेपी के खिलाफ और समर्थन में कई बहसें चलीं। यह देखा गया कि सोशल मीडिया पर युवाओं का रुझान काफी बढ़ा और यह चुनावी रणनीतियों का एक अहम हिस्सा बन गया।
- इसके अलावा, पहली बार मतदान करने वाले युवाओं की संख्या भी अधिक रही, और उन्होंने अपने वोट से चुनाव परिणामों पर प्रभाव डाला।

4. महिलाओं का बढ़ता मतदान प्रतिशत:

- 2024 में महिला मतदाताओं का मतदान प्रतिशत बढ़ा था। ग्रामीण इलाकों में खासकर महिलाओं का चुनावी प्रक्रिया में सक्रिय भागीदारी देखी गई। सरकार ने महिलाओं के लिए कई योजनाएं शुरू की थीं, जैसे उज्ज्वला योजना और जन धन योजना, जिनका सीधा असर महिलाओं के बीच सकारात्मक चुनावी रुझान में पड़ा।
- महिला मतदाता अधिक जागरूक और सक्रिय हो चुकी थीं, और यह मतदान व्यवहार में महत्वपूर्ण बदलाव लेकर आया।

5. आर्थिक मुद्दों का प्रभाव:

- 2024 में महंगाई, बेरोजगारी, और आर्थिक असमानता जैसे मुद्दे प्रमुख थे। विपक्षी दलों ने मोदी सरकार पर इन मुद्दों पर पर्याप्त ध्यान न देने का आरोप लगाया, जबकि भाजपा ने अपनी सरकार की आर्थिक नीतियों का बचाव किया, जैसे जीएसटी और मुद्रा योजना।
- हालांकि, आर्थिक मुद्दे विपक्ष के प्रचार का अहम हिस्सा बने रहे, लेकिन राष्ट्रीय सुरक्षा और भ्रष्टाचार के खिलाफ सरकार के अभियान ने अधिक प्रभाव डाला।

6. गठबंधन राजनीति और क्षेत्रीय दलों का प्रभाव:

- 2024 के चुनाव में गठबंधन राजनीति महत्वपूर्ण थी। क्षेत्रीय दलों ने गठबंधन बनाने का प्रयास किया था, जैसे कि महागठबंधन (कांग्रेस और अन्य क्षेत्रीय दलों का गठबंधन) । लेकिन बीजेपी और उसके सहयोगी दलों ने 2024 में व्यापक जीत हासिल की।
- विपक्षी दलों के बीच संघर्ष और क्षेत्रीय दलों का भी एक महत्वपूर्ण योगदान था, हालांकि, भाजपा के साथ मुकाबला करना उन्हें चुनौतीपूर्ण साबित हुआ।

7. डिजिटल प्रचार का बढ़ता प्रभाव:

- 2024 में सोशल मीडिया और डिजिटल प्रचार का प्रयोग कई गुणा बढ़ गया था। बीजेपी ने सोशल मीडिया का इस्तेमाल अपनी जीत के लिए एक अहम टूल के रूप में किया। फेसबुक, ट्विटर और व्हाट्सएप पर चुनावी प्रचार ने अधिकतर युवाओं और शहरी मतदाताओं को प्रभावित किया।
- इसके अलावा, सोशल मीडिया के माध्यम से फर्जी खबरों का प्रसार भी हुआ था, जिसने चुनावी बहस को और जटिल बना दिया।

8. मतदान प्रतिशत में वृद्धि:

- 2024 के चुनाव में मतदान प्रतिशत में वृद्धि देखी गई। 2019 के मुकाबले 2024 में अधिक लोगों ने मतदान किया। यह मुख्य रूप से युवाओं और महिला मतदाताओं की सक्रिय भागीदारी के कारण हुआ।

9. भारत में दलित और पिछड़े वर्गों का मतदाता रुझान:

- 2024 में दलित और पिछड़े वर्ग के मतदाताओं ने भी अपना प्रभाव दिखाया। बीजेपी ने अनुसूचित जाति और अनुसूचित जनजाति वर्ग के लिए कई योजनाएं पेश की, जैसे "प्रधानमंत्री आवास योजना" और "स्वच्छ भारत मिशन", जो इन वर्गों के बीच लोकप्रिय हुईं।
- कांग्रेस और अन्य विपक्षी दलों ने इन वर्गों को अपनी ओर आकर्षित करने के लिए विशेष योजनाओं और वादों का प्रचार किया।

लोकसभा चुनाव 2024 के प्रभावशाली कारक

1. जातीय और धार्मिक समीकरण

- **धार्मिक ध्रुवीकरण**: 2024 में हिन्दू और मुस्लिम मतदाताओं के बीच एक स्पष्ट विभाजन देखा गया। बीजेपी ने हिन्दू वोट को अपनी ओर आकर्षित करने के लिए धार्मिक एजेंडे का इस्तेमाल किया, जबकि कांग्रेस और अन्य विपक्षी दलों ने मुस्लिम और दलित समुदाय को अपने साथ लाने के प्रयास किए।
- **सामाजिक ध्रुवीकरण**: चुनाव में जातीय समीकरण भी महत्वपूर्ण थे, जहां बीजेपी ने विशेष रूप से ओबीसी और सामान्य जातियों के मतदाताओं को आकर्षित किया, जबकि कांग्रेस और अन्य दलों ने दलित और मुस्लिम समुदाय पर जोर दिया।

2. महिला सशक्तिकरण और योजनाएँ

- **महिला योजनाएँ**: महिला मतदाताओं के बीच सक्रियता बढ़ी थी, क्योंकि सरकार ने महिला सशक्तिकरण के लिए कई योजनाएं शुरू की थीं। उज्ज्वला योजना (गैस कनेक्शन), प्रधानमंत्री आवास योजना और बेटी बचाओ, बेटी पढ़ाओ जैसी योजनाओं ने महिलाओं को आकर्षित किया और उनकी मतदान में भागीदारी को बढ़ावा दिया।
- **महिला मतदाता का रुझान**: महिलाओं के लिए विशेष योजनाओं ने उन्हें मतदान करने के लिए प्रेरित किया, और चुनाव में महिलाओं का प्रतिशत बढ़ा।

3. युवाओं का वोट

- **सोशल मीडिया का प्रभाव**: 2024 के चुनाव में सोशल मीडिया और डिजिटल प्लेटफॉर्म्स का प्रभाव काफी बढ़ा था, खासकर युवाओं के बीच। सोशल मीडिया पर प्रधानमंत्री मोदी के समर्थक और विरोधी दोनों ही सक्रिय थे।

बीजेपी ने फेसबुक, ट्विटर, व्हाट्सएप आदि का इस्तेमाल किया, जो युवाओं को चुनावी प्रक्रिया से जोड़ने में मददगार साबित हुआ।

- **युवा मतदाताओं की बढ़ती संख्या**: पहली बार वोट करने वाले युवाओं की संख्या में वृद्धि देखी गई थी। इन मतदाताओं ने अपने पसंदीदा उम्मीदवारों और दलों के पक्ष में मतदान किया, और यह चुनावी परिणामों पर असर डालने वाला प्रमुख कारक था।

4. आर्थिक मुद्दे

- **महंगाई और बेरोजगारी**: विपक्ष ने महंगाई और बेरोजगारी के मुद्दे को प्रमुखता से उठाया, लेकिन बीजेपी ने अपनी योजनाओं जैसे मुद्रा योजना, स्वच्छ भारत मिशन, और प्रधानमंत्री आवास योजना का प्रचार किया, जो गरीबी और रोजगार से जुड़े मुद्दों पर केंद्रित थीं।
- **कृषि संकट**: किसानों के मुद्दे पर भी चर्चा हुई, खासकर उनके लिए समर्थन की आवश्यकता पर जोर दिया गया। हालांकि, यह मुद्दा अधिक प्रभावी नहीं हो पाया क्योंकि राष्ट्रीय सुरक्षा और हिंदू-मुस्लिम समीकरण ने चुनावी प्रचार को प्रभावित किया।

5. गठबंधन और विपक्ष की रणनीतियाँ

- **महागठबंधन का असफलता**: कांग्रेस और अन्य विपक्षी दलों ने महागठबंधन बनाने का प्रयास किया, लेकिन यह गठबंधन सही तरह से चुनावी प्रचार नहीं कर सका। विपक्ष के पास एक मजबूत और स्पष्ट नेतृत्व का अभाव था, जो चुनावी रणनीति को कमजोर करता था।
- **क्षेत्रीय दलों की भूमिका**: क्षेत्रीय दलों ने अपनी ताकत को बनाए रखा, लेकिन राष्ट्रीय स्तर पर बीजेपी और उसके सहयोगियों के सामने उनकी रणनीति नाकाम रही। क्षेत्रीय मुद्दों ने राज्य स्तर पर ही असर डाला, राष्ट्रीय स्तर पर उनका बड़ा प्रभाव नहीं था।

6. नरेंद्र मोदी की छवि और नेतृत्व

- **"मोदी लहर"**: 2024 के चुनाव में नरेंद्र मोदी की व्यक्तिगत छवि का भी महत्वपूर्ण असर था। प्रधानमंत्री मोदी को एक मजबूत और निर्णायक नेता के रूप में देखा गया, और उनकी छवि ने बीजेपी को महत्वपूर्ण वोट बैंक दिलाया।
- **विपक्षी दलों की आलोचना**: विपक्ष ने मोदी सरकार पर कई आरोप लगाए, जैसे आर्थिक असफलता, बेरोजगारी, और किसान संकट, लेकिन मोदी के नेतृत्व की छवि ने कई मतदाताओं को आकर्षित किया।

7. फेक न्यूज और प्रचार

- **सोशल मीडिया और फेक न्यूज**: 2024 के चुनाव में सोशल मीडिया प्लेटफॉर्म्स पर फर्जी खबरों का प्रसार हुआ। इसने मतदाताओं को भ्रमित किया और चुनावी प्रचार में नई चुनौती पेश की। राजनीतिक दलों ने सोशल मीडिया का इस्तेमाल अपने पक्ष में प्रचार करने के लिए किया।

8. जातीय और क्षेत्रीय असंतोष

- **क्षेत्रीय असंतोष**: कुछ राज्यों में क्षेत्रीय असंतोष भी देखने को मिला, जैसे कि महाराष्ट्र, उत्तर प्रदेश, और पश्चिम बंगाल में। क्षेत्रीय दलों और उनकी नीतियों का असर वहां के चुनावी परिणामों पर पड़ा।

राम मंदिर का मुद्दा 2024 के लोकसभा चुनाव में एक महत्वपूर्ण राजनीतिक और धार्मिक कारक बनकर उभरा। यह मुद्दा भारतीय राजनीति में लंबे समय से चर्चा में रहा था और 2024 के चुनाव में इसका असर विशेष रूप से भारतीय जनता पार्टी (BJP) के पक्ष में दिखा। आइए, विस्तार से समझते हैं कि राम मंदिर ने 2024 के चुनाव में कैसे प्रभाव डाला:

1. राम मंदिर और भाजपा का प्रचार

- **राम मंदिर का मुद्दा**: राम मंदिर का मुद्दा लंबे समय से भारतीय राजनीति में गूंज रहा था, विशेष रूप से 1990 के दशक में जब बीजेपी ने इसे प्रमुख रूप से उठाया था। अयोध्या में बाबरी मस्जिद के विध्वंस के बाद से ही यह मामला न्यायिक प्रक्रिया और राजनीतिक बहस का हिस्सा बन गया था।
- **बीजेपी और राम मंदिर**: 2024 के चुनाव के दौरान, बीजेपी ने राम मंदिर निर्माण को एक प्रमुख चुनावी मुद्दा बना लिया। पार्टी के शीर्ष नेताओं, खासकर प्रधानमंत्री नरेंद्र मोदी ने चुनावी प्रचार के दौरान इस मुद्दे का लगातार उल्लेख किया।

2. राम मंदिर का धार्मिक और राजनीतिक प्रभाव

- **हिंदू मतदाताओं का समर्थन**: राम मंदिर का मुद्दा विशेष रूप से हिंदू समुदाय के बीच बड़ा समर्थन जुटाने में सफल रहा। बीजेपी ने यह दावा किया कि केवल उनके नेतृत्व में राम मंदिर का निर्माण संभव है और इसके लिए वे पूरी तरह प्रतिबद्ध हैं।
- **"हिंदू कार्ड"**: बीजेपी ने राम मंदिर के मुद्दे को "हिंदू कार्ड" के रूप में इस्तेमाल किया और इसे अपनी चुनावी रणनीति का हिस्सा बनाया। पार्टी ने यह संदेश दिया कि वे हिंदू धर्म और संस्कृति के प्रति अपनी प्रतिबद्धता को प्रमाणित करने के लिए राम मंदिर का निर्माण करेंगे।
- **राम मंदिर पर कानूनी प्रक्रिया**: 2019 में राम मंदिर पर सुप्रीम कोर्ट का फैसला भी आने वाला था। इस मुद्दे को लेकर धार्मिक भावनाएँ उत्तेजित थीं और बीजेपी ने इसका फायदा उठाने की कोशिश की, ताकि यह मुद्दा उनकी चुनावी सफलता में योगदान दे सके।

3. विपक्ष का रुख

- **विपक्षी दलों का विरोध**: कांग्रेस और अन्य विपक्षी दलों ने राम मंदिर के मुद्दे पर बीजेपी की राजनीति की आलोचना की। उनका कहना था कि बीजेपी ने यह मुद्दा केवल चुनावी लाभ के लिए उभारा और यह एक धार्मिक ध्रुवीकरण की राजनीति का हिस्सा था।
- **स्मृति ईरानी और अयोध्या यात्रा**: बीजेपी नेताओं ने अयोध्या का दौरा किया और राम मंदिर निर्माण का समर्थन किया। स्मृति ईरानी जैसे नेताओं ने इस मुद्दे को सामने लाकर अपनी चुनावी रणनीति को आगे बढ़ाया।

4. राम मंदिर के बारे में सुप्रीम कोर्ट का फैसला

- **सुप्रीम कोर्ट में सुनवाई**: 2019 में राम मंदिर पर सुप्रीम कोर्ट का फैसला आने वाला था। बीजेपी ने इस फैसले को प्रमुख मुद्दा बनाया और यह दावा किया कि उनके नेतृत्व में ही राम मंदिर का निर्माण संभव है।
- **सुप्रीम कोर्ट का ऐतिहासिक निर्णय**: हालांकि, सुप्रीम कोर्ट ने नवंबर 2019 में राम मंदिर के पक्ष में फैसला सुनाया और यह तय किया कि अयोध्या में राम मंदिर बनाया जाएगा, लेकिन चुनाव के दौरान यह मुद्दा बीजेपी के लिए एक ताकतवर चुनावी उपकरण बन गया था।

5. राम मंदिर और बीजेपी की जीत

- **राम मंदिर और "मोदी लहर"**: राम मंदिर का मुद्दा 2024 के चुनाव में बीजेपी की "मोदी लहर" के साथ जुड़ गया। यह मुद्दा बीजेपी के चुनावी प्रचार में एक प्रमुख विषय था और इसे मोदी सरकार के लिए एक सकारात्मक मुद्दा माना गया।
- **हिंदू वोटों का समर्थन**: राम मंदिर के मुद्दे ने बीजेपी को हिंदू मतदाताओं से मजबूत समर्थन दिलाया, विशेषकर उन इलाकों में जहां धार्मिक पहचान और हिंदू संस्कृति के मुद्दे महत्वपूर्ण थे।

लोकसभा चुनाव 2024 और मतदान व्यवहार पर मेथोडोलॉजी:

लोकसभा चुनाव 2024 और मतदान व्यवहार पर अध्ययन करने के लिए एक ठोस और वैज्ञानिक मेथोडोलॉजी का उपयोग करना जरूरी है। इस अध्ययन के दौरान विभिन्न कारकों का विश्लेषण किया जाता है, जिनका मतदान व्यवहार पर असर पड़ा, जैसे जाति, धर्म, आर्थिक स्थिति, और सामाजिक-राजनीतिक कारक। यहां, हम इस अध्ययन के लिए उपयुक्त मेथोडोलॉजी को विस्तार से समझेंगे:

1. सर्वेक्षण

- **जनमत सर्वेक्षण**: मतदान व्यवहार का आकलन करने के लिए जनमत सर्वेक्षण महत्वपूर्ण होते हैं। 2024 के चुनावों में, कई मीडिया संस्थानों और एजेंसियों ने वोटिंग पैटर्न पर सर्वेक्षण किए थे। इन सर्वेक्षणों में विभिन्न सामाजिक-आर्थिक वर्गों, जातीय और धार्मिक समूहों से जुड़े मतदाताओं के रुझान को मापा गया।
- **सर्वे के प्रश्न**: सवालों का चयन इस प्रकार किया जाता है कि वे मतदाताओं की प्राथमिकताओं, चुनावी मुद्दों (जैसे राम मंदिर, बेरोजगारी, महंगाई आदि), और दलों या उम्मीदवारों के प्रति उनके रुझान को जान सकें।

2. डेटा संग्रहण

- **प्राथमिक डेटा**: इस प्रक्रिया में मतदाताओं से सीधे जानकारी एकत्रित की जाती है, जैसे कि व्यक्तिगत साक्षात्कार (interviews), समूह चर्चा (focus group discussions), और फोन सर्वे। ये विधियाँ यह समझने में मदद करती हैं कि मतदाता किन मुद्दों पर ध्यान केंद्रित कर रहे थे और उनका चुनावी व्यवहार किस प्रकार से प्रभावित हुआ।
- **दुतिया डेटा**: यह डेटा चुनाव आयोग, मीडिया रिपोर्ट्स, और अन्य सरकारी और निजी स्रोतों से प्राप्त किया जाता है। इस डेटा से हम पिछले चुनावों के रुझान, चुनाव परिणाम, और समाज के विभिन्न वर्गों के मतदान पैटर्न को समझ सकते हैं।

3. सामाजिक-आर्थिक वर्गों का विश्लेषण

- **जाति और धर्म**: मतदान व्यवहार पर जाति और धर्म का प्रभाव महत्वपूर्ण होता है, खासकर भारतीय चुनावों में। 2024 में राम मंदिर का मुद्दा और बीजेपी का हिंदूवादी एजेंडा ने इस पर महत्वपूर्ण असर डाला। जातीय समूहों (जैसे ओबीसी, दलित, आदिवासी) और धार्मिक समूहों (हिंदू, मुस्लिम) के मतदान व्यवहार को विश्लेषित किया जाता है।
- **आर्थिक स्थिति**: गरीब और अमीर, ग्रामीण और शहरी क्षेत्रों के बीच मतदान व्यवहार में अंतर होता है। चुनावों के दौरान आर्थिक मुद्दों जैसे बेरोजगारी, महंगाई और किसानों के मुदे ने प्रभावित किया। इसे ध्यान में रखते हुए वोटिंग पैटर्न का विश्लेषण किया जाता है।

4. क्वांटिटेटिव और क्वालिटेटिव विश्लेषण

- **क्वांटिटेटिव विश्लेषण**: मतदान व्यवहार को समझने के लिए आंकड़ों का विश्लेषण किया जाता है। इसमें मतदान प्रतिशत, जाति/धर्म के आधार पर मतदान, और विभिन्न सामाजिक समूहों के वोट प्रतिशत की तुलना की जाती है। इसके लिए सांख्यिकीय उपकरण जैसे टेबल, ग्राफ और आंकड़े का उपयोग किया जाता है।
- **क्वालिटेटिव विश्लेषण**: इसके अंतर्गत हम वोटरों के व्यक्तिगत विचार, उनके मतदान निर्णय, और चुनावी मुद्दों पर उनके दृष्टिकोण को समझने के लिए गहरे विचार और समूह चर्चा का उपयोग करते हैं। इस विधि से हम मतदान के पीछे के कारणों को समझ सकते हैं।

5. राजनीतिक और मीडिया प्रभाव

- **मीडिया के प्रभाव का विश्लेषण**: 2024 के चुनाव में मीडिया (टीवी, रेडियो, सोशल मीडिया) ने महत्वपूर्ण भूमिका निभाई थी। विभिन्न मीडिया संस्थानों के चुनाव प्रचार ने वोटरों के विचारों को प्रभावित किया। सोशल मीडिया प्लेटफॉर्म्स (फेसबुक, ट्विटर, व्हाट्सएप) ने चुनावी रुझानों पर प्रभाव डाला, और इन प्लेटफार्मों पर प्रचार का विश्लेषण किया जाता है।
- **राजनीतिक दलों की रणनीतियाँ**: चुनाव में विभिन्न राजनीतिक दलों द्वारा अपनाई गई रणनीतियों का विश्लेषण किया जाता है, जैसे बीजेपी द्वारा राम मंदिर और सुरक्षा जैसे मुद्दों पर जोर देना, और कांग्रेस द्वारा बेरोजगारी और कृषि संकट पर ध्यान केंद्रित करना।

6. मुद्दों का विश्लेषण

- **राष्ट्रीय सुरक्षा और राम मंदिर**: जैसे ही पुलवामा हमला हुआ और भारतीय सेना ने एयर स्ट्राइक की, यह मुद्दा प्रमुख बन गया। बीजेपी ने इसे अपने चुनाव प्रचार का हिस्सा बनाया, और इसे हिंदू मतदाताओं को आकर्षित करने के लिए इस्तेमाल किया।
- **आर्थिक मुद्दे**: महंगाई, बेरोजगारी और किसानों के मुद्दों ने विपक्ष को मजबूत किया, लेकिन बीजेपी ने अपने आर्थिक सुधारों और योजनाओं (मुद्रा योजना, प्रधानमंत्री आवास योजना) को प्रमुखता दी।
- **जातीय और धार्मिक मुद्दे**: राम मंदिर और अन्य धार्मिक मुद्दों ने मतदाताओं के रुझानों को प्रभावित किया, और इन पर डेटा एकत्रित कर विश्लेषण किया जाता है कि यह मुद्दे कितने प्रभावी रहे।

7. वोटिंग पैटर्न पर विश्लेषण

- **मतदान प्रतिशत**: 2024 के चुनाव में कुल मतदान प्रतिशत में वृद्धि देखी गई, और यह आंकड़ा राज्य और जातीय समूहों के आधार पर विभिन्न था। वोटिंग पैटर्न को समझने के लिए यह डेटा महत्वपूर्ण होता है।
- **पहली बार मतदान करने वाले**: 2024 में पहली बार वोट देने वाले युवाओं का रुझान भी महत्वपूर्ण था। सोशल मीडिया और डिजिटल प्लेटफार्म्स के प्रभाव से इन युवाओं ने अपनी राय दी।

लोकसभा चुनाव 2024 मतदान के चरण और कितने प्रतिशत मतदान हुआ

लोकसभा चुनाव 2024 में कुल 65.79% मतदान हुआ, जो 2019 के मुकाबले 1.61% कम है। चुनाव सात चरणों में आयोजित किए गए थे, जिनकी तिथियां इस प्रकार थीं:

1. 19 अप्रैल 2024

2. 23 अप्रैल 2024
3. 29 अप्रैल 2024
4. 13 मई 2024
5. 17 मई 2024
6. 20 मई 2024
7. 1 जून 2024

लोकसभा चुनाव 2024 में चुनाव परिणाम:

भारतीय आम चुनाव 2024 में कुल 543 लोकसभा सीटों के लिए मतदान 19 अप्रैल से 1 जून 2024 तक सात चरणों में हुआ था। चुनाव परिणाम 4 जून 2024 को घोषित किए गए, जिनमें निम्नलिखित प्रमुख आंकड़े सामने आए:

पार्टीवार सीट वितरण:

- भारतीय जनता पार्टी (भा.ज.पा.): 240 सीटें
- इंडियन नेशनल कांग्रेस (इं.न.का.): 99 सीटें
- समाजवादी पार्टी (सपा): 37 सीटें
- आल इंडिया तृणमूल कांग्रेस (ए.आई.टी.सी.): 29 सीटें
- द्रविड़ मुनेत्र कड़गम (डी.एम.के.): 22 सीटें
- तेलुगु देशम पार्टी (टी.डी.पी.): 16 सीटें
- जनता दल (यूनाइटेड) (जेडी(यू)): 12 सीटें
- शिवसेना (उद्धव बालासाहेब ठाकरे) (एसएचएसयूबीटी): 9 सीटें
- नेशनलिस्ट कांग्रेस पार्टी (एनसीपी): 8 सीटें
- शिवसेना (एसएचएस): 7 सीटें

इन परिणामों के आधार पर, भारतीय जनता पार्टी (भा.ज.पा.) और उसके सहयोगी दलों ने मिलकर राष्ट्रीय जनतांत्रिक गठबंधन (एनडीए) का गठन किया, जिसने कुल 293 सीटें जीतीं। वहीं, विपक्षी गठबंधन इंडिया ने 234 सीटें हासिल कीं, जिनमें से कांग्रेस ने 99 सीटें जीतीं, जिससे पार्टी को आधिकारिक विपक्ष का दर्जा मिला। इन परिणामों के बाद, नरेंद्र मोदी ने प्रधानमंत्री के रूप में अपने तीसरे कार्यकाल की शुरुआत की, जिसमें आंध्र प्रदेश की तेलुगु देशम पार्टी और बिहार की जनता दल (यूनाइटेड) जैसे दल एनडीए के प्रमुख सहयोगी के रूप में शामिल हुए।

निष्कर्ष:

लोकसभा चुनाव 2024 ने भारतीय राजनीति में कई महत्वपूर्ण रुझानों को जन्म दिया। राष्ट्रीय सुरक्षा, धार्मिक मुद्दे, जातीय समीकरण, महिलाओं का सशक्तिकरण, और डिजिटल प्रचार ने मतदाताओं के निर्णयों को प्रभावित किया। बीजेपी की "मोदी लहर" और राम मंदिर जैसे मुद्दों ने पार्टी को एक बड़ी जीत दिलाई, जबकि विपक्षी दलों के गठबंधन में कमजोरियों और नेतृत्व संकट ने उन्हें हरा दिया। इस चुनाव में भारतीय मतदाताओं ने विभिन्न सामाजिक, आर्थिक, और राजनीतिक कारकों के आधार पर अपना मत व्यक्त किया, और यह चुनाव भारतीय राजनीति में एक महत्वपूर्ण मील का पत्थर बना।

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EFFECT OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY

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Abstract:

Working Capital Management is a managerial accounting strategy focusing on maintaining efficient levels of both components of Working Capital, Current Assets and Current Liabilities, in respect to each other. The study has been conducted with the objectives of studying the various dimensions of working capital of the company and to analyze the impact of working capital management on the profitability of the company. Ratio Analysis, Correlation and Regression Analysis were the statistical tools used to study the impact of working capital management on the profitability of the company. The result revealed that the variables QR, WCTR and ITR have positive impact whereas WCLTF has negative impact on the profitability of the company.

Keywords: ANOVA, Regression, Operational efficiency, Profitability

Introduction:

Companies have multiple ways of managing profitability and so the word mean different things to different people and most companies attempt to maximize their revenues and minimize costs, both of which are way of achieving profit objectives. A poor and inefficient working capital management leads to tying up funds in idle assets and reduces the liquidity and profitability of a company. One important way of profitability management in the company is by way of managing working capital. Essentially, the efficient management of working capital is the minimization of risk in the repayment of its sources of finance and thereby contributing to the maximization of firm's value.

It is necessary to show how the problem under study relates to previous research studies. P. C. Narware has done an empirical study of NFL (National Fertilizer Limited), a fertilizer producing company for assessing the impact of Working Capital on its profitability during the period 1990-91 to 1999-2000. The impact of Working Capital on profitability has been examined by computing co-efficient of correlation and regression between profitability ratio and Working Capital ratio. It is found out from the study that Working Capital Management has a positive impact on profitability. Pedro Juan Garcia-Teruel investigated the effect of Working Capital

Management on the profitability of a sample of small and medium-sized Spanish firms. They have collected a panel of 8,872 small to medium-sized enterprises (SMEs) covering the period from 1996 to 2002. They tested the effects of Working Capital Management on SME profitability using the panel data methodology. The results, which are robust to the presence of endogeneity, demonstrate that managers can create value by reducing their inventories and the number of days for which their accounts were outstanding. Moreover, shortening the cash conversion cycle also improved the firm's profitability. Adina Elena analyzed the efficiency of Working Capital Management of companies from Alba County.

The relation between the efficiency of the Working Capital Management and Profitability was examined using Pearson Correlation Analyses by using a sample of 20 annual financial statements of companies covering period from 2004 to 2008. The conclusion of their study was that there was a weak negative linear correlation between Working Capital Management indicators and Profitability Rates. Vivek U. Pimplpure stated in their study that Working Capital Management is very vital aspect in financial management of a business. A firm can be very profitable, but if this is not rendered into cash from operations within the same operating cycle, the firm would need to borrow to support its continued Working Capital needs. Various statistical tools such as Correlation and Multiple Regressions were used. They concluded that the increase in the profitability of the company is less than the proportion to decrease in working capital. In this context, the present study aims to study the effect of Working Capital Management on the profitability of the respondent company.

The impact of working capital management is studied on the various dimensions of working capital which arrived on the basis of various ratios such as; Current Ratio (CR), Liquid Ratio (LR), Working Capital Ratio (WTR), Inventory Turnover Ratio (ITR), Receivables Turnover Ratio (RTR), Cash Turnover Ratio (CTR), Other Current Assets Turnover Ratio (OCATR), Working Capital Long Term Funding (WCLTF), Current Assets to Total Assets Ratio (CATA). The above-mentioned ratios are used as independent variables. The Return on Capital Employed (RCE) is used as dependent variable. Statistical techniques namely correlation and regression analysis were used for the purpose of analyzing the data. Various dimensions of working capital covered by independent variables considered for the study are exhibited below.

Dimensions of Working Capital

Dimensions Covered	Independent Variable
Interrelationship of short-term assets and liabilities It helps in analyzing the ability of a company to pay off its short-term liabilities when they fall due.	Current Ratio (CR) Quick Ratio (QR)
Turnover dimensions It helps in assessing how quickly a company can convert certain of its assets into cash, or revenue. And it is employed to evaluate the efficiency with which the firm manages and utilizes its assets. Thus a turnover dimension involves a relationship between sales and assets.	Working Capital Turnover Ratio (WCTR) Inventory Turnover Ratio (ITR) Receivables Turnover Ratio (RTR) Cash Turnover Ratio (CTR) Other Current Assets Turnover Ratio (OCATR)
Funding Dimension It indicates the funds invested in the business.	Working Capital to Long Term Funds (WCLTF) Current Assets to Total Assets (CATA)

Table 1 shows the consolidated statement of various dimensions of working capital of the company. Various dimensions of working capital considered for the study during the period of the study (2016 to 2025) are CR, QR, WCTR, ITR, RTR, CTR, OCATR, WCLTF, CATA and RCE. The current ratio and quick ratio of the company is 2.559 times and 1.006 times respectively. The company has met the idle ratios during the study period. The average working capital turnover ratio is 3.708 times. Inventory turnover ratio (average value 5.91 times) shows the good rotation of inventory in the company.

In the case of Receivables turnover ratio the company improved its conversion of receivables so quickly in the years 2016, 2018, 2019 and 2020, which shows that company has received its cash from Debtors so quickly. The Receivables turnover ratio of the firm on an average is 5.796 times. The average Cash Turnover Ratio is 10.008 times which shows that company has adequate Cash to turnover in company. The Other Current Assets Turnover Ratio shows the adequate working capital and liquid position of the organization. The average Other Current Assets Turnover Ratio (15.723 times) displays the efficiency in the Working Capital of the firm. Working Capital to Long term funds does not show much variation and reveals a decreasing trend during the study period. The average Current Assets to Total Assets of the firm is 0.777 times. The average Return on Capital Employed by the firm is 13.106 percent.

Having understood the various dimensions of working capital of the company, the impact of the working capital on the profitability of the firm has been analyzed using correlation and regression analysis. The correlation analysis is performed to know if the working capital ratios are positively or negatively associated with the profitability ratio. To find the correlation between the working capital and profitability ratios, each of the working capital is correlated with Return on Capital Employed (RCE), and is given in the Table 2. Based on the result of correlation matrix shown in the Table 2, the explanatory variable for the regression analysis is chosen. As seen from the correlation matrix, out of 9 independent variables considered for the purpose of this study, only four variables, namely Quick Ratio (QR), Working Capital Turnover Ratio (WCTR), Inventory Turnover Ratio (ITR), Working Capital to Long Term Funds, shows significant relationship with Profitability of the firm.

There exists a negative relationship between QR and WCTR as the calculated P-value (.028) is less than the significant value of 5 percent. The above-mentioned table shows that there exists a positive relationship between WCTR and ITR. The p-value (0.048) is less than the significant value 5 percent which proves that there exists a strong positive relationship between WCTR and ITR. The observation from the Table 2 shows a positive relationship between ITR and RTR with WCLTF as their p-value is less than 1 percent (.032) and 5 percent (.010) significant value respectively. One independent variable (WCTR) is found to be positively related with dependent variable (Return on Capital Employed) as their p-value (.013) is less than 5 percent significant level. Hence the variables like QR, WCTR, ITR and WCLTF are the four explanatory variables considered for Regression Analysis.

A model of the relationship is hypothesized, and estimates of the parameter values are used to develop an estimated Regression equation. Various tests are then employed to determine if the model is deemed satisfactory, the estimated regression equation can be used to predict the value of the dependent variable given values for the independent variables. The proceeding section shows the Regression analysis to study the impact of Working Capital Management on the Profitability. Table 3 shows if the regression model is highly fit to explain the Impact of Working Capital variables (QR, WCTR, ITR, WCLTF) on RCE.

The above-mentioned table provides the R and R^2. The R value is .871, which represents the simple correlation and therefore indicates a high degree of correlation. The R^2 value indicates how much of the dependent variable can be explained by the independent variable, RCE. The result shows that there is a strong relationship between observed and predicted values of Return on Capital Employed (RCE) and the variation in value of Return on Capital Employed (RCE) is considerably explained by the model. Hence the model is estimated to be optimistically fit to explain the impact of Working Capital variables (QR, WCTR, ITR, WCLTF) on RCE.

To further estimate the fitness of model for the purpose of respondent company, ANOVA values were calculated and are exhibited in Table 4. The significance value of .083[a] confirms that the model is a good fit for predicting the value of the company on the basis of values of independent variables considered in the model. To further explore the relative importance of each of the independent variable considered in the model, coefficient values were calculated (Table 5).

A close study of the coefficient table above reveals that Quick Ratio (QR) ,Working Capital Turnover Ratio (WCTR) and Inventory Turnover Ratio (ITR) have positive impact whereas Working Capital to Long Term Funds (WCLTF) has negative impact on the profitability. Working Capital Turnover Ratio (WCTR) has appeared as most important predictor on positive side and Working Capital to Long Term Funds (WCLTF) has appeared as most important predictor on negative side. For the respondent company the following regression equation can be used to predict the value of dependent variable, i.e. Return on Capital Employed (RCE).

$$RCE = .675 + QR * 2.201 + WCTR * 7.238 + ITR * 1.202 - WCLTF * 25.092 + e$$

Conclusion:

The study on impact of Working Capital Management on the profitability revealed that the company is working at satisfactory finance level. The Working Capital ratio of the company has met the conventional standards over the study period, which shows that the company has a good Working Capital position. Return on Capital Employed of the firm on an average 13.106 percent which shows the better operational efficiency of the business and indicates that the investment is profitably utilized. The regression coefficient proves that Quick Ratio (QR), Working Capital Turnover Ratio (WCTR) and Inventory Turnover Ratio (ITR) have positive impact on the profitability of the firm, thus whenever the company makes some strategic decisions on Working Capital variables, the management has to keep in mind that changes made to the QR, WCTR and ITR will affect the profitability of the firm. The company's overall working capital and profitability position are satisfactory; hence the management may continue with the same style of operation related to fund allocation and working capital management which will ensure them the progressive status and future growth.

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Table 1: Consolidated statement of various dimensions of working capital

Year	CR (in times)	LR (in times)	WCTR (in times)	ITR (in times)	RTR (in times)	CTR (in times)	OCATR (in times)	WCLTF (in times)	CATA (in times)	RCE (in percent)
2016	3.95	3.95	0.19	4.20	0.00	10.52	0.00	0.44	0.12	4.17
2017	4.25	0.79	2.08	7.34	12.51	15.16	12.17	0.68	0.88	8.99
2018	3.09	0.69	2.19	3.76	2.19	15.70	22.45	0.66	0.85	3.50
2019	3.33	0.87	2.54	8.10	9.93	9.14	10.08	0.62	0.90	13.17
2020	2.60	0.66	2.55	7.80	8.81	12.41	10.55	0.66	0.88	19.59
2021	2.09	0.62	2.59	6.63	7.64	9.25	9.37	0.59	0.84	11.15
2022	1.57	0.68	2.54	6.30	5.11	0.12	0.33	0.52	0.71	21.16
2022	1.91	0.76	3.27	6.19	5.68	12.29	38.80	0.48	0.87	20.72
2024	1.71	0.61	3.23	8.44	2.89	12.97	40.09	0.49	0.85	20.74
2025	1.09	0.43	15.90	0.43	3.20	2.52	13.39	0.26	0.87	7.87
AVG	**2.559**	**1.006**	**3.708**	**5.91**	**5.796**	**10.008**	**15.723**	**0.54**	**0.777**	**13.106**

Table 2: Correlation matrix

		CR	QR	WCTR	ITR	RTR	CTR	OCATR	WCLTF	CATA	RCE
CR	Pearson Correlation	1									
	Sig. (2-tailed)										
	N	10									
QR	Pearson Correlation	.517	1								
	Sig. (2-tailed)	.126									
	N	10	10								
WCTR	Pearson Correlation	-.370	-.689*	1							
	Sig. (2-tailed)	.293	.028								
	N	10	10	10							
ITR	Pearson Correlation	.146	-.174	.636*	1						
	Sig. (2-tailed)	.688	.630	.048							
	N	10	10	10	10						
RTR	Pearson Correlation	.016	-.459	.414	.674*	1					
	Sig. (2-tailed)	.965	.182	.235	.032						
	N	10	10	10	10	10					
CTR	Pearson Correlation	.204	.135	.266	.123	-.258	1				
	Sig. (2-tailed)	.571	.710	.458	.735	.472					
	N	10	10	10	10	10	10				

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OCATR	Pearson Correlation	-.198	-.392	.600	.143	-.131	.535	1			
	Sig. (2-tailed)	.583	.262	.067	.693	.719	.111				
	N	10	10	10	10	10	10	10			
LATR	Pearson Correlation	.006	-.299	.605	.622	.495	.628	.583			
	Sig. (2-tailed)	.986	.401	.064	.055	.146	.052	.077			
	N	10	10	10	10	10	10	10			
WCLTF	Pearson Correlation	.437	-.052	.487	.767**	.498	.389	-.024	1		
	Sig. (2-tailed)	.207	.888	.154	.010	.143	.266	.947			
	N	10	10	10	10	10	10	10	10		
CATA	Pearson Correlation	.569	-.087	-.055	.403	.604	-.368	-.087	.272	1	
	Sig. (2-tailed)	.086	.811	.880	.248	.065	.295	.811	.448		
	N	10	10	10	10	10	10	10	10	10	
RCE	Pearson Correlation	-.519	-.432	.746*	.509	.243	-.052	.360	.128	-.211	1
	Sig. (2-tailed)	.124	.213	.013	.133	.498	.886	.307	.724	.558	
	N	10	10	10	10	10	10	10	10	10	10
	*. Correlation is significant at the 0.05 level (2-tailed). **.Correlation is significant at the 0.01 level (2-tailed).										

Table 3: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871[a]	.759	.566	4.62376

Table 4: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	336.579	4	84.145	3.936	.083[a]
	Residual	106.896	5	21.379		
	Total	443.475	9			

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.675	6.781		.100	.925
	QR	2.021	2.362	.300	.856	.431
	WCTR	7.238	3.215	.998	2.251	.074
	ITR	1.202	1.051	.458	1.144	.304
	WCLTF	-25.092	12.628	-.693	-1.987	.104

a. **Dependent Variable:** Return on Capital Employed
b. **Predictors: (constant), QR:** Quick Ratio, **WCTR** : Working Capital Turnover Ratio, **ITR:** Inventory Turnover Ratio, **WCLTF:** Working Capital to Long Term Funds.

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TIME MANAGEMENT IN THE MODERN ERA: A COMPREHENSIVE REVIEW

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Time management Time management is the basic requirement of every type of work. Today, with the development of science, many types of devices have been invented that can be used in the home. These devices are starting to be recognized as time and energy saving tools. Time management will be the preparation done before each moment to live each coming moment. The time we have is the capital available to us. Time management is about knowing when, how much and where not to use it.

One thing to remember when managing time is that time is a resource that is measured in human and non-human terms. The time we all have is the same, so it is valuable resource. However, the way in which each person uses the time determines whether the time they have in the day is less or more, so it is a human resource. One thing to remember when managing time is that the time is limited. Other resources can be acquired through hard work, but time is not something that everyone gets more than 24 hours a day. The first and most important goal of time management is to try to achieve the maximum amount of things by properly utilizing the time available to everyone. No one will give you extra time just because you have more work to do.

Both time and money are precious. Time is more valuable than money. If needed, money can be borrowed from others or money can be raised by taking out a loan and then repaid. But, no matter how much we need it, we cannot take time from others, nor can we give our time to others, nor can we save it for the future. Many people like to chat, waste time on unnecessary things, and spend more time than necessary on entertainment, for example, watching television programs or watching movies. This helps them reduce the stress of daily life, but it also wastes valuable work time. This wasted time means they have to expend more energy than usual to complete necessary tasks later. Before the Industrial Revolution, time was not considered important: life used to move at a slower pace, there was no rush like today, and clocks were not of much use. But, today time has gained more importance because everyone's occupation has increased but the time in the day has not been more than 24 hours. Time has become so short that it is difficult to find time. Every minute is considered important; therefore, every person has started to understand the importance of time. Watches are becoming more and more popular. Previously, only the wealthy used to wear them, but today, from school-going children to working and non-working people, everyone needs a watch.

Time Management

"Real time management is the proper balancing of time and needs." Often, too much time is spent fulfilling a need or time is wasted on unnecessary things. This is a waste of time, and to avoid this, you need to identify your needs and manage your time accordingly. Time management is not about doing everything in your daily life according to the clock. Planning your time and implementing it properly comes with practice. The time we are born with is our true wealth.

There are two types of people who have philosophies when it comes to time. The first type is the time-conscious person who coordinates time and work. They also give more importance to time and organize their daily routine accordingly. Similarly, in the second type, people do the necessary tasks first, and then the unnecessary ones. On the contrary, a different type of people come in. Since people do not value time, they do not prioritize the fact that work should be done on time, but rather give more importance to their own convenience.

Although everyone gets 24 hours a day, some people find the time in a day to be sufficient or more than necessary, while others find it insufficient, depending on how they think about time. Time management is necessary for everyone because it will help those who feel that time is abundant not to feel bored, and those who feel that time is insufficient will be able to do their work within the time available to them.

Definition of Time Management

Time management is the process of doing any work in the shortest time or doing the maximum amount of work in a given time. Today, women are feeling the need for time management because today the position of women in the family has changed and their sphere of work is not limited to the home but they also have to work outside the home for jobs and businesses. There are very few people who don't know how to spend their time. They have a lot of time but less work. Time valuation means recognizing the importance of time according to the nature and necessity of the work; in fact the value and importance of time are taken into account through time valuation. Since a housewife needs to save time and get all the work done on time she needs to include two aspects in her work: planning and preparation. From waking up in the morning to going to bed at night, everyone has to complete all tasks on time. To avoid rushing through each task, there is no other option but to plan your time. Although time is very important, many people tend to miss deadlines rather than keep them.

Most importantly, if any work is done on time even the difficult task becomes easy. Conversely, after time passes, even the easy task becomes difficult. Because we don't have enough time for it, and working in a hurry doesn't make it any better.

Time spent by housewives on various tasks

1. Preparing food for the family
2. Taking care of the house - this includes cleaning the entire house, arranging and decorating the furniture and other household items.
3. Selecting, purchasing and taking care of clothes for all members of the household.
4. Taking care of children and other family members - If there are small children in the house, they need to be properly looked after. Spending time with them. Along with the small children other members of the house also need to be taken care of; If you have an elderly or sick person you need to take extra care. The head of the household i.e. the husband, also has many expectations from his wife, and it is the responsibility of the housewife to fulfill them.
5. Financial Responsibility - Every housewife also has to keep an account of all the expenses of the house, for which she has to prepare a weekly, monthly or annual budget. While preparing this budget she also has to pay attention to savings. If a housewife does not pay attention to savings and does not manage all expenses carefully the family may remain under the burden of debt.
6. Responsibility for education - One also has to take care of the school-going children in the family and prepare them for exams.
7. Social and religious work - Along with family work, social work also has to be done, including visiting neighbors, friends, relatives, etc. The housewife is the important link between society and family. Similarly it is her responsibility to preserve and carry forward family traditions.
8. Managerial work - Apart from the above mentioned work a housewife has to take care of all the aspects of the house for which she has to manage. She also has to guide and direct the members of the house.
9. Economic Production, Distribution and Consumption - Housewives have to play an important role in the production, distribution and consumption of wealth. Women who work or are employed have to carry out more responsibilities than housewives who stay at home and it takes them more time.

10. Personal Care - While a housewife is fulfilling various responsibilities for the family she cannot forget herself, she needs to find free time to pursue her hobbies or do things that interest her. Since women today are more involved in society than before they feel the need for time and a housewife also has to leave the house for various tasks and for this she has to plan her time properly and complete the tasks accordingly.

Time demands during different stages of family life cycle

Although time management is required at every stage of the family life cycle the need for time is more in some stages and less in others. In such a case, if a housewife manages her time –

1. She can achieve a proper balance between work, rest and leisure time.
2. While planning work she can make adequate time available for the work assigned to other family members.

Taking into account the time demands at different stages of the family life cycle will help each family in formulating new plans. It will also make it possible to adjust the planning accordingly if the time demands change.

The First Stage is the Beginning Stage

This stage is one of compromise and learning new things for the newly married housewife. In this stage the husband and wife enter the household. It is all about the goals of the family, time, work methods, work habits and responsibilities of the husband and wife. The time requirement varies from person to person. The time requirement is less in this case than in the other two cases. The time requirement depends on the type of family i.e. whether it is a nuclear family or a joint family; Similarly it depends on whether a housewife is employed or not. If she is a working woman the time demands are more.

The Second Stage is the Extended Stage

During this stage the demand for time increases dramatically. Children arrive in the family. After the birth of the child a lot of attention is required therefore the woman does not get much free time because of the increasing responsibility of raising children and running the household. A lot of time is spent on the activities of feeding and drinking small children, cleaning their clothes, illness and studying them after they grow up. According to the findings of many researchers a family with children under one year of age needs an average of 21 to 25 hours more per week even after the children grow up a bit i.e. after they are two or three years old, the family has to devote a lot of time to the children; more time has to be spent on their food, clothing, and hygiene. If a housewife is a working woman, she has to work very hard to balance home, children, and work. Once the children grow up and start going to school the demand for time decreases a bit because children have become independent and have started doing their own chores. Sometimes they even help the elders with their work which is why the housewife starts getting some free time. Once the children grow up the housewife must devote time to studying them paying attention to them and guiding them.

Third Stage: Contracted Stage

In this stage the daughters are married and have gone to their in-laws and the sons have also left home for work therefore only the elderly husband and wife remain in the family. This stage is a little different from other stages in that the husband and wife have plenty of time but since both are tired, how to spend time is a big question. Also the strength is also reduced. Due to retirement, the financial side is also weakened. Due to illness, the cost of hospital and medicine increases, and due to increasing physical complaints, the enthusiasm decreases. In such a situation, if you have a hobby, spending time in it in a good way will give you mental satisfaction. For example, telling stories to young children in the sanskar class, teaching small and big arts, gardening, etc. If you do tasks that bring you joy you won't even realize how much time you're spending and such tasks don't require much energy; therefore, you won't feel tired.

Time Management Process

The time management process involves the following three steps:

1. Planning
2. Controlling
3. Evaluation

Time planning can be done in three ways.

1. Making a list of work to be done
2. Deciding time sequences or sequence of work
3. Making a time schedule

Things to keep in mind while creating a to-do list

While creating a to-do list alternate between heavy and light tasks rather than placing heavy and light tasks in a row so that the person doing the work does not get tired quickly.

Doing more than one thing at a time - for example studying while cooking, turning on the cooker on one side, making soup on the other, etc.

Using appliances in sequence at the same time - For example when using a mixer start with the dry ingredients and then grind the wet ingredients att the end. This saves time, energy and water as there is no need to clean it every time.

Determining the order of work according to the convenience of the person who needs to do the work.

Conclusion:

By managing time, a housewife will be able to easily complete household chores and tasks outside the home. She can also give time to the children. Therefore, they will remain happy and as a result their personality development will be good. The house will remain happy and contented. Managing time in this way will benefit the housewife in her life and her family.

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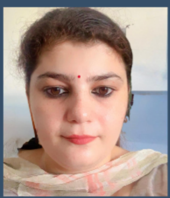

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