Business Transformation in the Digital and Algorithmic Era

Multidisciplinary Perspectives on Finance, Sustainability and Management

Editors

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Dr. Harsh Shah

President, Sigma University,
Vadodara

Today's Knowledge is Tomorrow's Leadership
Message from the President's Desk

Introducing "Business Transformation in the Digital and Algorithmic Era: Multidisciplinary Perspectives on Finance, Sustainability, and Management" fills me with great joy. This book is more than just an academic collection; It is an indication of our mutual intellectual commitment to understanding and impacting the evolving business scenario. We are in a pivotal period where data drives strategy, digital platforms reshape sectors, and algorithms impact decisions.

Today's leadership is no longer limited to boardrooms; but globally conscious, ethically sound, and technologically savvy. The multifaceted complexity of contemporary business ecosystems is reflected in the subjects covered in this volume, which range from AI-driven management and fintech advances to financial literacy, sectoral performance, HR systems, and sustainability economics. Further, the future of economies is shaped by the intersection of several fields, including artificial intelligence, financial innovation, sustainable development, and organizational behaviour. This kind of research improves our contribution to industrial practices, policy discourse, and social advancement while fortifying our intellectual base.

At Sigma University, we believe that management education apart from theoretical focus also educate decision-makers, intellectuals, and nation-builders who are capable of handling uncertainty in a responsible and transparent manner. This book demonstrates how well our Faculty of Management Studies understands, and the cooperative efforts with other universities continue to serve as a model for mutual readiness collaboration to develop the educational system in every way feasible.

I welcome the dedication and academic integrity of all chapter contributors and the authors. In addition to supporting Sigma University's mission to educate competent leaders by adhering to the rules of the higher education system, I hope that our efforts will contribute to an expanded conceptual knowledge of diverse higher education system ideas. In that regard, this publication represents a significant step.

Dr. Shreya Shah

Vice President, Sigma University, Vadodara

Advancing Excellence Together
Message from the Vice President's Desk

It is a responsibility to present this academic collection that documents the dynamic changes taking place in the fields of sustainability, technology, management, and finance. "Business Transformation in the Digital and Algorithmic Era" offers careful analysis of some of the most important issues influencing businesses and economies in the modern world. Leadership transformation is also essential, even when business transformation is unavoidable. Both are successfully boosted by this work.

Data-driven decision-making, inclusive systems, emotionally intelligent leaders, and a thorough comprehension of human behaviour are all necessary for the modern corporation. These aspects are well balanced in this publication: financial growth and ethical responsibility, technological advancement and human dedication. This study is notable for using a balanced approach. In addition to addressing micro-level realities like employee involvement, financial literacy, and community development, it looks at macroeconomic changes like fintech expansion and sectoral financial performance. The kind of holistic management approach that organizations need to support in the twenty-first century is shown in this kind of integration.

At Sigma University, we strive to create an ecosystem where research is practical, relevant, and socially conscious. Management is not merely about profit optimization; it is about building sustainable systems that empower individuals and communities. The themes of inclusion, women's empowerment, agricultural economics, and urban infrastructure in this book reaffirm our belief that management education must contribute to nation-building.

I extend my appreciation to the Faculty of Management Studies for curating a volume that is academically rigorous and socially meaningful. May this publication stimulate dialogue, encourage innovation, and inspire our students and scholars to approach leadership with empathy, integrity, and foresight.

Dr. Jigar Patel

Managing Director, Sigma University, Vadodara

Knowledge Advancement for Sustainable Business Futures: Message from the Managing Director's Desk

It is a pleasure to present this volume, Business Transformation in the Digital and Algorithmic Era, which reflects the evolving dynamics of modern business shaped by technology, data, and innovation. The book thoughtfully highlights how organizations today must balance technological advancement with responsible leadership, ethical practices, and a deep understanding of human behavior.

What makes this publication significant is its holistic perspective—addressing both macroeconomic developments such as Fintech growth and micro-level realities like Employee Engagement, Financial Literacy, and Community Empowerment. Such integration reflects the kind of balanced management thinking required in the twenty-first century.

At Sigma University, we believe that research must remain practical, socially responsible, and aligned with nation-building. The themes of Inclusion, Sustainability, and Empowerment explored in this book strongly resonate with our academic vision.

I congratulate the Faculty of Management Studies for curating this meaningful scholarly work. I hope this publication inspires thoughtful dialogue, innovative research, and responsible leadership among students and scholars.

Dr. Priyesh Gandhi

Provost (Vice Chancellor), Sigma University, Vadodara

Navigating Business Transformation in the Digital and Algorithmic Era: Message from the Vice-chancellor

It gives me great pleasure to present the foreword to the book *"Business Transformation in the Digital and Algorithmic Era: Multidisciplinary Perspectives on Finance, Sustainability, and Management."* This volume reflects the rapidly evolving landscape of modern business, where digital technologies, data-driven strategies, and sustainable practices are shaping the future of organizations and economies.

In today's Dynamic Environment, businesses are increasingly influenced by artificial intelligence, fintech innovations, and algorithmic decision-making. The chapters in this book thoughtfully address these emerging dimensions by integrating perspectives from finance, management, technology, and sustainability studies. The multidisciplinary approach adopted in this publication highlights the importance of collaborative research in understanding complex business ecosystems. Such scholarly efforts strengthen the academic foundation necessary to guide industry practices, policy development, and societal progress.

At Sigma University, Vadodara, we believe that management education must extend beyond theoretical knowledge to develop responsible leaders, critical thinkers, and innovators who can contribute meaningfully to society. This publication reflects the commitment of our academic community to research that is both intellectually rigorous and socially relevant.

I congratulate team Faculty of Commerce & Management and all contributing authors for their dedication and scholarly contribution. I am confident that this book will serve as a noticeable resource for researchers, academicians, students, and all the readers.

Priyank Patel

Registrar, Sigma University,
Vadodara

Understanding and Shaping the Future of Business in the Digital and Algorithmic Age: Message from the Registrar

It is great pleasure to present this volume, *"Business Transformation in the Digital and Algorithmic Era: Multidisciplinary Perspectives on Finance, Sustainability, and Management."* The book reflects the rapidly changing business landscape shaped by digital technologies, data-driven decision-making, and the growing importance of sustainability and ethical governance.

This multidisciplinary orientation emphasizes the value of collaborative academic inquiry in addressing the complexities of modern business ecosystems. Research initiatives like this not only enrich academic discourse but also provide meaningful insights that can influence industry practices, policymaking, and responsible organizational growth.

The contributions in this publication bring together diverse perspectives from finance, management, and technology, highlighting the value of multidisciplinary research in understanding modern business challenges. Such scholarly efforts play a significant role in strengthening academic discourse while also offering practical insights for industry and policy development.

I congratulate the team and confident that this book will serve as a valuable resource for researchers, academicians, students, and professionals interested in the evolving dynamics of business in the digital era.

Dr. Neelima Kamjula

Message from the Editorial Desk

"Knowledge is priceless and each learning material has a definite purpose. I hope it achieves the same objective. Sincere gratitude to every one of the book's direct and indirect contributors.

Thank you in advance, readers."

Dr. Neelima Kamjula, PDF, NIT-Warangal (UGCWM), Professor and Dean of Faculty of Commerce and Management, Sigma University, Vadodara, Gujarat, serves as the lead editor of Business Transformation in the Digital and Algorithmic Era: Multidisciplinary Perspectives on Finance, Sustainability, and Management.

The book features chapters covering Artificial Intelligence, FinTech, Financial Systems, Human Resource Practices, and Sustainable Development. In addition to contributions the Faculty of Commerce and Management, Sigma University, from esteemed universities across Vadodara, Gujarat, Orissa, and Karnataka, a collaborative effort also includes scholarly inputs from the University of Beira Interior, Portugal, reflecting a truly global and multidisciplinary perspective.

The book emphasizes the integration of technology, responsible management, and sustainability, demonstrating how organizations can harness innovation to achieve both strategic objectives and societal impact. This multidisciplinary volume offers insights, practical frameworks, and forward-looking perspectives for academics, practitioners, and policymakers navigating the fast-evolving digital and algorithmic era.

Dr. Arun Kumar Nishanka

Message from the Editorial Desk

Dr. Aruna Kumar Nishanka holds a Ph.D. in Economics from Berhampur University and currently serves as Assistant Professor of Economics at Narasinghpur College, Cuttack, affiliated with Utkal University, Bhubaneswar. He teaches Mathematical Economics, Macroeconomics, Financial Economics, and Public Finance.

He is a regular columnist and economic analyst, having published more than 120 articles in local and English newspapers on economic policies and their socio-economic implications. Dr. Nishanka is also a member of the Editorial Board of the Journal of Research Innovation and Management Science (JRIM) with an IIJF impact factor of 2.75. His research interests include food security, tribal banking systems, water resource management, cryptocurrency markets, medical tourism, Islamic banking, cyber security and insurance, disaster management, and MSME development. He has published several research papers and book chapters in reputed journals and edited volumes.

He is also a regular radio speaker on All India Radio, Cuttack, and has delivered talks at Sardar Vallabhbhai Patel University Community Radio (90.4 FM), Gujarat on banking and financial market topics. He has authored three books on Fundamentals of Micro and Macro Economics and is a member of the World Bamboo Congress (Peru) and the Indian Economic Association.

For the present edited book, he contributes as a co-author, offering valuable economic perspectives that enrich the multidisciplinary discussion on business transformation, finance, and sustainability in the digital era.

Subrat Kumar Nishanka

Message from the Editorial Desk

Subrat Kumar Nishanka, MBA, M.Phil. in Economics at Central University of Haryana works as Assistant Professor in Faculty of Commerce and Management, Sigma University with Eight years of teaching and two years of industry experience. He is the Research scholar of Department of Economics, Sardar Patel University, Anand, Gujarat.

He teaches undergraduate and postgraduate courses including Business Analytics, Research methodology, Micro and Macroeconomics as a core subjects. He actively involves in academic planning, assignment evaluation, Comprehensive project and student mentoring. In addition to teaching, he contributes to institutional development through NAAC and IQAC, R&D cell duties pertaining to the institute. He is committed to research-oriented teaching, academic excellence, and bridging theoretical knowledge with practical financial analysis.

He has twelve papers publication in peer reviewed and UGC-Care journals, five Edited book chapters in reputed publication, few Scopus publications under process and twenty-five national and international conferences. He has completed a minor project under the Maharaja Sayaji Rao University Baroda title "Education and culture of ChhotaUdepur" under the guidance of collector office ChhotaUdepur. For the present edited volume, he serves as co-author, contributing scholarly perspectives and research insights that enrich the multidisciplinary approach of the book.

Deep Gandhi

Where Knowledge Meets Practical Insight: Voice of Industry

Deep Gandhi holds a Master of Accounting from Holmes Institute, Melbourne, Australia. He currently works as a Team Leader at Invincible Energy, a solar system installation company based in Dandenong, Australia, which provides residential and commercial solar solutions. In his professional role, he is actively involved in accounting and financial operations within an international business environment.

With a passion for academics and knowledge sharing, he is currently in the process of publishing a book on accounting, designed specifically to support Commerce and Business Management students by strengthening their conceptual understanding and practical knowledge in the field.

In today's rapidly evolving global business environment, the conceptual and practical understanding of sustainability and AI has become essential for both students and professionals. This book aims to serve as a valuable resource for enhancing knowledge across these important domains. It also strives as a handy learning material reflecting its commitment to promoting academic development and excellence.

In this context, the successful publication of this book in association with Sigma University further reinforces the university's commitment to promoting quality education, research, and academic excellence.

- *Deep Gandhi, Team Leader, Invincible Energy, solar system installation company based in Dandenong, Australia*

Ana Filipa Roque

International Author

Ana Filipa Roque holds a Ph.D. in Management from the University of Beira Interior, Covilhã, Portugal, where her research explores the relationship between internationalization and management accounting and control systems. She holds degrees in Management and Law and practices professionally as a Solicitor. She is also a Certified Accountant (member of the Order of Certified Accountants) and an Economist (member of the Order of Economists), and currently serves as the CEO of an Accounting, Tax, and Consulting Services firm.

Alongside her professional practice, she is actively engaged in academics. She has served as an Assistant Professor at the Polytechnic Institute of Guarda and currently teaches as an Assistant Professor at the University of Beira Interior and at the Polytechnic Institute of Coimbra – ISCAC. Her teaching and research interests include Financial Accounting, Management Accounting, and Financial Management. She also serves as the President of the Portuguese Observatory of Family Businesses at ISCAC / CBS.

Through her contribution to this edited volume, she highlights the importance of integrating financial management practices with evolving digital and global business environments. Her perspective enriches the book by emphasizing the role of effective accounting and control systems in guiding sustainable and strategic business transformation.

Priyank Patel

Assistant Professor, Department of Commerce, Government First Grade College, Sagar, Shivamogga (District), Karnataka

Research Plays a Vital Role in the Professional Journey of an Educator

Research enables us to generate new knowledge, validate existing theories, and contribute original insights to our discipline. Active engagement in research brings updated, practice-oriented, and evidence-based content into the classroom, thereby enhancing the effectiveness of the teaching–learning process and bridging the gap between theory and practice.

I extend my sincere gratitude to Sigma University, Utkar University, and Narsinghpur College for providing me with the opportunity to contribute a chapter titled *"The Growth and Challenges of UPI"* under the Finance category in the edited book *"Sustainability in Business"*. This chapter presents a comprehensive overview of the growth trajectory of UPI in India, while critically examining the key challenges associated with its adoption and usage. By analyzing both opportunities and constraints, it aims to offer meaningful insights into the effectiveness of UPI as a digital payment system and to highlight areas that require policy intervention, technological enhancement, and increased user awareness. I extend my best wishes to all the contributing authors for the successful publication of this work and look forward to many more collaborative academic endeavors in the future.

Preface

In the contemporary era of rapid digitalization, globalization, and increasing environmental concerns, businesses are continuously evolving at the intersection of technology, sustainability, and management practices. The present volume, "Business Transformation in the Digital and Algorithmic Era: Multidisciplinary Perspectives on Finance, Sustainability and Management," represents a comprehensive academic effort that brings together diverse research contributions reflecting these dynamic changes.

The book offers a comprehensive exploration of the expanding role of digital financial systems, with particular emphasis on the remarkable rise of the Unified Payment Interface (UPI), its widespread adoption, and the emerging challenges related to infrastructure, security, and financial sustainability within India's digital economy. It further examines financial systems and investment avenues by analyzing the structure, evolution, and performance dynamics of mutual funds, while highlighting the importance of investor awareness, cost efficiency, and the impact of market volatility on informed decision-making.

In addition, the volume presents critical insights into sectoral performance analysis, including studies on industries such as dairy, examining their growth, operational efficiency, and contribution to employment and economic development. A significant contribution of this work lies in its exploration of human resource practices, where traditional Indian management philosophies are compared with modern HR systems, emphasizing cultural influences, performance management challenges, and the evolution of workplace practices.

The book further underscores the strategic importance of employee engagement, illustrating how effective management of human capital significantly enhances financial performance and drives organizational success. It also examines the influence

of internal and external business environments, with a focus on leadership, organizational culture, technological advancements, and competitive forces that collectively shape business strategies and outcomes.

Importantly, the volume integrates perspectives on financial performance in the post-pandemic era, offering insights into resilience, adaptability, and sustainability across industries. Collectively, the chapters reflect a strong emphasis on inclusive growth, ethical practices, and responsible management, linking technological innovation with long-term societal impact.

This multidisciplinary compilation not only strengthens academic understanding but also bridges the gap between theory and practice by providing evidence-based insights, case-driven discussions, and forward-looking perspectives. It is expected to serve as a valuable resource for academicians, researchers, students, policymakers, and industry practitioners seeking to navigate and contribute to the evolving landscape of business transformation.

The editors express their sincere gratitude to all contributors and supporting institutions whose scholarly efforts and collaboration have made this publication possible. It is hoped that this work will inspire further research, critical thinking, and meaningful action toward building sustainable, innovative, and resilient business ecosystems.

As we move forward, it is important to remember that we do not inherit the future—we create through the choices we make today in business, research, and sustainability.

Editors

Maitry Parmar

MBA – I Year student, Faculty of Commerce & Management, Sigma University, Vadodara, Gujarat

Student's Voice

As a student, it is my privilege to learn from this Book on Business Transformation in the Algorithmic Era. It brings together valuable insights on how AI and technology are reshaping the way businesses operate and make decisions.

From a learner's perspective, this book goes beyond theoretical concepts and helps in understanding real-world applications of digital transformation. It has encouraged me to think critically about the role of artificial intelligence and data-driven strategies in shaping the future of business. It serves as a meaningful resource for students who aspire to stay relevant in a rapidly changing environment. I hope it inspires fellow learners to explore, question, and actively engage in the evolving world of business and technology.

Contents

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CHAPTER 1

The Algorithmic Turn in Internationalization: How Artificial Intelligence and Platforms Reshape International Management

Ana Filipa ROQUE*

Abstract

The internationalization of firms is increasingly shaped by digital technologies, algorithmic decision-making, and human-centric principles, challenging the explanatory power of classical internationalization models. This study introduces the concept of the algorithmic turn in internationalization. It develops an integrative framework encompassing three complementary dimensions: AI-driven internationalization, platform-orchestrated internationalization, and Industry 5.0 human-centric internationalization. Adopting a mixed-methods research design, the study combines four in-depth case studies with contrasting digital profiles and a survey of 218 internationalized firms to examine how these dimensions reshape foreign market entry decisions, the configuration of management accounting and control systems, and international performance outcomes. The findings show that AI maturity

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accelerates international expansion and fosters hybrid entry modes, that platform dependence entails a trade-off between scale and managerial control, and that algorithmic and human-centric governance mechanisms enhance the reliability and adaptability of management accounting and control systems in digitally mediated international contexts. The study contributes to international management research by extending classical internationalization theories to account for algorithmic and platform-based dynamics, and by highlighting the role of governance and control architectures in enabling responsible, resilient, and human-centred digital internationalization strategies.

Keywords: Algorithmic Internationalization, Artificial Intelligence, Digital Platforms, International Management, Management Accounting and Control Systems, Human-Centric Governance

Introduction:

Classical models of internationalization, including the Uppsala Model (U-Model), the Innovation Model (I-Model), the Born Global perspective, Network Theory, the Product Life Cycle model, non-sequential models, pre-export activities, and integrated frameworks, have played a central role in explaining firms' international trajectories. These theoretical approaches have helped to elucidate critical dimensions of the internationalization process, such as gradual progression into foreign markets, the level of resource commitment, mechanisms of operational control, and the management of risk associated with international expansion (Johanson & Vahlne, 1977; Cavusgil, 1980; Oviatt & McDougall, 1994; Roque et al., 2019). However, these models were developed in informational and technological contexts that differ substantially from those prevailing today, characterized by limited access to data, low levels of digitalization, and still incipient international interconnectedness. As a result, their explanatory power has become increasingly constrained by contemporary internationalization dynamics, which are shaped by data-intensive digital environments, real-time, data-driven decision-

making, and highly interconnected global ecosystems. Over the past two decades, the acceleration of digital transformation, driven by advances in artificial intelligence (AI), the proliferation of digital platforms, and the emergence of global digital ecosystems, has profoundly altered the conditions under which firms design and implement their internationalization strategies (Verbeke & Ciravegna, 2018; Stallkamp & Schotter, 2021). In parallel, the industry 5.0 agenda promoted by the European Commission (European Commission, 2021) explicitly emphasizes human-centric, sustainable, and resilient approaches, reinforcing the need to align technological efficiency with social, ethical, and environmental values. This new Accordingly, this study pursues a dual objective. First, it seeks to develop a conceptual framework that extends classical internationalization models by integrating the three aforementioned digital and human-centric layers (AI-IM, POI, and I5-HCI). Second, it aims to empirically test this framework by examining how these layers reconfigure foreign market entry decisions, the design and use of MACS, and firms' international outcomes. To this end, the study adopts a mixed-method research design that combines multiple case studies with a survey of 218 internationalised firms, enabling the articulation of deep causal mechanisms with large-scale statistical evidence. This study makes three contributions to international management literature. First, it extends classical internationalization theories by conceptualizing the algorithmic turn in internationalization and by integrating artificial intelligence, platform-mediated dynamics, and human-centric principles into a coherent explanatory framework. Second, it advances research on international management control by highlighting the role of algorithmic governance mechanisms in reshaping management accounting and control systems (MACS) under digitally mediated internationalization. Third, it provides robust mixed-method empirical evidence, combining multiple case studies and survey data analysed through PLS-SEM, to substantiate the proposed framework and to explain how algorithmic and platform-based dynamics influence foreign market entry decisions and international outcomes.

Literature Review

Classical Models of Internationalization Classical models of internationalization continue to provide a foundational theoretical reference for understanding firms' expansion into foreign markets. Among the most influential models, the Uppsala Model (U-Model) conceptualises internationalization as a process of incremental learning, characterised by a gradual increase in international commitment as firms accumulate experiential knowledge of foreign markets (Johanson & Vahlne, 1977, 2009). Complementarily, the Innovation Model (I-Model) interprets internationalization as a sequence of progressive stages, aligned with the logic of innovation diffusion and the gradual adoption of international practices (Bilkey & Tesar, 1977; Cavusgil, 1980).

Additionally, the Product Life Cycle model associate's internationalization patterns with the dynamics of innovation, production, and product maturity across different geographical contexts, highlighting the progressive relocation of productive activities over the product life cycle (Vernon, 1966). Taken together with non-sequential models, pre-export approaches, and integrated frameworks, these contributions form a consolidated body of theory that captures multiple logics and trajectories of firm internationalization (Andersen, 1993; Rialp et al., 2005). In this study, these models are adopted as the baseline analytical layer, insofar as they synthesize the core logics underlying the internationalization process, namely, sequential versus nonsequential pathways, incremental learning versus strategic leaps, the centrality of networks and knowledge, and the relationship between innovation and the product life cycle, with direct implications for operational control, resource commitment, and international risk management (Roque et al., 2019; Verbeke & Ciravegna, 2018). This theoretical foundation thus provides the necessary reference framework for comparing, contextualizing, and interpreting contemporary internationalization trajectories. Despite their explanatory relevance, literature reveals several significant gaps. In particular, three limitations can be identified. First, there is limited integration between classical internationalization models

and emerging mechanisms associated with artificial intelligence and digital platforms, with traditional process-based models often struggling to capture digital dynamics, rapid scalability effects, and data- and algorithm-driven decision-making (Liesch & Welch, 2024; Kim, 2025). Second, there is a near absence of studies that explicitly connect these dynamics with MACS, despite growing recognition that digital internationalization requires specific configurations of control, coordination, and risk management (Merchant & Van der Stede, 2017; Justin et al., 2023; Appelbaum et al., 2020). Third, there is a scarcity of mixed-method empirical research that simultaneously examines the role of AI, digital platforms, Industry 5.0, and management control systems in internationalization processes; existing evidence remains fragmented and is predominantly conceptual or based on isolated case studies (Yang et al., 2023; Tortorella et al., 2021; Schmeisser et al., 2025). These gaps justify the need for an expanded conceptual framework that incorporates the digital and human-centric layers that characterize contemporary internationalization.

Artificial Intelligence and AI-Driven Internationalization (AI-IM) Building on this shift, recent studies have examined how artificial intelligence (AI) reshapes internationalization processes by enabling data-driven market selection, entry mode configuration, and pricing decisions, particularly in market selection, entry mode configuration, and pricing decisions (Menzies et al., 2024; Chishty et al., 2025; Csaszar et al., 2024). The use of machine learning algorithms, advanced decision-support systems, and predictive analytics enables firms to accelerate international expansion processes, increase the geographical scale of their operations, and optimize resource allocation in contexts characterized by high uncertainty and complexity (Duan et al., 2019; Ransbotham et al., 2021; Shrestha et al., 2021). Notwithstanding its benefits, the adoption of AI also introduces emerging risks. Prior research has highlighted concerns regarding algorithmic bias, the opacity of decision-making processes (Blackbox decision-making), dependence on proprietary analytical solutions, and increased vulnerabilities in cybersecurity and data governance (Aversa et al., 2021; Martín & Jones, 2023). These risks are particularly salient in

international contexts, where algorithmic decisions may have amplified effects across multiple markets and jurisdictions. In this context, this study proposes the concept of AI-Driven Internationalization (AI-IM) as an additional layer that extends classical internationalization models and reconfigures the traditional stages of the internationalization process. AI-IM operationalizes core internationalization activities, namely, the identification of international opportunities, market and segment discovery, target country selection, entry mode configuration, and the timing of international expansion, through the use of machine learning algorithms, optimization techniques, and data-driven decision-support systems. This framework fosters continuous learning and dynamic adjustment processes, transforming internationalization into an iterative cycle of real-time monitoring, prediction, and adaptation (Bresciani et al., 2021; Buckley, 2021). The integration of this algorithmic layer has several important implications for firms' internationalization trajectories. First, it is expected to increase both the speed and the scope of international expansion, as AI enables the simultaneous analysis of multiple markets and scenarios. Second, it is likely to encourage greater propensity towards hybrid entry modes, combining traditional forms such as exporting with digital platforms and small-scale foreign direct investment (micro-FDI). Third, the concentration of analytical capabilities within proprietary systems or dominant platforms may lead to increased centralization of strategic decision-making, thereby reducing the autonomy of local subsidiaries. Finally, additional risks are reinforced, including tacit collusion in algorithm-mediated environments, opacity in decision criteria, and heightened cybersecurity vulnerabilities (Huang & Rust, 2021; Watson et al., 2018). Based on this framework, the following research question is posed: RQ1. How does AI maturity, particularly data, analytical capabilities, and algorithmic governance, influence the speed, scope, and diversity of international entry modes? Anchored in the literature and the theoretical arguments developed above, the following proposition is formulated: **Proposition P1.** The higher the level of AI maturity and data-driven analytical capabilities, the faster the entry into new international markets and the more

frequently the adoption of hybrid combinations of entry modes (e.g., exporting, digital platforms, and micro-foreign direct investment).

Platform-Orchestrated Internationalization (POI) The growing centrality of digital platforms, including marketplaces, app stores, super-apps, and B2B hubs, has been structurally transforming internationalization processes, particularly for small and medium-sized enterprises (SMEs). By significantly reducing coordination and transaction costs, these platforms enable resource-constrained firms to rapidly access international markets and new customer segments, thereby alleviating traditional constraints related to capital, knowledge, and physical presence in foreign markets (Coviello et al., 2017; Brouthers et al., 2016). Through digital intermediation, SMEs can accelerate the identification of international opportunities, expand their geographic scope, and operate within global ecosystems characterized by substantially lower entry barriers than those observed in traditional internationalization models (Autio et al., 2021). However, platform-mediated internationalization is not without structural challenges. Platform governance establishes a set of formal and informal rules, including visibility algorithms, commission structures (take rates), data access policies, and performance monitoring mechanisms, that directly shape firms' speed of entry into foreign markets, international reach, and degree of strategic autonomy (Stallkamp & Schotter, 2021; Cusumano et al., 2019). While digital platforms provide immediate access to global networks and rapid scalability, they also tend to generate.

significant dependencies, potentially harming unit margins, control over end customers, and exposing firms to the risk of sudden exclusion (deplatforming). These tensions reveal a central trade-off between scale and dependence, necessitating that firms reconsider their internal governance arrangements and MACS. In contexts of platform-orchestrated internationalization, MACS play a critical role by enabling the systematic monitoring of platform specific metrics, such as take rates, customer acquisition costs, cohort analyses, market-level profitability, and the continuous assessment of risks associated

with excessive dependence on dominant platforms (Chen et al., 2019). The ability to integrate advanced analytics into MACS thus becomes a key capability for mitigating power asymmetries and supporting informed strategic decision-making. Based on this framework, the following research question is posed: RQ2. How does dependence on digital platforms affect the balance between operational control, margins, and access to data, in contrast to the gains in scale and speed associated with the internationalization process? Drawing on the reviewed literature and the theoretical arguments developed above, the following proposition is formulated: Proposition P2. Dependence on digital platforms tends to reduce firms' effective organizational control and net margins; however, these effects are partially mitigated when firms deploy MACS equipped with platform-specific analytical capabilities.

Industry 5.0 and Human-Centric Internationalization (I5-HCI)

The European Commission (2021) positions Industry 5.0 as an evolution and complement to Industry 4.0, explicitly introducing principles of human centricity, sustainability, and resilience into productive and organizational processes. Whereas Industry 4.0 primarily emphasised digitalisation, automation, and operational efficiency, Industry 5.0 broadens this logic by stressing the need for technologies oriented towards improving quality of life, preserving the dignity of work, and fostering long-term sustainable value creation (Nahavandi, 2019; Xu et al., 2018). In this context, recent initiatives, such as the Community of Practice for Industry 5.0, have sought to operationalize this paradigm through the development of roadmaps, metrics, and assessment tools that enable organizations to translate these principles into managerial practices and new performance measurement systems (European Commission, 2021; Breque et al., 2021). In this study, I5-HCI is conceptualized as an organizational moderator that interacts with the digital layers of internationalization, namely AI-IM and POI, by mitigating control risks and dysfunctions in highly technologically advanced contexts. The I5-HCI logic is grounded in a hybrid model that combines automation and artificial intelligence with

principles of human centricity, organizational resilience, and sustainability. In contrast to a purely techno-centric approach, I5-HCI promotes a balanced integration of digital efficiency with social, ethical, and organizational responsibility. The adoption of this paradigm has important implications for internationalization processes. First, it entails a reconfiguration of organizational design and competencies, simultaneously valuing advanced digital capabilities and critical human skills such as judgement, creativity, and ethical sensitivity. Second, it leads to the development of performance metrics and incentive systems aligned with ESG criteria and employee well-being, extending beyond traditional financial indicators. Third, it mitigates digital risks by implementing ethical and responsible AI governance mechanisms, thereby reducing phenomena such as automation bias and opaque algorithmic decision-making. Finally, it fosters more resilient global value chains, capable of adapting to external shocks and environments characterised by heightened international uncertainty (Liu & Xu, 2021; Demir et al., 2019).

Algorithmic Governance and the Transformation of Management Accounting and Control Systems

Recent literature has increasingly documented a structural transformation of MACS, driven by the growing incorporation of artificial intelligence and advanced analytics into organizational processes. This transformation reflects a progressive shift from predominantly reactive systems, focused on historical reporting, towards dynamic, predictive, and real-time integrated architectures (Appelbaum et al., 2017; Moll & Yigitbasioglu, 2019; Korhonen et al., 2021). Within this context, the literature identifies four main trends. First, the emergence of predictive key performance indicators (KPIs) and real-time dashboards enables managers not only to monitor current performance but also to anticipate future outcomes and simulate alternative scenarios. This evolution substantially enhances managerial agility and responsiveness, particularly in international contexts characterized by high volatility and uncertainty (Appelbaum et al., 2017; Cokins, 2021). Second, the diffusion of advanced analytics and optimization algorithms tends to reinforce the

centralization of strategic decision-making, as these capabilities become critical resources, often concentrated at headquarters or controlled through proprietary solutions. This dynamic reshapes traditional balances between central control and local autonomy, with direct implications for multinational governance and internal control systems (Quattrone, 2016; Arnaboldi et al., 2017). At this point, it is important to distinguish algorithmic governance from the broader governance logic associated with Industry 5.0. While Industry 5.0 governance (hereafter I5-HCI governance) reflects a human-centric, ethical, and sustainability-oriented normative framework, algorithmic governance refers to the concrete organizational mechanisms designed to supervise, constrain, and audit algorithmic decision-making systems. Hereafter, the term I5.0 governance refers to a human-centric, ethical, and sustainability-oriented governance logic, whereas algorithmic governance denotes only formal mechanisms for supervising and auditing algorithmic decision-making. Third, the increasing reliance on algorithms and machine learning models creates a strong need for explicit mechanisms of algorithmic governance. These mechanisms include the precise definition of roles and responsibilities, the implementation of operational guardrails, systematic model audits, and the adoption of explainability practices, aimed at mitigating risks related to algorithmic bias,

Methodology

Building on the internationalization literature and on the proposal to extend classical internationalization models developed by Roque, Alves, and Raposo (2019), this study develops an integrative conceptual framework that articulates three emerging paradigms of contemporary internationalization: AI-IM, POI, and I5-HCI. The conceptual model incorporates three core antecedent conditions: (i) AI maturity, (ii) the degree of dependence on digital platforms, and (iii) the quality of human-centric governance associated with Industry 5.0, and

relates them to key international decision-making mechanisms, namely market selection, entry mode choice, and hybridisation, and the speed and scope of international expansion. In addition, the model integrates MACS adaptability and configuration in digital environments, as well as internationalization outcomes, including international performance, digital risks, and organizational sustainability. To operationalise this framework, the study adopts a mixed-method research design structured into two interrelated phases, combining in-depth qualitative analysis with large-scale quantitative validation. The aim is to capture the mechanisms that structure internationalization mediated by artificial intelligence, digital platforms, and human-centric principles associated with Industry 5.0, as well as the role played by MACS in this process. The choice of a mixed-methods approach enables the integration of mechanistic explanations with causal testing, leveraging the complementary strengths of qualitative and quantitative methods. The study was therefore developed in two phases. Phase 1 consisted of four multiple case studies, selection rationale, relevant, technologies & interviewee profiles.

To strengthen externa validity and contextual understanding additional information was collected for each organization, including year of foundation, approximate number of employees, international presence (number of countries of operation), and degree of internal digitalisation. The latter was assessed using metrics such as the percentage of automated processes, the existence of data lakes or *machine learning* pipelines, and the level of integration between operational and analytical systems. The inclusion of these elements enabled the capture of firms' structural heterogeneity and clarified how different configurations of digital maturity shape the observed socio-technical mechanisms.

Table1. Characterization of multiple case studies

Case	Sector / Paradigm	Reason for Selection	Technologies Relevant	Interviewees	Year of Foundation	Number of Employees	Number of Countries Operated	Digitisation level (indicative)
X Tech	Saa SB2B (AI-IM)	Born-digital with intensiveuse of AI	ML; market scoring; dynamic pricing	CEO; Head of Data; Controller	2018	45	12	80% (datalake, full MLOps)
Y Market	E-Commerce (POI)	Strong reliance on marketplaces	Take rate; cohort analytics	Founder; Ops Manager; Controller	2015	28	7	65% (automation, logistics, dashboards)
W_Mfg	Industry (I5-HCI)	Transition I4.0 $\rightarrow$ I5-HCI. ESG practices	MES/IoT; well-being metrics	COO; HR. Con troller	1998	230	4	55% (partialIoT, without datalake)
Z_B2B	B2B Services (AI-IM+POI)	Strategy hybrid AI + platform	Appstore; predictive templates	CFO; International Lead; Data Lead	2010	60	10	75% (ML pipelines and automation commercial)

Qualitative data collection integrated four complementary sources: (i) semi-structured interviews, conducted using a standardized protocol aligned with the theoretical propositions and validated through member checking; (ii) analysis of internal documentation (AI policies, playbooks, KPIs); (iii) digital trace data (platform analytics, conversion funnels, cohort analyses, and latency-to entry); and (iv) direct observation of management dashboards. All materials were anonymized and processed using CAQDAS software, enabling systematic procedures of open, axial, and selective coding, as well as the maintenance of a rigorous audit trail. Data analysis followed a structured process that combined pattern matching (comparing theoretical propositions with empirical evidence), process tracing (identifying the mechanisms underlying key decision episodes), and constructing cross-case matrices linking conditions, mechanisms, and outcomes. Rival explanations, namely industry sector, organizational size, and prior international experience, were also considered and subsequently rejected or partially discounted, thereby reinforcing the explanatory relevance of digital factors in shaping the observed patterns. Following an exploratory sequential mixed-methods design, Phase 2 complemented the qualitative analysis (Phase 1) by administering a quantitative survey to internationalized firms in Portugal and other European Union countries, in which the propositions derived from the qualitative phase were operationalized as testable hypotheses. The sampling frame was constructed using business databases and professional networks, and organizations with active international operations were contacted. Sampling combined convenience and snowball techniques, resulting in 218 valid responses, a number exceeding the minimum requirements recommended for PLS-SEM estimation (Hair et al., 2022; Sarstedt et al., 2021; Kline, 2016). The questionnaire, distributed via institutional email addresses, employed seven-point Likert scales (1–7) to measure constructs derived from both the literature and the findings of Phase 1, including AI maturity, platform dependence, I5-HCI, digital MACS, speed and scope of internationalization, adoption of hybrid entry modes, and international performance. Wherever possible, previously validated scales were adapted to the study context and supplemented by author-developed items

as necessary. The operationalisation of constructs is presented in Table 2, including sample items and their respective sources.

Table2. Operationalization of the constructs

Construct	Examples of tems (Likert Scale 1–7)	Source/ Adaptation
MaturityinAI	"We have formal ML O psprocesses.""We conduct audits of AI models."	Hasan (2024); MIT/BCG (2024)
Platform Dependency	"+50% of revenue comes from platforms."The risk of deplete forming is significant."	DaRocha (2024)
Governance I 5.0	"The decisions involve human-centric and well-being criteria."	EC (2021); CoP (2024)
Digital MACS	"We use predictive KPIs." "We have real-time dashboards available."" Budgets are adaptive."	Sundström (2024)
Speed	Months between decision and go-live	
Hybrid Mode	Composite index of entry modes	Developed forth is study
International Performance	Growth, margin, ESG indicators	Developed for this study

Analytical Procedures and Quality Criteria

The statistical model was estimated using PLS-SEM, following the recommendations of Hair et al. (2022), as this technique is particularly suitable for exploratory models, reflective constructs, and medium-sized samples. The analysis was conducted in two stages. In the first stage, the measurement model was assessed by examining internal consistency reliability (Cronbach's alpha), composite reliability (CR), convergent validity (average variance extracted—AVE), and discriminant validity (Fornell–Larcker criterion). In the second stage, the structural model was estimated to test direct, indirect, and moderating relationships among the constructions. Coefficient stability was assessed through bootstrapping with 5,000 re-samples.

Results and Discussion

This section integrates evidence from Phase 1 (multiple case studies) and Phase 2 (PLS-SEM survey) to assess the empirical support for Propositions P1–P4. The first salient pattern emerged in X_Tech, a born-digital firm with high AI maturity. Its decision-making processes relied heavily on predictive market-scoring models that combine potential demand, entry costs, and competitive intensity, thereby significantly reducing uncertainty and accelerating decision cycles. These dynamics were accompanied by advanced control practices, including predictive KPIs, real-time dashboards, and adaptive budgeting, leading to hybrid entry modes that combine digital exporting, platform presence, and micro-foreign direct investment (micro-FDI). This preliminary qualitative evidence aligns with the pattern anticipated in Proposition P1, which posits that higher AI maturity is associated with greater speed and diversity in foreign market entry strategies.

Pattern of matching

Proposition	Theoretical Standard	Evidence from the Cases	Conclusion
P1	AI accelerates decisions and generates hybrid modes.	Cycles < 6 months; export + platforms + micro- FDI	Full match
P2	Platforms generate scale but reduce control.	Volatile margins; risk of deplatforming	Full match
P3	Human-centricity reduce algorithmicizes.	Audits, well-being, resilience	Strong correspondence
P4	Algorithmic governance increases reliability.	Guardrails and playbooks implemented.	Full match

Evidence-based empirical findings about AI, digital governance, and implications for MACS architecture and control

Case	Key Empirical Evidence	Implications for MACS architecture and control	Supported Propositions
X_Tech	Use of predictive AI, quick decisions, and hybrid modes.	KPIs; adaptive budgeting; algorithmic governance	P1,P4
Y _ Market	marketplace dependency; margin compression.	Post-mediation metrics ; cohort analytics	P2
W_Mfg	Human-centric practices; AI committee; ESGmetrics	KPIs forwell-being and resilience; reduction of dysfunctions.	P3
Z_B2B	AI platforms; micro-FDI;algorithmic guardrails	Hybrid control mechanisms; algorithmic integration	P1,P2, P4

Reliability and validity of the scales

Construct	Alpha	CR	AVE
Maturity in AI	0.89	0.91	0.67
Platform Dependency	0.82	0.86	0.60
I5.0 Governance	0.88	0.90	0.64
Digital MACS	0.91	0.93	0.72
International Performance	0.80	0.84	0.54

The quantitative results clearly converge with the patterns identified in Phase 1. X_Tech and Z_B2B, both characterised by high levels of AI maturity, illustrate how predictive digitalisation accelerates decision cycles and favours hybrid combinations of entry modes. Y_Market empirically exemplifies the risks associated with platform dependence, aligning with the adverse effects observed on margins and net performance in the statistical model. W_Mfg demonstrates how human-centric mechanisms reduce control dysfunctions and strengthen system credibility, as confirmed by the significant quantitative moderation effect. Finally, algorithmic governance, observed at a more advanced level in Z_B2B and X_Tech, emerged as a critical variable for the reliability of MACS and for performance in foreign markets.

Summary of Propositions (Triangulation Phase 1 + Phase 2)

Proposition	Qualitative Evidence	Quantitative Evidence	Conclusion
P1– AI increases speed and hybrid modes	X_TechandZ_ B2B	β IA ⟶ Speed= 0.41; β IA ⟶ Hybrid Mode= 0.33	Confirmed
P2– Platforms accelerate but compress margins	Y_Market	β Platform ⟶ Amplitude= 0.38; β Platform ⟶ Performance=– 0.27	Confirmed
P3– I5.0 Governance moderates the impact of AI.	W_Mfg	β I5×IA ⟶ MACS= 0.29	Confirmed
P4– Algorithmic governance reduces risks	X_TechandZ_ B2B	β Algorithmic governance⟶MACS= 0.36	Confirmed

These findings contribute to the ongoing debate on algorithmic governance, highlighting that MACS are not merely control instruments but socio-technical architectures that actively shape international strategies.

Conclusions

This study builds on a critical review of classical internationalization models to propose an updated conceptual framework that integrates three emerging paradigms of contemporary internationalization: AI-IM, POI, and I5-HCI. Using a mixed-methods research design that combined multiple case studies with a quantitative survey of 218 internationalised firms, the study examined how these digital and human-centric layers reconfigure foreign market entry decisions, the architecture of MACS, and organizational outcomes in terms of performance, risk, and sustainability. The results empirically confirm all four propositions and point to three central conclusions. First, AI maturity significantly accelerates internationalization and broadens the range of entry modes, fostering hybrid strategies that combine digital exporting, platform participation, and micro-foreign direct investment. These findings demonstrate that AI not only reduces uncertainty

in market selection but also structurally alters the traditional sequential logic of internationalization. Second, dependence on digital platforms emerges as an ambivalent mechanism. While it facilitates rapid gains in scale and geographical reach, it entails a clear trade-off between growth, organizational control, and net margins. The empirical evidence indicates that this trade-off is only partially mitigated when firms deploy specialised MACS that monitor take rates, customer acquisition costs, cohort analytics, and deplatforming risks. Third, the findings reveal that human-centric governance and algorithmic governance constitute critical conditions for the reliability and legitimacy of MACS in technology-intensive internationalization contexts. The Industry 5.0 logic, by emphasising well-being, ethics, sustainability, and resilience, acts as an organizational moderator that reduces dysfunctions associated with excessive automation, such as automation bias and dashboard-induced myopia, while strengthening alignment with ESG criteria and stakeholder expectations. From a theoretical perspective, this study offers three main contributions. First, it reconciles classical internationalization models with the digital and human-centric dynamics of the contemporary economy, proposing a unifying framework that explains hybrid trajectories and algorithmically and platform-orchestrated internationalization processes. Second, it deepens the dialogue between the internationalization and management accounting literatures by demonstrating that MACS are not merely reactive control tools, but socio-technical architectures that actively shape strategic decisions regarding entry modes, speed, and international configuration.

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CHAPTER 2

Growth and Challenges of Unified Payment Interface

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Abstract

The Unified Payment Interface(UPI) is a simple smartphone Interface app which is emerged as the most transformative digital payment innovations, enabling seamless, realtime fund transfers without any bank details. It is launched by the National Payment Corporation of India (NPCI) in the year 2016. It shows the massive growth not only in value of the transactions but also the volume of transactions over a period of 9 years due its enriched features like convenience, interoperability, security and user friendly interface.. The study focus on the understanding the theroetical concept of UPI, it highlights the growth and milestone of UPI and examine the major challenges faced by the user while using it. Even though its success at the peak level it face the issues relating the the technical failure, security, digital literacy gap, revenue sustainability and regulatory limitations. The paper utilised the secondary data from the NPCI and RBI websites and other published sources. The finding emphasis that there is need for the rebust infrastucture, enhanced fraud preventions and greater digital awareness to ensure the UPI's continue growth and contribution to the digital economy of India.

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Keywords: *UPI, Digital Payment, NPCI, UPI Challenges, Transaction Growth.*

Introduction

In the year 2016 National Payment Corporation of India lauched Unified Payment Interface(UPI) which changed the scenario of the digital payment ecosystem by providing the instant, seamless and interoperable financial transactions through the mobile applications. Over the past few years UPI become one of the most preferable mode of payment as it allows the user to integrate multiple bank accounts to a single platform. Efficiency of UPI can be measure through the speed, reliability, accessibility and security. User experience can be judge based on the factors like ease of use, convenient, benefits, rewards, grivances and redressal mechanism which influence the user towards the usage of UPI apps.

Secured, quickest and interoperable features of UPI has transformed the digital payment landscape in India. There is a rapid growth in the usage of UPI platform in rural and urban areas of the country.

Year	No. of Banks	Volume (in mn.)	Value (in cr.)
March 2017	44	6.37	2,425.14
March 2018	91	178.05	24,172.60
March 2019	142	799.54	1,33,460.72
March 2020	148	1,246.84	2,06,462.31
March 2021	216	2,731.68	5,04,886.44
March 2022	314	5,405.65	9,60,581.66
March 2023	399	8,685.30	14,10,443.01
March 2024	572	13,440.00	19,78,353.23
March 2025	661	18,301.51	24,77,221.61

Source: https://www.npci.org.in/product/upi/product-statistics

The above table shows that there is a significant growth in the Unified Payment Interface over a period of 9 years from March 2017 to March 2025. This growth indicates that there is increase in the adoption of these UPI by the users and banks. The number of banks involved in the UPI was 44 in the year March 2017 it raised to 661 member banks in the year March 2025. This indicates that there is wide acceptance of UPI across

the banking sector. There is a massive growth in the volume of UPI transactions from 6.37 million in the year March 2017 to 18,301.51 million in the year March 2025. There is not only increase in the volume of transactions of UPI but also the value of transactions are also increased from 2,425.14 crore in March 2017 to 24,77,221.61 crores in the year March 2025

Inspite of wide acceptance and usage of UPI still there is a lot challenges are facing in technical &operational area, Fraud and Security issues, business and financial area, Societal and Demographic issues, Regulatory and Policy issues. The study focused on the Growth and Challeges of UPI.

Review of Literature

P**. Satishkumar (2018) " A Study on growth of UPI in Digital empowerment."** In this research article researcher highlighted that Unified Payment Interface, a new age payment system introduced in India by NPCI. It is a mobile centric real time interbank payment system to transform digital payment in India. The main objective this paper was to analyse the growth and trend of UPI transactions and also to compare the UPI system with other payment system. The study completely based on secondary data collected from NPCI and RBI websites. For analysing the data descriptive statistics has been used. The conclusion of this research paper was UPI apps are very simple and easy to used compared to other digital payment system. And also these UPI are having more incremental growth in the future.

Mahesh A and Ganesh Bhat (2021) studied about the "Digital Payment Services in India- A case study of Unified Payment Interface." The researcher focused on UPI Growth system and assessed the UPI position in digital payment system also studied on progression of UPI in retail digital payments and finally did the SWOT analysis about UPI system. The conclusion of the paper was Users are benefited from the convenience and speed of digital transactions through UPI. Because it is easier to access via smartphone than other digital payment options, it is gaining in popularity, especially in the retail payment industry

Jayaram Narayan (2022) " A study on growth of UPI apps in India after Covid outbreaks." The major objective of this paper was to study the growth of UPI due to covid pandemic and also

to know the challenges faced by UPI. The study completely based on secondary data. The conclusion of the paper was in India the growth of UPI after covid outbreak is contributing to digitalisation and payment system recorded 2 billion transactions in a month.

Satindu Bal Gupta, Rajkumar Yadav and Shivani (2020) " A study of growing popularity of payment apps in India." In this research paper researcher made an attempt to study the reasons for increasing the popularity of UPI payments apps among the respondents. The researcher focused on three popular apps such as Google pay, PhonePay and Paytm. Among all these three apps Google pay is gaining a lot of popularity among the respondents because of its specified features.

Objectives

1. To understand the theoretical concept of Unified Payment interface.
2. To analyse the growth of Unified Payment Interface.
3. To examine the Challenges faced while using the Unified Payment Interface.
4. To provide some valuable suggestions to overcome the challenges of Unified Payment Interface.

Methodology

The present study is based on the Descriptive and Analytical Research Methodology which focuses on the analysing the growth and challenges of UPI. For the study data has been gathered from secondary sources from NPCI and RBI official websites and from various published sources.

Theoretical Framework of UPI

UPI system was developed by National Payment Corporation of India. It facilitate the customer real time transfer of money between two bank accounts using the smartphone. UPI is the single mobile app which allows the users to send or receive the moneyand pay all the kinds of bills instantly.

In UPI mode of payment no need to enter the bank information for every transactions easily users can make the payment

through QR codes, Virtual Payment Addresses(VPAs) or with registered UPI mobile numbers.

Features of UPI

Introduction of UPI has transferred the payment landscape in India by taking it to the cash less economy. Now a days UPI become very popular and user friendly because of its unique and wide range of features. Some of the key features are as follows:

1. **Instant Transfer:** UPI allows the user 24/7 fast transfer of money to any bank account at any time.
2. **Single app:** Users can use only one single UPI app and can add mutiple bank accounts and easily process their financial transactions.
3. **Multiple Payment Methods:** Users of UPI can send the money using the mobile number, Virtual Payment Address (VPA), QR code and even we can directly transfer from one bank account to another by entering the bank details.
4. **Recurring payment:** In UPI apps user can set up the autopay for recurring payments like utility bills.
5. **Security:** Every transactions on UPI are secured through two factor authentication which gives a high level of security to the users in their financial transactions

UPI system involved few simple steps in order to process the financial transactions.

Step 1- User Registration

In the first step user should download UPI apps from playstore in their smartphones. After the installation user need to add their single or multiple bank account to create unique Virtual Payment Address which ultimately serve as UPI Id.

Step 2- Initiating a transactions

When a user want to process the payment they can do by using the payee's VPA, scanning QR code or entering the UPI Ids.

Step 3- Authentication

User of UPI must enter their UPI pin which had created during the registration. This steps authorises and approve the transactions.

Step 4- Transaction Processing

Once the UPI Pin has been entered the UPI app send the payment request to the server. The server verifies the request and process it with the sender bank and recipient bank.

Step 5- Confirmation

Once the bank confirm the transactions the user receive the instant notification about the success or failure of the payment.

Step 6- Settlement

In UPI system within a short span of time funds are settled between the banks and immediately the transactions are reflected in their accounts

In India UPI had widely accepted due to its efficient, secure and convenient method.

Milestones of UPI

- National Payment Corporation of India (NPCI) lauched the Unified Payment Interface (UPI) in the year 2016 in association with the Reserve Bank of India and Indian Bank Association in order to facilitate the real time transfer of money betweent two bank accoounts using a smartphone.
- In the year 2017 first UPI transactions was initiated as banks and merchant have started accepting the new payment system.
- In the year 2018 UPI started gaining its popularity amount the Users which lead to the significant growth in the value and volume of UPI transactions.
- During the year 2019 NPCI announced UPI 2.0 which enhanced the features of UPI. It improved the security measures, one time mandate and focused on preventing the frauds.
- In the year 2020 in order to make the payment of utility bills Bharat Bill Payment System was integrated with UPI 2.0 Covid 19 pandemic forced the people to adopt the UPI apps for their digitial payments.
- During the year 2021 NPCI enhanced the security of UPI transactions by incoporating biometric authentication such as finger print, scan. Here to enhance the convenience and

flexibility in transactions UPI 2.0 initiated the scheduled payment system.

- In 2022 UPI allows the aadhar integration which permit the user for seamless financial transactions by linking aadhar number to the bank account. In order to facilitate the low value transactions NPCI launched the UPI lite to deal the small amount of transactions.
- In the year 2023 we could find the expansion of UPI transactions the different section including the commere and retail. To enhance the security level two factor authentication such as OTP was initiated.
- In the year 2024 UPI reset the maximum limit for the transaction upto Rs. 1,00,000 The UPI ATM was launched to allow the user to withdraw the cash from ATM using the QR codes. Recently UPI introduced the contactless payment. UPI lite has been used for low value payment without using the internet

Challeges Faced by UPI

As UPI secured the massive success in its journey, but still a lot of challenges are crucial which are hurdles for UPI to continue its growth and maintain their user trust. They are broadly categorised into the following areas:

1. Technical and Operational Challenges

- Lot of time there is a common problem in UPI Platform is transaction failure and server issues to the many reasons like overload of server during the peak hours of a day, poor internet connectivity from user end, sometime tecchnical issues in the bank's or problems in backend systems of UPI apps.
- When transaction fails usually user account is debtied and it takes some hours or even day to refund their amount which creates the frustrations among the users.
- The volume of UPI transactions has grown drastically. The infrastucture of banks and NPCI must upgrade themselves to handle this scale of transactions without compromising with the speed and reliability

- As UPI is interoperabiltiy some banks have specific issues with the certain UPI apps which may leads to transactions failures.

2. Security and Fraud

- Cybersecurity is the another biggest challeng in UPI platform. Scams like phishing, where the criminals send some fake links to force the users to share their UPI PIN or other sensitive financial informations.
- There is the lack of digital literacy among some users which makes the work of Fraudsters easy to expoit the user sensitive informations.
- The NPCI has a very slow dispute redressal mechanism to resolve the fradulent issues.

3. Business and Financial Challenges

- As the UPI transactions are at a free cost or with very low transaction cost its very difficult for banks and Payment Service Providers to generate the revenue and to invest money in improving the UPI infrastucture and User experience.
- The main aimof NPCI is to regulate the market and ensure the fair competiton but actual in UPI eco system only few large players like Phonepe and Google pay have significant market share.
- There is a transaction limitations in the UPI Platform which is the barrier for high value payment to those businesses and individuals who wants to make a large payment of money.

4. Societal and Demographic Challenges

- Due to poor internet connectivity, lack of smarphone usage and low digital literacy is the greatest challenge faced by UPI in rural and semi-urban areas.
- Some portion of the populations are have cash centric behaviour as still they believe and prefer of using cash for their daily transactions

5. Regulatory and Policy Challenges

- UPI platform coming with the new features like credit on UPI and cross border payments but there is lack of

regulatory framework to manage these risks and also to ensure the protection to the consumers.

- As the volume of digital transactions are increasing on the UPI platform the issue of data privacy and protection of user informations are also becoming challenging.

Suggestions to Overcome the Challenges of UPI

- UPI should focus on its Grievance Redressal Mechanism by implimenting the Fast Track Unified Dispute and Issue Resolution(UDIR). The Mechansim should provide the 24/7 helpline services in the languages to build the trust among the users.
- Government should take some intitiative on arranging the digital literacy campaigns all over the country. It should expand and stabilize the high speed internet and power infrastructure in the rual and semi urban areas of the country.
- There is a need to develop the balanced and sustainable revenue model for the banks and Payment Service Providers (PSPs).
- It is essential to take some advanced security measures such as biometric authentication and multi factor authentication in order to strengthen the cybersecurity.
- UPI should give some simple and clarity in the regulatory enviroment to cover the emerging services like credit on UPI and Cross border transactions.

Conclusion

The Unified Payment Interface (UPI) has transformed India's digital payment ecosystem by offering a fast, secure, and highly convenient platform for real-time transactions. Its rapid growth from limited adoption in 2016 to becoming the most widely used payment mode by 2025 highlights its scalability, user-friendliness, and strong technological foundation. Despite this progress, UPI continues to face challenges such as technical issues, transaction failures, fraud risks, limited digital literacy, and regulatory constraints. Addressing these concerns through stronger infrastructure, enhanced security measures, improved customer support, and inclusive digital awareness programmes

will further strengthen UPI's reliability and ensure its sustainable growth. Overall, UPI remains a revolutionary step toward a fully digital, cashless economy in India.

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CHAPTER 3

Pre and Post Glocalization of India: An Empirical Analysis

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Globalisation is an interplay of market, state and technology.

Globalisation is a heroic process or a sinister process, depending on which side of the debate one stands.

Abstract:

It happened earlier but the rapid pace of globalization happened after 1870. The first stage of globalization happened from 1870 to 1914, second from 1945 -1980 and third phase globalization has been continuing since 1980. Globalisation has been instrumental in raising living standards and has helped lift large parts of the world population out of poverty. Trade openness has greatly enhanced productivity and vastly improved consumption opportunities. Financial openness, in addition to supporting international trade, allows greater scope for diversifying risks and earning higher returns. It also makes funding more readily available and facilitates the transfer of knowledge and know-how across countries. Globalisation has also posed well-known challenges. Gains from trade have not been evenly distributed at the national level. The integration among the developed countries is much better than the integration between developing countries. There is also asymmetry to the growth of developed economies and developing economies. When

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developed economy and some select Asian economies have gained, the entire[1] African continent has been left behind. Domestic policies have not always succeeded in addressing the concerns of those left behind. The requisite structural adjustment has taken longer, and been less complete, than expected. Furthermore, unless properly managed, financial globalization can contribute to the risk of financial instability, much like domestic financial liberalization has. And, not least through financial instability, it can increase inequality. But globalization has also often been made a scapegoat. For instance, there is ample evidence that globalization has not been responsible for the majority of the concurrent increase in within-country income inequality.

The paper highlight the concept of globalization from a historical perspective. Working of the multilateral trade institutions and areas of concern for the developing economies in the world are also highlighted in this chapter. A special focus on world trade organization(WTO) has been given. Focus has been provided on Impact of global trade on economy and society has also been incorporated. Lastly, financial instability has also been briefly explained in this chapter.

Key Concepts for Review

Globalisation, International trade, international capital, Voyages of discovery, Industrial revolution, Bretton wood system, world trade organization, inequality, financial instability.

Introduction

The phenomenon of globalization is largely understood in terms of its implication on economies of the world. However, it also has an implication on polities, societies and cultures too. Politics has been integrally connected with the process of globalization. Similarly, some scholars describe globalization as "global village" or" glocalization". Technology has been the driver of the globalization to make the world flat[1]. Globalisation need not necessarily have a deleterious effect on the environment. But the manifestations of globalisation like expansion and intensification of air traffic, car, truck and sea transport, waste and increased

1 The World Is Flat: A Brief History of the Twenty-first Century is an international best-selling book by Thomas L. Friedman that analyzes globalization, primarily in the early 21st century. The title is a metaphor for viewing the world as a level playing field in terms of commerce, wherein all competitors, except for labor, have an equal opportunity.

consumption of water and fossil energy have profound impacts on the natural environment and there is a demand for changing the current model of globalization. Therefore, globalization is different thing to different people.

Globalisation is defined as a process of economic transaction across national boundaries through international trade, international labour migration and international capital flow. The process is extended to flow of technology, information, ideas. The process is associated with increasing economic openness, growing economic interdependence, and deepening economic integration among countries in the world economy. Economic integration has both demand as well as supply side. On demand side, there is an integration of markets for goods, services, technology, financial asset and money. On supply side, there is an integration of production (horizontal and vertical).

GATT vs WTO

GATT had mainly dealt with trade in goods, the WTO and its agreements now cover trade in services, and in traded inventions, creations and designs (intellectual property). WTO includes GATT, GATS and TRIPS.

Table No 11.1: Journey of Multilateral trade Agreements from GATT to WTO

Year	Place/name	Subjects covered	Countries
1947	Geneva	Tariffs	23
1949	Annecy	Tariffs	13
1951	Torquay	Tariffs	38
1956	Geneva	Tariffs	26
1960-1961	Geneva Dillon Round	Tariffs	26
1964-1967	Geneva Kennedy Round	Tariffs and anti-dumping measures	62
1973-1979	Geneva Tokyo Round	Tariffs, non-tariff measures, "framework" agreements	102

1986-1994	Geneva Uruguay Round	Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc	123

Source: https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact4_e.htm

Principles of WTO

- **Most-favoured-nation (MFN): Treating other people equally:** MFN means that every time a country lowers a trade barrier or opens up a market, it has to do so for the same goods or services from all its trading partners — whether rich or poor, weak or strong Countries cannot normally discriminate between their trading partners. The MFN is applicable to GATT, GATS and TRIPS with some exceptions.[2]
- **National treatment: Treating foreigners and locals equally:** Imported and locally-produced goods, services and item of intellectual property should be treated equally. National treatment only applies once a product, service or item of intellectual property has entered the market.
- **Freer trade: gradually, through negotiation:** The WTO agreements allow countries to Lowering tariff barriers (e.g custom duty, and non-tariff barriers (e.g import quota) gradually, through "progressive liberalization". Developing countries are usually given longer time period to fulfil their obligations.
- **Predictability: through binding and transparency:** In the WTO, when countries agree to open their markets for goods or services, they "bind" their commitments. For goods, these bindings amount to ceilings on customs tariff rates. Sometimes countries tax imports at rates that are lower than

2 For example, countries can set up a free trade agreement that applies only to goods traded within the group — discriminating against goods from outside. Or they can give developing countries special access to their markets. Or a country can raise barriers against products that are considered to be traded unfairly from specific countries. And in services, countries are allowed, in limited circumstances, to discriminate. But the agreements only permit these exceptions under strict conditions

the bound rates. Frequently this is the case in developing countries. In developed countries the rates actually charged and the bound rates tend to be the same.

Table No. 11.2: Percentages of tariffs bound before and after the 1986-94 talks

Countries	Before	After
Developed countries	78	99
Developing countries	21	73
Transition countries	73	98

Source: WTO

- **Promoting fair competition:** The rules on non-discrimination — MFN and national treatment — are designed to secure fair conditions of trade. So too are those on dumping (exporting at below cost to gain market share) and subsidies.
- **Encouraging development and economic reform:** The WTO has been encouraging the member developing countries to have a development strategies with a structural reform programme.

Stages of Dispute Settlement Process at WTO

Time	Particular
60 days	Consultations, mediation, etc
45 days	Panel[3] set up and panellists appointed
6 months	Final panel report to parties
3 weeks	Final panel report to WTO members
60 days	Dispute Settlement Body adopts report (if no appeal)
Total = 1 year	(without appeal)
60-90 days	Appeals report
30 days	Dispute Settlement Body adopts appeals report
Total = 1y 3m	(with appeal)

Source: World Trade Organisation

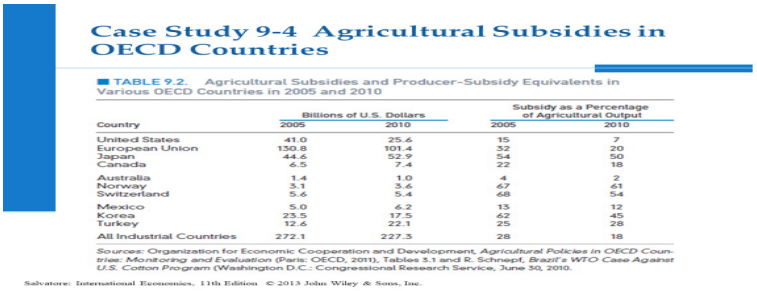
3 Panels are like tribunals. But unlike in a normal tribunal, the panellists are usually chosen in consultation with the countries in dispute. Only if the two sides cannot agree does the WTO director-general appoint them. Panels consist of three (possibly five) experts from different countries who examine the evidence and decide who is right and who is wrong. The panel's report is passed to the Dispute Settlement Body, which can only reject the report by consensus

An Assessment of current phase of Globalization:

As mentioned earlier, setting up of WTO has been a milestone of the current phase of globalization. The provision of 'one member, one vote' distinguishes WTO from the Bretton woods institutions (IMF and WB). The dispute settlement mechanism of WTO makes it more democratic than other institutions. It has also contributed to opening up the markets in some of the highly 'protected' countries, e g, South Korea, Japan, EEC.

As of 2019, the world trade volumes are roughly 41 times the level recorded in the early days of the GATT (4116% growth from 1950 to 2019). World trade values today have ballooned by over 304 times from 1950 levels. Merchandise volume has been increasing since 1995. As of 2019, on average, world merchandise trade volume and value have expanded 4.2% and 5.5% respectively since 1995, when the WTO was established. In 2019, the world's applied tariffs stood at an average of 9%. This is 19% lower than the average tariff level of 11.1% recorded in 1996, one year into the establishment of the WTO. One estimate is that the 1947 average tariff rate among industrial countries, before the first post-war tariff reductions, ranged between 20% and 30%). Another estimate puts the average tariff among key GATT participants at 22%(World Trade Statistics)

But in recent times, there has been a pervasiveness of non-tariff barriers like subsidy in international trade. For example, the subsidy offered in agriculture is still very high in all industrialised countries although the subsidy support to agriculture has been reduced slowly. For example, the share of subsidy of agricultural output in USA was reduced from 15 percent in 2005 to 7 percent in 2010.Similarly for EU, the share has been reduced from 32 percent in 2005 to 20 percent in 2010.But as These kind of reduction will provide a better playing fields to the developing countries. But many countries still maintain a very high rate of subsidy. For example, the share of subsidy to agricultural output was 61 percent by Norway,54 percent by Switzerland, 50 percent by Japan and 45 percent by Korea in 2010.



Case Study 9-4 Agricultural Subsidies in OECD Countries

■ TABLE 9.2. Agricultural Subsidies and Producer-Subsidy Equivalents in Various OECD Countries in 2005 and 2010

Country	Billions of U.S. Dollars		Subsidy as a Percentage of Agricultural Output	
	2005	2010	2005	2010
United States	41.0	25.6	15	7
European Union	130.8	101.4	32	20
Japan	44.4	52.9	54	50
Canada	6.5	7.4	22	18
Australia	1.4	1.0	4	2
Norway	3.1	3.6	67	61
Switzerland	5.6	5.4	68	54
Mexico	5.0	6.2	13	12
Korea	23.5	17.5	62	45
Turkey	12.6	22.1	25	28
All Industrial Countries	272.1	227.3	28	18

Sources: Organization for Economic Cooperation and Development, *Agricultural Policies in OECD Countries: Monitoring and Evaluation* (Paris: OECD, 2011), Tables 3.1 and R. Schnepf, *Brazil's WTO Case Against U.S. Cotton Program* (Washington D.C.: Congressional Research Service, June 30, 2010.

Salvatore: International Economics, 11th Edition © 2013 John Wiley & Sons, Inc.

Source: Salvatore (2013)

Another emerging barrier for the developing and least developed countries is trade finance gap.(see the Box 11.4)

Increase in International Migration

As per International Migration Report 2019, the scale of international migration increase in line with recent trends. The number of international migrants is estimated to be almost 272 million globally, with nearly two-thirds being labour migrants. This figure remains a very small percentage of the world's population (at 3.5%), meaning that the vast majority of people globally (96.5%) are estimated to be residing in the country in which they were born. However, the estimated number and proportion of international migrants already surpasses some projections made for the year 2050, which were in the order of 2.6 per cent or 230 million. As per this report, the international migration is shaped by economic, geographic, demographic and other factors resulting in distinct migration patterns, such as migration "corridors" developed over many years. The largest corridors tend to be from developing countries to larger economies such as those of the United States, France, the Russian Federation, the United Arab Emirates and Saudi Arabia. This pattern is likely to remain the same for many years into the future, especially as populations in some developing subregions and countries are projected to increase in coming decades.

Failure of Doha Round

At the start of the Doha round[4], American and European officials committed to producing a trade agreement that would promote

4 Doha Development Agenda in 2001

development in poorer countries without asking them to reduce import barriers to the same extent as industrialized nations. But as developing countries, particularly China, began exporting far more than they were importing, wealthier countries started demanding that they also lower import barriers and cut subsidies to their farmers. Not surprisingly, China and India refused, insisting on sticking with the original principles.

The current phase of globalisation has got tremendous setback in recent times. The violent protests seen in Seattle during the WTO meeting in December were the first sign of the opposition to the current model of globalisation. Subsequently, the global financial crisis 2007-08 and the recent COVID-19 pandemic have almost puta break to the globalisation process. The most latest event of exit of UK from EU has rather expedited the disintegration of economies rather integration of economies in Europe. During the current phase of globalization, the world has seen highly volatility of movements of capital. Among others, global financial crisis 2007-08 seems to have significant impact on developed economies including USA and developing countries around the world. This crisis has put a question mark on the current model of globalization process especially in terms of financial integration.

After the global financial crisis, the covid-19 has totally put a break on the current model of globalisation. Especially, the developing countries have been more dependent on the FDI and due to lockdown measures taken by the governments worldwide, these countries will be suffering the most.

Economics and Politics of multilateral agreements

At present, three important institutions are influencing the international trade, finance and investment. They are Breton wood twin institutions- International monetary Fund, World Bank and World Trade Organisation (WTO). To understand multilateral agreements, we can find two types of scenario-agreements among the members in WTO and the other one is free trade area/ Preferential trade area. The nature and issues of multilateral agreements can be understood by understanding the economic and legal rational with political contexts. This section has provided the economic rationale of multilateral agreements followed by politics of multilateral agreements.

Economic rationale for multilateral agreements

Multilateral agreements are commercial treaties between three or more nations. Multilateralism refers to GATT/ WTO system as well as trade negotiations among members of WTO as a group.

A major challenge facing the multilateral trading system like WTO is the proliferation of regional and bilateral trade agreements over the last 25 years. For example, the number of Regional trade agreements (RTAs) in 1990 was 90 and has been increased to 306 in 2020. Actually RTAs are allowed under WTO like formation of customs union and free trade area in goods and services, preferential trade arrangements in goods among developing country members. It is also required by the members to inform WTO about the RTA, economic integration etc.

There are different **theoretical arguments** forwarded for multilateral agreements and RTAs.

- Theories of Free trade is cited as a justification for the multilateral agreements.
- Trade creation and trade diversion has been cited as theoretical justification for RTAs. In the box, **one theoretical justification for customs union** has been provided.

However, even at the theoretical plane, **several caveats** must be introduced.

- Border prices are not firm guides to demarcate comparative advantages,
- There is a difference between static comparative advantages and the dynamic comparative advantages,
- Competition can also be wasteful especially when economies of scale may favour oligopolies.

Even while granting all these limitations, free trade comes out as a superior alternative to autarky[5].

Similarly, a strong case can be built for free movement of capital and labour. Free movement of capital is favoured if the objective is to have infusion of outside capital with superior technology in the capital starved countries. But, generating technologies has now become a capital-intensive, long gestating, proposition

4 Doha Development Agenda in 2001

5 Autarky is the term used to describe a country or economy that operates independently

where the poor countries are handicapped. Again, the utility of infusing capital will depend on the investment portfolio.

Similarly, free movement of labour has all the advantages, at least in the long run, for the 'importing' as well as 'exporting' countries. But the developed countries resist free flow of labour on cultural ground. In recent times, while the developed countries selectively encourage the immigration of skilled persons like software engineers, they put hurdles in the immigration of unskilled labour.

Finally, when a WTO Member enters into a regional trade agreement (RTA) through which it grants more favorable conditions than for trade with other WTO Members, then it **departs from the guiding principle of non-discrimination** defined in the GATT, and the GATS.

Politics of Multilateral Agreements:

The multilateral trading system has drawn inspirations from economist and shaped by primarily by lawyers and it must operate within the limits that the politicians set. When political scientists favour a zero-sum game[6], legal theorist favour juridical equality and justice, economists favour co-operation and positive-sum game[7].

Different arguments are forwarded by the scholars with respect to the politics of multilateral agreements like WTO. Few important arguments are mentioned below:

- **Political Trilemma**: The politics of multilateral agreements can be understood by "Political trilemma". The three nodes of this trilemma are international economic integration, the nation-state, and mass politics. In the words of Deepak Nayyar, "nation-state" is used to refer to territorial-jurisdictional entities with independent powers of making and administering the law. "Mass politics" to refer to political systems where: a) the franchise is unrestricted; b) there is a high degree of political mobilization; and c) political institutions are responsive to mobilized groups. In this trilemma, we can have at most two of these three things.

6 A zero-sum game is one in which no wealth is created or destroyed i.e one country member gains at the cost of another country

7 Non-zero sum game is one in which one country's gain (or loss) does not necessarily result in the other country's loss (or gain)

If we want true international economic integration, we have to go either with the nation-state, in which case the domain of national politics will have to be significantly restricted, or else with mass politics, in which case we will have to give up the nation-state in favour of global federalism. If we want highly participatory political regimes, we must choose between the nation-state and international economic integration. If we want to keep the nation-state, we must choose between mass politics and international economic integration.

- **Theory of hegemonic stability**: Power dominates political relations within countries and between them, whether they establish intermediary institutions such as the WTO to help manage these relations. The basic premise of this theory is that an open global market is a public good that tends to be underprovided unless there is someone willing to undertake that expensive task. Therefore, according to this theory, it is no mere coincidence that the creation of GATT in 1947 came when the United States was at the height of its economic competitiveness, military power and political influence.
- **Theory of Rational design** : According to the proponents of this theory, "*states use international institutions to further their own goals, and they design institutions accordingly*". WTO came into existence to fulfil the requirement of the developed countries. It was only after 1980 when the US agriculture exports faced a steep decline and a view emerged that the decline in the agricultural exports was due to protectionist policies of EEC and Japan, that the US started supporting an agreement which would enable free trade in agricultural

Case Study: The politics of the DR-CAFTA referendum in Costa Rica

In October 2007, Costa Rica became the first developing country to hold a public referendum on an international trade agreement. The referendum asked voters to decide whether or not the country should enter into DR-CAFTA, a free trade agreement between five Central American countries (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua), the

Dominican Republic and the United States. The referendum passed with a wafer-thin margin: 52 per cent voted for the agreement, and 48 per cent against. The debate during the lead-up to the referendum was highly salient and politicised. Costa Rica, along with the other countries involved, had signed the DR-CAFTA agreement in 2004. However, while the others had gone ahead to ratify it, the timing of elections in Costa Rica combined with a high level of popular opposition had delayed ratification, and the government eventually called a national referendum. While the government and large industries were strongly in favour of the agreement, a large social movement, including labour unions, students and religious groups, vigorously opposed it.

Ultimately, the government was able to sway a sufficiently high level of voters to back its negotiating position. This appears to have been largely attributable to the strength and resources of the well-established political party (the PLN (Partido Liberación Nacional)) that backed it. Although the anti-CAFTA 'No' campaign had undertaken extensive analysis, developed sophisticated argu- ments against the agreement and had a high level of grassroots support, it had to rely largely on word of mouth to convey its message and its networks were limited to the urban areas. In con- trast, the government and its pro-CAFTA 'Yes' campaign had the resources to embark on a mass media campaign and it was able to use the resources and established political networks of the PLN, which spanned both urban and rural areas. For instance, the 'Yes' campaign contracted a public relations company to help convey its messages, set up a network of 'information centres' in rural areas, and used over 20,000 vehicles to transport its supporters to polling stations. There were also suggestions that mayors in the rural areas had been placed under a high level of political pressure to support the 'Yes' campaign. Source:(Jones, 2013).

commodities. The GATT provisions for agricultural trade were found weak and need for a stronger trade regime was keenly felt. Cairns Group of countries headed by Australia and other important agriculture exporting countries also found the progress in the GATT negotiations inadequate

and unsatisfactory. The final decision on establishment of WTO was facilitated by the agreement between US and EEC, so-called 'Blair House Agreement'.

- How politics can influence the international agreement can be understood from the case study mentioned below.

Trade, Production patterns and world inequality.

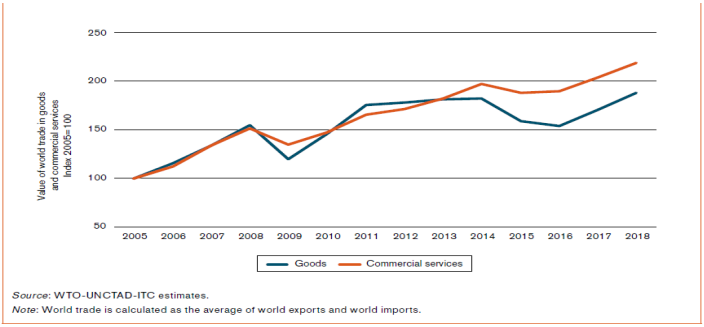
The world trade in volume has been increasing from $61.16 billion in 1951 to $18619 billion in 2019(figure 11.1). Especially after the establishment of WTO in 1995, more members have joined it. In 1990s, many countries have adopted forward looking industrial strategies like export promotion although import substitution has not been given up. The proliferation of RTAs has also indicated the importance of international trade.

Figure:11.1: Evolution of world merchandise trade

Source World Trade Organisation

Another dimension of international trade in recent times is the dominance of service sector over goods sector which is evident in the **figure 11.2.**

Figure 11.2 : Growth of world trade in goods and services



Source: World Trade Report 2019

The trade in goods and services are increasing but the trade services in services is increasing more than the trade in goods. Even though the services comprise one fifth of the cross border trade, they are the fastest growing sector. While the value of goods exports has increased at a modest 1 per cent annually

since 2011, the value of commercial services exports has expanded at three times that rate, 3 per cent. The services share of world trade has grown from just 9 per cent in 1970 to over 20 per cent today and this report forecasts that services could account for up to one-third of world by 2040. The main driver of this shift is technological change. Thanks to digitalization, the internet and low-cost telecommunications, many services sectors that were once non-tradable because they had to be delivered face-to-face in a fixed location have become highly tradable because they can now be delivered remotely over long distances. Many examples of such services are medical tourism, education especially Moodle and Massive Open Online Courses (MOOCs), livestreaming services, financial services. Just as the transport and communications revolution in the latter half of the 20th century drove down the cost of trading tangible goods across borders, giving rise to globalized manufacturing, so too is the digital revolution in the early 21st century rapidly driving down the cost of trading services across border, giving rise to a globalized services market.

It is to be noted that the share of services of national economies in developed countries are increasing and in some emerging economies in the world. Therefore, the world trade also reflects the structural transformation of the national economies. In the United States, for example, the services sector, which accounted for just 43 per cent of GDP in 1950, had grown to 61 per cent by 1990, and has reached almost 80 per cent today.

The combined share of global gross domestic product (GDP) of the Quad (Canada, the European Union, Japan and the United States) fell from three quarters to less than three fifths from 1995 to 2011. During that same period the eight emerging economies shown in the table grew from less than one tenth to over one fifth of the global economy. In 1995, the Quad as a whole was 8.1 times larger than these eight, and one country in the latter group was not yet in the system; the multiple had fallen to 2.7 by 2011, and all of them were members. To draw the most consequential comparison, the ratio of the US share of global GDP to that of China was just over ten-to-one at the start of the WTO period, but by 2011 it was just two-to-one.(see the table 11.4 below).

Shares of global GDP, 1995-2011, in %

	1995	2000	2005	2010	2011
Quad	**75.4**	**73.7**	**70.1**	**59.7**	**57.4**
European Union	30.9	26.2	30.1	25.6	25.1
United States	24.6	30.6	27.5	22.9	21.4
Japan	17.9	14.6	10.0	8.7	8.4
Canada	2.0	2.2	2.5	2.5	2.5
Selected countries	**5.3**	**4.5**	**5.9**	**6.6**	**7.2**
Russian Federation	1.3	0.8	1.7	2.4	2.7
Australia	1.2	1.3	1.5	1.8	2.0
Korea, Republic of	1.7	1.6	1.8	1.6	1.6
Switzerland	1.1	0.8	0.8	0.8	0.9
Emerging economies	**9.3**	**11.0**	**13.0**	**20.4**	**21.5**
China	2.4	3.7	4.9	9.4	10.5
Brazil	2.6	2.0	1.9	3.4	3.5
India	1.2	1.5	1.8	2.7	2.6
Mexico	1.0	1.8	1.9	1.6	1.6
Indonesia	0.7	0.5	0.6	1.1	1.2
Turkey	0.6	0.8	1.1	1.2	1.1
South Africa	0.5	0.4	0.5	0.6	0.6
Malaysia	0.3	0.3	0.3	0.4	0.4
Selected developing regions	**5.3**	**6.1**	**6.2**	**8.2**	**8.6**
Other Latin America and Caribbean	2.5	2.6	2.3	3.2	3.2
Middle East and North Africa	2.3	2.9	3.2	4.0	4.4
Least-developed countries	0.5	0.6	0.7	1.0	1.0
Rest of world	**4.7**	**4.7**	**4.8**	**5.1**	**5.3**
World	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source World Bank

Leading merchandise exporters and importers, 2018

Rank	Exporters	Value	Share	Annual % change	Rank	Importers	Value	Share	Annual % change
1	China	2487	12.8	10	1	United States of America	2614	13.2	9
2	United States of America	1664	8.5	8	2	China	2136	10.8	16
3	Germany	1561	8.0	8	3	Germany	1286	6.5	11
4	Japan	738	3.8	6	4	Japan	749	3.8	11
5	Netherlands	723	3.7	11	5	United Kingdom	674	3.4	5
6	Korea, Republic of	605	3.1	5	6	France	673	3.4	9
7	France	582	3.0	9	7	Netherlands	646	3.3	12
8	Hong Kong, China	569	2.9	3	8	Hong Kong, China	628	3.2	6
	Domestic exports	13	0.1	30		Retained imports [1]	155	0.8	12
	Re-exports	556	2.9	5					
9	Italy	547	2.8	8	9	Korea, Republic of	535	2.7	12
10	United Kingdom	486	2.5	10	10	India	511	2.6	14
11	Belgium	467	2.4	8	11	Italy	501	2.5	11
12	Mexico	451	2.3	10	12	Mexico	477	2.4	10
13	Canada	450	2.3	7	13	Canada [1]	469	2.4	6
14	Russian Federation	444	2.3	26	14	Belgium	450	2.3	10
15	Singapore	413	2.1	11	15	Spain	388	2.0	10
	Domestic exports	209	1.1	11					
	Re-exports	203	1.0	10					
16	United Arab Emirates [1]	346	1.8	10	16	Singapore	371	1.9	13
						Retained imports [1]	167	0.8	17
17	Spain	345	1.8	8	17	Chinese Taipei	286	1.4	10
18	Chinese Taipei	336	1.7	6	18	Switzerland	279	1.4	4
19	India	326	1.7	9	19	Poland	267	1.3	14
20	Switzerland	311	1.6	4	20	United Arab Emirates [1]	253	1.3	-6
21	Saudi Arabia, Kingdom of [1]	299	1.5	35	21	Thailand	250	1.3	13
22	Poland	261	1.3	11	22	Russian Federation [2]	249	1.3	5
23	Australia	257	1.3	11	23	Viet Nam [1]	244	1.2	15
24	Thailand	252	1.3	7	24	Australia [1]	236	1.2	3
25	Malaysia	247	1.3	14	25	Turkey	223	1.1	-5
26	Viet Nam [1]	246	1.3	15	26	Malaysia	217	1.1	12
27	Brazil	240	1.2	10	27	Austria	193	1.0	10
28	Czech Republic	202	1.0	11	28	Brazil [1]	189	0.9	20
29	Austria	185	0.9	10	29	Indonesia	189	0.9	20
30	Indonesia	180	0.9	7	30	Czech Republic	184	0.9	13
	Total of above [3]	**16217**	**83.3**	**.**		**Total of above [3]**	**16364**	**82.4**	**.**
	World [3]	**19475**	**100.0**	**10**		**World [3]**	**19867**	**100.0**	**10**

Source-WTO,2019

As per the world trade organization,2019 report, China has beaten USA to become the largest exporter of merchandise exports, and her share of global export is 12.8 percent while import wise the country has a 10.8 percent share. In terms of export of services, USA has a leading position with 13.9 percent, share of global trade. But the developing countries like China, India are giving steep competition in this sector.

Leading Exporters and Importers of Services

Rank	Exporters	Value	Share	Annual % change	Rank	Importers	Value	Share	Annual % change
1	United States of America	808	13.9	4	1	United States of America	536	9.7	9
2	United Kingdom	383	6.6	7	2	China	521	9.4	12
3	Germany	337	5.8	5	3	Germany	364	6.6	6
4	France	287	5.0	5	4	France	255	4.6	4
5	China	265	4.6	17	5	Netherlands	235	4.2	11
6	Netherlands	245	4.2	11	6	United Kingdom	230	4.1	10
7	Ireland	206	3.6	14	7	Ireland	219	4.0	9
8	India	206	3.5	11	8	Japan	198	3.6	4
9	Japan	187	3.2	3	9	Singapore	189	3.4	8
10	Singapore	184	3.2	7	10	India [1]	175	3.2	14
11	Spain	149	2.6	8	11	Korea, Republic of	127	2.3	2
12	Switzerland	122	2.1	1	12	Belgium	127	2.3	10
13	Belgium	121	2.1	3	13	UAE	121	2.2	6
14	Italy	120	2.1	8	14	Canada	112	2.0	5
15	Hong Kong, China	114	2.0	9	15	Switzerland	103	1.9	7
16	Luxembourg	113	1.9	10	16	Russian Federation	94	1.7	9
17	Korea, Republic of	98	1.7	10	17	Spain	88	1.6	16
18	Canada	92	1.6	6	18	Luxembourg	86	1.6	10
19	Thailand	84	1.4	11	19	Hong Kong, China	81	1.5	5
20	Austria	75	1.3	14	20	Australia	72	1.3	6
21	Sweden	73	1.3	3	21	United Arab Emirates [2]	71	1.3	1
22	United Arab Emirates [2]	71	1.2	2	22	Denmark	68	1.2	10
23	Denmark	70	1.2	4	23	Sweden	68	1.2	1
24	Australia	69	1.2	7	24	Brazil	66	1.2	-1
25	Poland	69	1.2	17	25	Austria	62	1.1	13
26	Russian Federation	64	1.1	12	26	Chinese Taipei	57	1.0	6
27	Chinese Taipei	50	0.9	12	27	Thailand	55	1.0	19
28	Israel	50	0.9	13	28	Norway	52	0.9	5
29	Turkey	47	0.8	9	29	Saudi Arabia, Kingdom of	51	0.9	6
30	Macao, China [3]	44	0.8	12	30	Malaysia	44	0.8	5
	Total of above	**4797**	**82.6**	-		**Total of above**	**4518**	**81.8**	7
	World	**5800**	**100.0**	8		**World**	**5510**	**100.0**	7

Source-WTO.2019

It will be interesting to observe the growth of the world trade and world GDP. For example, if we look at the **figure 11.3,** we can find that in recent times world trade has been growing more than the growth of world production**.**

Figure 11.3 World Production and World Trade

Source: https://think.ing.com/articles/trade-in-2018-nowhere-close-to-its-heydey

Significantly, the poverty at global level has been declining as per various international sources. For example, Poverty at global level was reduced from 11.2 percent in 2013 to 10 percent in 2015.The spectatcular reduction has been found in south asia region. However, in middle east and North African region, more people have become poorer between 2013 and 2015.

Table 11.7 Poverty of different regions of World

Poverty at the International Poverty Line of $1.90/day (in 2011 PPP)				
Region	*Headcount ratio (%)*		*No. poor (millions)*	
	2013	*2015*	*2013*	*2015*
East Asia and Pacific	3.6	2.3	73.1	47.2
Europe and Central Asia	1.6	1.5	7.7	7.1
Latin America and the Caribbean	4.6	4.1	28.0	25.9
Middle East and North Africa	2.6	5.0	9.5	18.6
South Asia	16.2	12.4	274.5	216.4
Sub-Saharan Africa	42.5	41.1	405.1	413.3
World Total	**11.2**	**10.0**	**804.2**	**735.9**

Source: (World Trade Oganization, 2019)

Globalisation and Inequality

- Globalization has created two worlds that co-exist. For some, in a world more inter-connected than ever before, globalization has opened door to many benefits. Open economies and open societies are conducive to innovation, entrepreneurship and wealth creation. For many, the fundamental problems of poverty, unemployment and inequality persist. Of course, these problems existed even earlier. But globalization may have accentuated exclusion and deprivation, for it has dislocated traditional livelihoods (World Commission on the Social Dimension of Globalization, 2004)
- The implication of international trade on growth of economies of china, India ,Brazil has been spectacular in recent times. However, questions are asked on the implication of international trade on inequality. Because of inequality, not only the economy is paying price, the society in general is also paying the price. Inequality in all aspects of society is not only evident in developing economy but also in developed economy. However, inequality is not a new concept. It was also in existence in society centuries back. But in recent times, inequality has posed a serious

challenge to the development paradigm the countries rely upon. However, the 'inequality' needs to be understood historically first.

- During the past millennium, the growth process was uneven in space as well as time. The rise in per capita income (indicator of economic growth) and life expectancy (an indicator of development) has been the most rapid in western Europe, North America, Australasia and Japan. By 1820, this group has moved ahead with an income level twice that in the rest of the world. By 1998,the gap was 7:1. The gap between the United Sates(the present world leader) and Africa(the poorest region) the gap is now 20:1.This gap is still widening(Maddison, 2001)
- After the discovery of the America, not every part of America prospered. The present variation in economic performance within the Americas — between the United States, Latin America and the Caribbean — is partly due to variations in resource endowment, but there are institutional and societal echoes from the past. In North America and Brazil the relatively small indigenous population was marginalised or exterminated, in former Spanish colonies the indigenous population remained as an underclass, and in all the areas where slavery was important their descendants have also remained an underprivileged group.
- When British became the dominant master of colonies around the world, between 1820 and 1913, British per capita income grew faster than at any time in the past — three times as fast as in 1700–1820.When British east India company ruled India, British economy prospered while Indian economy was suffering. Free trade was imposed in India and other British colonies, and the same was true in Britain's informal empire. China, Persia, Thailand and the Ottoman Empire were not colonies, but were obliged to maintain low tariffs by treaties which reduced their sovereignty in commercial matters, and granted extraterritorial rights to foreigners. This regime of free trade imperialism favoured British exports.
- The first epoch of globalisation, reinforced by the politics of imperialism, created huge asymmetries and inequalities in the world economy, which was divided into countries (mostly with temperate climates) that industrialised and countries (mostly with tropical climates) that did not industrialise.

The geographical divides turned into economic divides. The industrialised countries prospered. But, for countries in Asia and Africa, the same integration into the world economy led to underdevelopment. The rise of "the West" was concentrated in Western Europe and North America. The decline and fall of "the Rest" were concentrated in Asia, much of it attributable to China and India.

- This process was associated with a growing divergence in levels of income. Between 1870 and 1913, as a percentage of GDP per capita in Western Europe and North America, GDP per capita in Asia, as also in Africa, dropped from one-fourth to one-sixth. The period from 1820 to 1950 witnessed the "Great Divergence," as this proportion dropped from one- half to one-tenth for Asia and from one-third to one-seventh for Africa.
- The world economy grew very much faster from 1950 to 1973 than it had ever done before. It was a golden age of unparalleled prosperity which affected all regions. The acceleration was greatest in Europe and Asia. Since the golden age, the world picture has changed a great deal. Per capita growth has been less than half as fast. There has been much greater divergence in the performance of different regions. In the countries of "resurgent Asia", which have half the world's population, the success was quite extraordinary. Their per capita growth was faster after 1973 than in the golden age, and more than ten times as fast as in the old liberal order.
- Globalization has been associated with simultaneous, yet asymmetrical, consequences for countries and for people. There is an inclusion for some and an exclusion, or marginalization, for many. There is affluence for some and poverty for many. There are some winners and many losers. And there is an exclusion of people, as also countries, from the process. Beyond the economic, globalization has added a new dimension to the exclusion of people from development (Nayyar, 2019). Exclusion is no longer simply about the inability to satisfy basic human needs in terms of food, clothing, shelter, health care and education for large numbers of people. It is much more complicated. For the consumption patterns and lifestyles of the rich associated with globalization have powerful demonstration effects.

People everywhere, even the poor and the excluded, are exposed to these consumption possibility frontiers because the electronic media has spread the consumerist message far and wide. This creates both expectations and aspirations. But the simple fact of life is that those who do not have the incomes cannot buy goods and services in the market. Thus, when the paradise of consumerism is unattainable, which is the case for common people, it only creates frustration or alienation. The reaction of people who experience such exclusion differs. Some seek short cuts to the consumerist paradise through drugs, crime, or violence. Some seek refuge in ethnic identities, cultural chauvinism or religious fundamentalism. Such assertion of traditional or indigenous values is often the only thing that poor people can assert for it brings an identity and meaning to their lives. These outcomes have obvious political consequences.

- As discussed in the **October 2007 issue of the World Economic Outlook**, one must keep in mind that there are many sources of inequality. Contrary to popular belief, increased trade globalization is associated with a decline in inequality. The spread of technological advances and increased financial globalization—and foreign direct investment in particular—have instead contributed more to the recent rise in inequality by raising the demand for skilled labor and increasing the returns to skills in both developed and developing countries. Hence, while everyone benefits, those with skills benefit more.

Financial Instability in a globalized world.

There is a deep symbiotic relationship between trade and financial openness. Trade is facilitated by financial links, such as international payments and credit, and in turn results in financial links, such as the accumulation of international assets and liabilities. The relationship between real and financial openness evolves with the degree of integration and development.

Conceptually, one can think of three layers of globalization. The first, most basic layer is trade of commodities and finished goods and the corresponding simple international financial links, such as cross-border payments. Trade is settled with international payments, which almost always involve foreign

exchange transactions. Indeed, trade payments are generally denominated in a global currency rather than that of either the exporter or importer: around half of all international trade is invoiced in US dollars and close to a quarter in euros (even excluding the trade of the United States and euro area countries, respectively). Furthermore, as international transactions take time to complete given shipping time and customs processing, they require extra financing which are provided by trade finance facilities and letters of credit (where a bank guarantees payment upon delivery of goods).

The second layer involves more complex trade and financial connections. It includes trade in intermediate goods and services associated with the efficiency-driven fragmentation of production across countries and the corresponding financing arrangements. In this phase of globalization, international financial linkages support a greater degree of specialization in trade and production, notably in the trade of intermediate goods. Production can occur through ownership of foreign facilities established by foreign direct investment (FDI), outsourcing to foreign firms, or fragmented production in a global value chain (GVC). This more complex trade can go hand in hand with the growth of multinational corporations that serve multiple markets, often through production-focused foreign affiliates while concentrating research and development in the parent. These more intricate production structures require more, and often more complex, financing.

The third layer concerns the financial transactions increasingly used to actively manage balance sheet positions. This layer of globalization has been characterized by intricate financial links established solely for financial purposes. The demand for, and supply of, more sophisticated financial products and services increases with the wealth of businesses and households. In a sense, trade also supports this third layer of globalization through its contribution to higher income growth. Indeed, financial openness tends to increase strongly with income levels. **The financial openness has substantially outpaced real openness since the late 1980s, most notably for developed countries.**

The three layers share some common elements. One is the use of global currencies like US dollar. Therefore, dollar plays a

central role in determining global financial conditions. Another is globally active financial institutions. They operate in many countries across multiple continents. Through their international presence and sophistication, they facilitate the global transfer of funding and financial risks.

Globalisation and Financial Stability

One specific mechanism through which globalization can affect economic growth, poverty and inequality is its impact on financial stability. Financial crises can result in a permanent loss of income, have a devastating effect on poverty and increase inequality. Just like poorly managed domestic financial liberalization, unfettered financial openness can contribute to financial instability unless sufficient safeguards are in place. Past episodes of financial instability have demonstrated the importance of three international propagation mechanisms.

- First, highly mobile international capital can behave in a very procyclical[8] manner, amplifying financial upswings and reversals.
- Second, foreign currency exposure, in particular in dollars, transmits tighter global financial conditions and exposes countries to foreign exchange losses.
- And third, close financial linkages between globally active financial institutions can spread financial stress, although they may also act as a buffer when problems have a domestic origin.

International credit has been a key source of procyclicality. Such flows tend to be procyclical with respect to the recipient economy's business and financial cycles. Cross-border bank loans and portfolio debt flows are both positively correlated with domestic business and credit cycles. **FDI flows tend to be acyclical, while portfolio equity flows into advanced economies even appear to be slightly countercyclical**. The close link between cross-border and domestic credit may add

8 There are three relationships of indicators with the economy- procyclin, counter cyclic and acyclic. Acyclic indicator has no relation with the economy. Procyclicality refers to the tendency of financial variables to fluctuate around a trend during the economic cycle. Therefore, policies are according to the fluctuations in the trade cycle. Countercyclical measures are not according to the fluctuations of business cycle.

to financial stability risks. Cross-border credit tends to amplify domestic credit booms, as it acts as the marginal funding source: the cross-border component typically outgrows its domestic counterpart during financial booms, especially those that precede serious financial strains.

The high sensitivity of capital flows to US monetary policy is a manifestation of the "excess elasticity" of the international monetary and financial system – its ability to amplify financial booms and busts and thereby cause serious macroeconomic costs. There are two main channels through which monetary policy regimes interact to create this **excess elasticity**.

- Monetary policy settings in core economies are spread to the rest of the world through resistance to exchange rate appreciation, typically based on concerns about the loss of competitiveness (on the real side) and the possibility of surges in capital flows (on the financial side).
- The second channel is related to the fact that the domains of major international currencies extend well beyond their respective national jurisdictions. This global currency channel is especially powerful in the case of the US dollar – the dominant international currency. The outstanding stock of US dollar denominated credit to non-bank borrowers outside the United States, a key indicator of global liquidity conditions, stood at $10.5 trillion as of end-2016. This outsize external role means that changes in the US monetary policy stance have a substantial influence on financial conditions elsewhere. And since monetary policymakers, including those in control of major international currencies, are focused on domestic conditions, they could unintentionally end up contributing to financial imbalances well beyond their national borders. Notably, against the backdrop of the exceptionally accommodative US monetary policy stance, US dollar credit to non-bank emerging market economies(EME) borrowers roughly doubled between 2008 and 2016, reaching $3.6 trillion at the end of that period.

One of the key channels through which US monetary policy impacts financial conditions elsewhere is the US dollar exchange rate. In the so-called "risk-taking channel of currency fluctuations", the depreciation of a global funding currency flatters the balance sheets of currency-mismatched borrowers

and boosts lenders' risk-taking. This channel is especially relevant for external debt flows to EMEs. The channel may also influence, in particular, manufactured trade through the GVCs, which are especially sensitive to financing conditions.

The intermediation of global currencies, especially the dollar, also creates close linkages between globally active banks. The global financial crisis demonstrated how such interconnectedness propagated funding stress between the world's largest banks and forced them to deleverage internationally. Thus, the regulatory reforms in the aftermath of the global financial crisis have focused on strengthening the resilience of international banks that are the backbone of global financial intermediation.

Conclusion:

Globalisation is the process of integration of national economies through flow of trade, people and capital across the borders. It also includes flow of technology, culture too. Therefore, Globalisation is different to different people. Globalisation is not new.

Attempts to roll back globalization would be the wrong response to these challenges. Globalisation, like technological innovation, has been an integral part of economic development. As such, it should be properly governed and managed. Countries can implement domestic policies that boost resilience. These include flexible labour and product markets and policies that enhance adaptability, such as retraining programmes. Close cross-country linkages imply that policies and actions of individual countries inevitably affect others. Hence, international cooperation must supplement domestic policies. In particular, a global regulatory framework should be the basis for a sound and resilient international financial system.

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CHAPTER 4

An Ancient HR Practices & Cross Comparison Relations in the Indian Industrial sector

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Abstract:

This paper addresses gaps in research related to study and understanding of Human Resource Management in the context of Indian working culture of industrial sector. HRM practices in India specifically in the context of the industrial sector. The timeline industrialization in India, growth of HRM and major transition across Indian industrial sector post economic liberalization – 1991. Lacuna in communication of goals, review of performance and use of key PA techniques like Assessment Centers for objective analysis of multiple evaluation parameters takes an initiative for betterment of the employees of the organizations. Indian managers following a paternalistic way of management find it difficult to adhere to the process of stringent and objective performance appraisal systems. They generally tend to follow an ad-hoc system of appraising performance which is more subjective, and relationship oriented than objective and statistically measurable. Their conflict in catering to their professional role while maintaining balance with their social role in reflected in a superficial commitment

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to the process of performance appraisal and true value determination of the subordinates.

Keywords: *Ancient HR Practices, Working Culture, Performance Management, Cultural Management, Compensation Management, Job Market India.*

Introduction

HRM or human resource management as a strategic function that encompasses management of its critical human assets for gaining competitive advantage in a dynamic business environment. HRM is the function performed in organizations that facilitates the most effective use of people to achieve organizational and individual goals (John Ivancevich and Glueck, 1989). The concept that 'human resource' is valued assets that can help tide an organization over turbulent waters has been very aptly realized in the recent times of economic turmoil by businesses worldwide. The genesis of this concept however lies with the onset of the behavioral movement in the early 20th century when eminent researchers like Mary Parker Follet, Chester Barnard, Elton Mayo and Douglas McGregor realized the most important component of any business 'its manpower or human resources' that made the difference towards better efficiency for any organization. Termed the 'Human Relations Movement', researchers tried to understand how issues like working conditions, workplace relations, job satisfaction, work variations etc could impact efficiency levels of an organization.

Armstrong (1992) defines HRM as a strategic and coherent approach to the management of an organization's most valued assets the people working there individually and collectively contribute to the achievement of its objectives.

The Michigan school (Fombrun et al., 1984) believed that HR systems and the organization structure should be managed in a way that is congruent with organizational strategy, also therein termed as the 'matching model'; the emphasis was on understanding the entire cycle of Human Resource Management beginning with selection, to effective appraisal, giving rewards to developing high quality employees in the long term perspective. Round the same time period, the Harvard school of thought (Beer et al., 1984) developed the 'Harvard Framework' (Boxall, 1992) that first held the belief of considering a long

term perspective of people management as potential assets than merely variable costs. Beer et al.,1984 went on to state: Human resource management involves all management decisions and actions that affect the nature of the relationship between the organization and its employees its human resources.' They were also the first to believe that line managers should accept the responsibility for alignment of competitive organizational strategies and personnel policies rather than totally depending only on personnel managers for effective management of their people. This model went on to exert considerable influence on management thoughts of countries across the world and also the functioning of organizations by creating a difference between personnel management and human resource management. HRM has been a field of study with increased complexity and multidisciplinary approach. (Cakar and Bititci, 2002) through their research demonstrated the levels of inconsistency in the study of HRM with respect to HRM models from a business process perspective.The focus has been on understanding what HRM means in the Indian context across the industries (Singh, 2005; Rao T. V., 2009), how this particular discipline is helping firms cope against MNC competition (Som, 2002, 2006, 2008), cross cultural context in terms of comparison with the US and UK (Amba-Rao, 1994, 2000; Badhwar et al., 1997, 2001, 2003, 2004). However, most of the literature has been generic in nature studying the Indian context of HRM across all spectrums of the Indian industry with considerably less focus on understanding the specific aspect of this discipline to the Indian industrial sector. Evidence of little research and review on this specific sector has addressed major issues related to values (Sinha, 1980, 1988, 1990; Singh, 1990), leadership (Sinha, 1984) and performance management (Amba-Rao et al., 2000; Rao S., 2007) or has been based in understanding union and industrial relation issues(Flagan and Deshpande, 1996; Ramaswamy and Schiphorst, 2000; Bhattacharjee, 2001; Bhandari and Heshmati, 2005; Bhandari, 2010) with less focus on understanding issues of organization, management and impact of HRM particularly on functioning in the industrial sector. Human Resource Management in the context of Indian Automobile. Through literature review (secondary data), and help of prevalent cases pertaining to this sector, the following points are addressed. However, research related to India has been limited with more

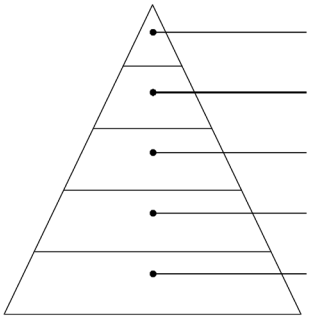
focus being on cross cultural comparisons between US, UK and Germany. The timeline for literature review has been taken from 1970-2025, as it encompasses the period of industrialization in India, growth of HRM and major transition across Indian industrial sector post economic liberalization – 1991.

The history of human resource management in India:

Management as a concept is not new to the country. Historically it is stated that Kautilya (the most reputed economist and management guru of Indian History, advisor to King Chandragupta Maurya) provided a systematic treatment of management of human resources as early as 4th century B.C. in his treatise titled "Artha Shastra". This book or treatise details logical procedures and principles in respect to people management referring to the *rajya (state)* as an organization and the *raja (king)* as the head or CEO of an organization. Kautilya being the eminent advisor, through his *sutras* emphasizes the need of humility in the king and his *mantris* (managers) while following the path of dharma (ethics & righteousness) in management of an organization *(state)*. The importance was on self-management and self-evaluation before considering oneself truly capable of leading an organization as a competent leader keeping welfare of people and the organization before one's own motives. The text although written centuries back in an ancient script *(Sanskrit)* draws parallel to today's modern organization systems and issues. (See Muniappan, 2005 and Rangarajan, 1992). Similarly, the *Bhagvad Gita,* considered one of the most holy texts of Vedic literature written during *Mahabharata* is a practical guide to all aspects of life including management of self and thereafter management of people and resources. Concepts like optimum utilization of resources, decision making, leadership, ethics, motivation, morale and outcome of performance (deeds) are clearly marked in the verses of this great book as ongoing dialogues between the *Lord Shree Krishna* and the *Warrior Arjuna*. (Bhattathiri, Unknown). Understandably the ancient Vedic concept of 'Varnashrama' also refers to division of work based on natural classification inherent in a society, based on one's personal capabilities and aptitude. 'Varna' means 'root' and its understanding differs in interpretation of Rig Veda and Bhagwad Gita. The 'Purusha

Sukta' in the Rig-Veda 10:90, refers to the classification of four varna by way of comparison to the 'primordial man' (Purusha). It defines the Brahmana as the mouth, his arms as the Ramayana (used for Kshatriyas), his belly and thighs as Vaishya and his feet as Sudra. The Bhagvad Gita differs in this viewpoint with Lord Krishna classifying individuals not based on his birth or heredity but on his interests and capabilities in doing work. The fact that Hindu societies had already understood this concept can be aptly visible from segregation in terms of skill based work like Brahmins (the mouth) undertaking teaching and spiritual work, Kshatriyas (the arms) undertaking protection of the state as warriors, Sonars (belly and thighs -the providers) – goldsmiths, Lohars – blacksmiths, Baniyas – traders (part of the *Vaishyas* clan) and Shudras – people undertaking menial jobs. This ancient management knowledge was quite relevant to the functioning of a society, being relevant in this century also; wherein we refer to career development-based one's interest and aptitude towards work.This concept of management from ancient India was however lost due to successive invasions upon the country and confluence of different cultures from across the world, fragmenting the country into numerous small states governed by sovereign rulers lacking at times both competence and people (*Praja*) management skills. Gradually the natural classification of the society evolved due to subsequent inter-marriages and subdivisions, giving rise to more than 3000 plus castes, as can be accounted for in modern India. These sub-castes or 'jatis' resulted in more rigidity in a societal system that had been governed by principles of work interest, creating stringent laws for each sub-group by way of establishing supremacy of their own affiliated groups (jatis Varna or Caste system in India

Varna or Caste system in India



BRAHMINS
Priests

KSHATRIYAS
Warriors and rulers

VAISYAS
Skilled traders, merchants and minor officials

SUDRAS
Unskilled workers

PARIAH
"Harijans"
Outcasts,
"Untouchables,"
"Children of God"

The advent of modern management in India:

The initial years of modern management evolution in India, started with the eighteenth century (termed the Colonial period till the year 1950) when the Britishers or the colonial rulers set foot in the country, an era that has been marked with a sole focus on utilization of labour as a commodity which can be bought and sold at a price. So great was the impact of this thought process during the colonial rule, that the then formulated Plantation Act 1863 treated labour with imprisonment and severe punishment on failure to do work as ordered. The mechanism was biased with hardly any intervention to protect the interests of workers except in issues related to wage settlement. The slow progress towards recognizing labour as human beings and not machines began with the Factories Act 1881, which allowed some liberal

policies like weekly offs, fixed wages and fixed hours of work. Personnel management being the main concern of employers during the early twentieth century, there was more concentration on industrial relations and labour management paving way for the enactment of various acts namely the Trade Union Act (1926), Workmen Compensation Act (1926), Trade Disputes Act (1929), Bombay Industrial Relations Act (1938); recommendations of Royal Commission on Labour 1931 led to the Payment of Wages Act (1936) and further amendments to Factory Legislations Act (see report by First National commission of Labour, NLC, 1969).Post independence focus slowly started shifting towards industrialization of the new country and evolution of a uniform Labour policy. However, the veil of colonialism still hung greatly over India with major leaders still being under the influence of Western philosophies and policies. Evidence of this fact is visible during the post-colonial phase of management evolution in India, from 1959-1976. The Indian government was keen on aping all that was Western and incorporating the same in the Indian context. It began looking at industrial investment through a 'mixed economy' policy wherein technology would be imported from Western nations but there would be a protection regime for domestic industries by way of policies relating to regulations on price levels, import levels, joint ventures, and investment levels to name a few (Rothermund, 1992). Their ambitious industrial and labour policies were backed by rising Indian business houses and leaders who were prominent socialists and authorities in themselves. Being family-controlled business that worked on the 'managing agency system', investment and staffing decision were centralized with no major merit towards empowerment of human resources (Tandon, 1980). The resultant effect of which became aptly visibly not only in the formulated Labour policies but also on management of workforce across the industries, being more legislative and reactive than being proactive and voluntary. However, this hope of quick fix policy by the Indian government did not work very well, with the country witnessing turbulent times from the year 1977 (when emergency was declared in India) till 1990 the year before liberalization process began in India. The subsequent series of wars that India faced from 1962-1972, bred a culture of protection across the Indian industry per say the industrial sector (being the most dominant sector). The crisis was compounded

by the lack of managerial talent in India since Indian managers belonging to a totally different cultural background just could not adjust to the managerial theories and models of the West. Theorist started questioning the root of Western philosophies with scathing remarks on Indian policy makers and so-called management gurus about the sanity of blindly aping the West in all domains of industrialization and management. They emphasized the need to understand concepts from India's own ancient roots, culture and values, even spirituality (Hinduism) and incorporate the same into Indian managers for better sensitivity to one's own people alternatively for better people management. (Chakraborty, 1991, 1995). India during this era of crisis, dipped from being one of the major industrialized countries to the bottom of the rung in the list of 10 industrialized nations. The 1992 UNDP Report of Human Development ranked India at 134, in a list of 160 countries on the human resource index.

The country's journey of progress began with the New Economic Policy, 1991 initiated by the then Prime Minister – Shri Rajiv Gandhi and his stalwart Dr. Manmohan Singh, opening the doors of Liberalization and ushering in the concept of competing in a globalized environment for the Indian industry. Banga (2005) presented a view on liberalization and its impact on wages and employment. She went on to conclude that needed to be increased in export-oriented sectors coupled with liberal labour laws that can go a long way towards improving employment levels and add on to the skills of workmen enabling strategic utilization of manpower for economic growth of the nation. This phase beginning 1992 has progressed greatly over the last two decades, accepting Human Resource Management as a holistic concept incorporating the essence of human spirit and recognition of its potential for business success approaches and models India National visionaries and model companies.

India has ever been a land of paradigm and fascination. People from the West had previously envisioned the country as a land of spiritual gurus and snake charmers a concept that has taken a long time to erode even with globalization and economic liberalization. Today India stands tall with its diverse culture, considerably huge population, and economic disparity as one of the fastest growing developing nations. It is a nation with

the largest English-speaking population and the world's largest base of middle class that has led the spurt of growth. A recent report by IMF has pegged India's GDP growth at 7.9% for the year 2025.

The country has ever been heavily influenced by Western management philosophies and schools of thought, particularly those of the United States and UK. Management education based on Western philosophy of 'materialism' gained prominence in India around the early sixties with the establishment of the Indian Institutes of Management (the most prestigious and reputed institutions of India), funded by the Ford foundation based on the thoughts and systems of its able western counterparts the Harvard School of Management and MIT's Sloan School of Business Management emphasizing the need to incorporate Western or more specifically US management theories and models as a medium of achieving collaborative management education. (Hill et al.1973, Srinivas N., 2009). Conversely the country has still clung to its roots, ethos and cultural values in terms of people management leading to a misunderstanding that generalized HRM principles do not work for India. The country has its own philosophies deeply rooted in cultural beliefs, traditions and habits that dominate its human resource management principles and functions (Sparrow, Budhwar, 1997). The best part about HRM evolution in the country has been its ability to incorporate principles, approaches and models from across the world that was beneficial to the functioning of the organizations. While labour and personnel management principles were heavily borrowed from United Kingdom, approaches and models of HRM came from the United States, quality consciousness and norms were adapted from the Japanese, thus creating a powerful productive concoction sprinkled with indigenous Indian values and ethos a sure shot Indian recipe for success even during the times of recent economic recession. Indian companies during post liberalization have faced many challenges in terms of re-orienting its workforce towards a more competitive and volatile business scenario by ways of either re-skilling or multi-skilling its manpower across various functional domains; making themselves capable of surviving amidst the onslaught of multi-nationals. This phenomenon has further necessitated Indian organizations to look beyond their narrow

domains of family oriented/ family centric management to wider perspectives of strategic management according to due importance to strategic human resource management as one of the critical factors of success in a competitive business domain. Although HRM in this country is at an evolutionary stage most suitably at its youth, there have been some progressive leaders and their related organizations who have laid the foundation for better people management pre-liberalization also; prominent amongst them being Jamsetji N Tata and his establishment the TATA group of companies (initially established as Tata Sons limited). Jamsetji, and the son Ratan the founder of Tata group was a strong believer of the welfare of all major stakeholders; primarily the employee stakeholders whom he understood as the heart of any organization reflecting the image and growth of any firm (Sivakumar, 2007). A visionary leader during his times (pre-independence era), Jamsetji stressed employee welfare by way of hygienic work and accommodation facilities for labour, recreational and education facilities for the employee family members, awards for performance and even investment in training and career development of employees; something unheard of then. Such was his understanding of labour psychology, that he was forever committed to the culture of participation in organizational growth. In times when management studies were at a nascent stage and industrial rules were not so formidable; Jamsetji pioneered retirement benefit systems for mill workers by way of voluntary provident fund and gratuity schemes. This dedication of the founder was carried on by his subsequent successor JRD Tata who had his own passion of philanthropy and tolerance, resulting in this esteemed group being recognized as a respectable and ethical organization of India. The impact of ethical image of this group of companies was such that employees held a degree of prestige in working for this organization and the name TATA became a synonym for 'Trust' in the country. JRD never believed in the philosophy of monitoring employees. His understanding was based on grooming the best of employees by way of participative and free-rein leadership, an ideology clearly reflected in numerous innovative people centric policies developed and adopted by the Tata group companies (Wakins, 2007). Tata Steel, one of the first companies of the group was a pioneer in progressive industrial relation policies introducing joint- consultative system of

management for better co-operation between labour and firm (Sen, 2009).

The legacy of Tata carried on with Ratan Tata at the helm, steering the organization towards a more strategic path albeit a little more autocratically than JRD crafting a new identity of post-liberalization period. the group in terms of retaining its core values and ethics but coming across as a more dynamic group with not only national but global business interests at its forefront.

Scientifically in the context of the Indian industrial sector:

Research related to job perception by Indians, has linked 'Undertaking a job' to not only extrinsic factors like authority and compensation but also to intrinsic factors like 'Self-esteem', 'Achievement' and 'Self-development'. Given this cultural and historical background, researches conducted on work organizations have displayed a strong hierarchical structure, high power concentration, centralized authority and decision making on part of the employers or supervisors simultaneously exhibiting the contrast effect of these dominating values on the employees across industrial sector by way of lacking sense of direction, affection towards co-operation, accountability and responsibility (Tripathi, 1990; Sinha, 1980, 1988, 1990). Kakar (1971) details Indian work organizational culture based on an understanding of the history of authority patterns from the British era. The study outlines shifting of authority patterns after Independence, from the hands of British supervisors to Indian managers who believed that maintaining high power distance between the superior and the subordinate and a display of assertive behavior can entail (induce)? work-related productivity from the employees. The show of emotions (by way of sympathizing) and lack of discipline by the supervisors while dealing with subordinates was not traditionally acceptable in the industrial sector, where being paternalistic or acting as a father figure commanded respect and power. The supervisors were supposed to maintain the power distance from subordinates and only interact with them when some problem arose, to give guidance or advice.

Sinha (1980), Sinha and Kanungo (1997) discuss the emergence of two different facets of relationship between the superior and subordinates across Indian organizations based on nurturing-style and participative style that progresses based on the maturity of the subordinates in terms of gaining more experience, expecting autonomy, responsibility and participation. An interesting fact to note in this study is the reference to sneh (affection) and shraddha (respect) in this relationship that values the paternal image of the supervisor ensuring workers.

Performance Management and Compensation Systems:

India has traditionally been a country with high power distance in working relationships, implying reverence and high authority for the superiors. Mendonca and Kanungo (1990) pointed out the typical aspects of the Indian way of management wherein decision process was centralized, allowing less scope for employees to be updated about different aspects of management. Similar views about leadership and supervisory styles of management across Indian organizations have been detailed by Kakar (1971), Singh (1990), Virmani and Guptan (1991). These studies through understanding of Indian work cultures and values emphasize a different perspective towards management of employees by Indian supervisors. Indian managers following a **paternalistic way of management** find it difficult to adhere to the process of stringent and objective performance appraisal systems. They generally tend to follow an ad-hoc system of appraising performance which is more subjective, and relationship oriented than objective and statistically measurable. Their conflict in catering to their professional role while maintaining balance with their social role in reflected in a superficial commitment to the process of performance appraisal and true value determination of the subordinates. Amba Rao et al. (2000) tried to understand performance appraisal systems in India by way of a comparative study across 116 firms in India, comprising both public sector, private sector and multinational/joint venture firms. The study revealed the impact of culture and values on the functioning of Indian managers and their perception towards the process of performance appraisal. Most firms conduct the routine annual performance appraisal process, but the objectivity and

evaluation parameter varies. For public sector organizations, the process is more of a formality given its rules and adherence to legislations, the focus is more on understanding venues for developmental perspectives than evaluation for assessing value and worth of an individual. The discussion process initiated for evaluating an employee's performance is structured and formal, with less scope for the employee to assess his current performance or any future avenue for improvement. This data is backed by seniority and service-based pay cum progression systems across Indian public sectors, reducing the credibility of performance appraisal process as a comprehensive evaluation tool.

Sadananda P. (2009) details a study of **NALCO's (National Aluminum Company Limited-** A Navaratnam PSU Performance Management System (PMS) through a book chapter. The study highlights aspects of PMS which is based on Management by Objectives and is an annual exercise for both executives and non-executives of the organization. The survey depicts lacuna in communication of goals, review of performance and use of key PA techniques like Assessment Centers for objective analysis of multiple evaluation parameters. Although NALCO follows the mode of Coaching and mentoring for employee development, the system has not been implemented very successfully, and surveyed employees still feel that it is more of a formality than an intended developmental effort.

Conclusion:

The Human resource practices existing in the Indian industrial sector. Limitation of empirical research-based literature for this sector, ensured focus on a wider spectrum of published literature pertaining to the Indian industrial sector. A major source of the industrial sector has been quite an amount of empirical research by Badhwar et al; covering around 192 manufacturing units across India; albeit the focus of these studies has been more on work and cross –cultural comparisons. Which remains a lack of empirical research from Indian authors related to understanding issues like work culture across Indian manufacturing organizations pertaining to interplay of Indian values, its effect on employee relations, leadership and teamwork. Limited research done in this area indicates major

influence of Indian values on work relationships coupled with a mixed acceptance of western philosophies of management.

The studies conducted across varying time spans have demonstrated the typical behavioral aspects of Indian managers/leaders. While earlier studies conducted pre-liberalization have identified, Indian managers as having high power distance, being controlled and fond of rigid hierarchical structures, later studies conducted post-liberalization, have portrayed the changing face of leadership as more nurturing, transformational and employee-centric, given the highly competitive and volatile business scenario. Indian managers/leaders having grown in times of adversity, understand that there is no 'One way' of management; hence their focus has been to utilize western management principles while experimenting with their unique cultural flavors and finding the best possible 'Indian' way of empowering and developing its people for higher gains. During the study, it was also observed that there are no specific gender related studies that have been initiated for this sector; to help understand issues with women leaders or impact of gender on group member work relationship, performance and productivity. Furthermore, there exists lacuna on empirical research pertaining to the employee recruitment and selection practices in India. Though some studies have broadly detailed recruitment practices as part of a larger study comparing private and public sector HRM practices (Budhwar, 2003, Budhwar and Boyne, 2004); the end results are more generic failing to differentiate recruitment process for white and blue-collar workers. Studies in the domain of performance management is also limited, with focus only on understanding existence of performance management practices in the industrial sector, with less stress on understanding its effectiveness particularly to Indian organizations and Indian employees who may be under influence of country related values. This specific synergy between performance management measures and its effectiveness with Indian employees has not been largely explored, also their remains a lack of focus on linkage between compensation and motivational

factors related to effective performance in this sector. The lacuna pertains to empirical research on understanding management process for blue-collar workers, like their recruitment, selection, analysis of training needs, performance management or work relationships. Studies related to understanding use of labour and status of unions in the Indian industrial sector concentrates on detailing effective and optimum utilization of labour and a basic understanding of the limited status of registered unions, without detailing current industrial relations scenario and impact of globalization on union bargaining power. India today is on a high growth trajectory, and the Indian manufacturing industry is struggling to keep pace. The sector is plagued with high shortage of skilled and unskilled manpower both at supervisory and worker levels. The report (2006-2016) identifies procurement of manpower, its development and specialized training as key focus areas for sustained productivity and growth of this sector. Researchers need to work towards understanding specific challenges of this sector like Skills shortage, Talent development & nurturance, Employee engagement, Career transitions, Attrition and Unionism. Thus, the author feels that there is a need for concentrated efforts towards undertaking empirical research in specific aspects of the broad-based Indian manufacturing domain, given its complexities and exploring the impact of HRM practices on the continued growth and progress of the corresponding industries accordingly.

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CHAPTER 5

Cost of Cultivation and Returns of Brinjal by CACP Cost Concepts in Anand District: Way of Doubling the Farmers Income

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Abstract

The doubling the income of farmers are possible by different ways, out of all strategies of markets, which has increased the income of farmers by using superior quality of seeds, high yielding varieties, use of drip irrigation, recommended dozes for fertilizer and selling their produce by proper marketing system. India is the second largest producer of vegetables in the world next to China. Brinjal is the major vegetable crop of middle Gujarat. The present investigation was carried out to study the cost of cultivation and returns of brinjal by CACP cost concepts. The study was conducted in Borasad and Anand which were selected purposively and out of that 60 Brinjal growing farmers were selected for the study. The decision regarding the choice of crop enterprise to be taken on the farm and the allocation of area and resources under it largely depends on level of yield, price of output and the cost of inputs used in the production of that crop. The cost of cultivation and the returns to different factors of production help in decision making about the selection of crop and hence, these measures were worked out for Brinjal. On an average, ₹. 91672.6 were spent on brinjal per hectare.

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Among the different components of cost of cultivation, hired human labour accounted for the largest portion (21.73 per cent) followed by the hired labour (11.38 per cent), value of FYM (9.34 per cent), value of fertilizer (8.45 per cent), irrigation charges (7.85 per cent), rental value of own land (5.54 per cent), insecticide and pesticide (5.10 per cent), charges of machinery (4.91 per cent), seed (3.82 per cent) etc., for the cultivation of brinjal highest labour cost use for the picking (54.90 per cent) followed by the irrigation (13.44 per cent), weeding (12.32 per cent), transplanting (5.60 per cent), fertilizer application (4.20 per cent), manure and cake (3.36 per cent) etc., Major problem in cultivation of crop is farmers are not followed the recommended package of practices and therefore they can't get higher profit.

Keywords: *Cost of Cultivation, Brinjal, Returns on Different Cost Concepts Basis, Anand.*

Introduction

Vegetables are grown in India since thousands of years but now-a-days it has become an important enterprise at national and inter-national level. In recent years, the vegetables have become as an essential requirement of the daily human diet, because of its nutritional value. Regular use of vegetables provides us most of the essential health building and protecting substances, such as vitamins and minerals. In India where vegetarianism has been a way of life, since, the early days of recorded history, the problem of under nutrition and malnutrition can only be solved through balanced diet for which vegetables are essential component of the daily diet. Brinjal (Solanum melongena L.) or eggplant is one of the most common popular and principal vegetable crops grown in India and other parts of the world it's having economic importance throughout the world, and is mainly grown in Asian subtropical regions (94% of world production), where its popularity has earned it the title of '**the king of vegetables**'. According to the Food and Agriculture Organisation of the United Nations (FAO 2015). The brinjal is of most importance in the warm areas of Far-East, being grown extensively in India and other Asian countries like Bangladesh and Pakistan. Other major brinjal producing countries are China, Turkey, Japan, Indonesia and Spain. The cultivated brinjal is of Indian origin and has been in cultivation for long time (Thompson and Kelly, 1957). Vavilov (1928) was of the opinion that its centre of origin was in the Indo-Burman region.

Methodology

Selection of area:

In the Anand district comprise 8 talukas; out of these 2 talukas namely Anand and Borasd were purposively selected for present study. From each selected district 30 brinjal growing farmers were randomly selected. Thus, total 60 respondents were selected for present investigation.

Tabular Analysis:

Calculation of Cost and return

The cost concepts used for estimating the per hectare cost of Brinjal, Cost 'A', Cost 'B' and Cost 'C1 and C2' which are normally used in farm management studies.

The different cost items that are included under each cost concept are detailed below

Cost A: It includes –

1. Value of hired human labour
2. Value of bullock labour (owned / hired)
3. Value of seeds (owned / purchased)
4. Value of manure (owned / purchased
5. Value of fertilizer
6. Value of pesticides and insecticides
7. Irrigation charges
8. Charges for machinery (owned / hired)
9. Other expenses paid, if any
10. Depreciation on farm building and implements
11. Interest in working capital (12%)

Cost B: Rental value of owned land + Interest on fixed capital assets (excluding land) (@ 10 %).

Cost C_1: Cost B + Imputed value of family labour.

Cost C_2: Cost C_1 + 10 per cent of the Cost C1 as a managerial charges.

Income measures

The various income measures will be worked out as under.

(i) Value of Gross Output (Gross Income)

It will be calculated by considering the total production in quintal and price prevailing of product per quintal.

(ii) Farm Business Income

Gross Income minus Cost A

(iii) Family Labour Income

Gross Income minus Cost B

(iv) Farm Investment Income

Net Income + Rental value of owned land + Interest on owned fixed Capital

(v) Net Income (profit or loss)

Value of gross output minus Cost C_2

(vi) Input – Output ratio

Gross income/ Cost C2

Result and Discussion:

Table:1 shows that the details of farm structure viz., educational status, occupations, and organizational participation affect the economy of the different farming systems and also the adoption of improved technology to a considerable extent. Educational status affects the cultivator's response to change of cropping patterns and their improved technology with the combination of probable sources of income. These aspects of socio economic characteristics of sample farm for sample cultivators have, therefore, been analyzed and presented here.

The information on socio-economic characteristics of the respondents is presented in Table 1. Revealed that majority of the farmer's belonged to secondary education level (8 to 12), the proportion of secondary education level was found to be highest i.e.(55per cent). Whereas 18.33 per cent of the farmers had illiterate, 15 per cent up to primary school education and 11.67 per cent of farmers had college level education.

In all the four-farming systems majority of farmers had higher share in secondary education level. The attributed reason may be

that farmers were able to take innovative and timely decisions to adopt new technology to enhance their farm income.

Table 1. Socio economic characteristics of sample farm

Sr. No	Particular	Unit	Percentage
1.	Total Respondents (60)	Nos.	100
2.	Education level	Nos.	
	Illiterate (0)		11 (18.33)
	b. Primary (1 to 7)		9 (15)
	Secondary (8 to 12)		33 (55)
	College (>12)		7 (11.67)
	Total		60 (100)
3.	Occupation	Nos.	
	F		35 (58.33)
	F+AH		22 (36.67)
	F+AH+B		0
	F+AH+S		1 (1.67)
	Other		2 (3.33)
	Total		60 (100)
4.	Membership	Nos.	
	Village Panchayat		(13.33)
	Milk Cooperative		(21.67)
	Farmer Club		0
	Seva Sahkari		0
	ATMA		0
	No membership		39 (65)
	Total		60 (100)

Source: own survey

The results are given in Table 2. The data revealed that the cost incurred by various operations of brinjal cultivation. On an average, ₹. 30360 were spent on brinjal per hectare. Among the different components of cost of cultivation, human labour accounted for picking of brinjal was the largest portion (51.64 per cent) followed by irrigation (12.64 per cent). The other major components were weeding charges (11.59 per cent), Fertilizer and Manure accounting (7.90 and 3.95 per cent),

transplanting charges (6.58 per cent), Gap filling (2.63 per cent), land preparation (2.12 per cent) and spraying (0.92 per cent). The cultivation of brinjal requires more labour use for picking and application of irrigation and as such the share of human labour accounted for the highest share of ₹. 15680 per hectare (54.90%). On an average, 27890 were spent on brinjal operation per hectare. The other major components were highest share of fertilizer, manure and irrigation cost accounted ₹.7750 (27.29%) and ₹.7200 (25.81), PPC and herbicide ₹. 4680 (16.78), seedling with gap filling that was accounted ₹.3500 (12.54), cake ₹. 1360 (4.87) and other Miscellaneous charges ₹. 3400 (12.90). The cost for the cultivation of brinjal was highest fertilizer and manure.

Table 2. Calculation of Operation wise labour using in brinjal cultivation

Sr. No	Particular (family + Hired labour)	Quantity/ unit	Rate (₹/unit)	Amount (₹/ha)
	Land preparation	8	80	640 (2.12)
	Manure	12	200	2400 (7.90)
	Fertilizer	15	80	1200 (3.95)
	Transplanting	20	100	2000 (6.58)
	Irrigation	48	80	3840 (12.64)
	Weeding	44	80	3520 (11.59)
	Gap filling	10	80	800 (2.63)
	Spraying	4	70	280 (0.92)
	Picking	196	80	15680 (51.64)
SUB TOTAL		**357**	**850**	**30360 (100)**

1.	Manure	6 trolly / ha	1200 / trolly	7200 (25.81)
2.	Cake	4 bag/ha	340 /bag	1360 (4.87)
3.	Fertilizer			
	Urea	300 kg/ha	5.5 / kg	1650 (5.43)
	ii) SSP	200 kg/ ha	8 / kg	1600 (5.73)
	iii) MOP	250 kg/ha	18 / kg	4500 (16.13)
4.	Seeding (with gape filling)	1 2 0 0 0 + 2000 plant / ha	0.25/ plant	3500 (12.54)
5.	Irrigation	120 hr	60 / hr	7200 (25.81)
6.	PPC & Herbicide	---	----	4680 (16.78)
7.	Miscellaneous	---	----	3400 (12.90)
SUB TOTAL				27,890

Source: Own survey

The table: 3 shows that total cost of cultivation (Cost A) per hectare of brinjal amounted to ₹. 66965 (73.05%) respectively. Cost B was ₹.72898.69 (79.52%) which was highest on farms. The average of Cost C1 and Cost C2 were ₹. 83339 and ₹. 91672.6 respectively. Among, Cost C2, which includes managerial, cost ₹. 91672.6 were worked out to be per hectare on an overall basis. Per hectare cost C2 is the total cost of cultivation of brinjal crop which includes the managerial cost of farmers also.

Table 3: Cost of cultivation of brinjal on CACP cost concepts basis on (₹/ha)

Cost A		Value	Percentage
	Value of hired human labour	19920	21.73
	Value of bullock labour (own/hired)	3000	3.27
	Value of seed	3500	3.82
	Value of manure	8560	9.34

	Value of fertilizer	7750	8.45
	Value of pest. &insecticide	4680	5.10
	Irrigation charged	7200	7.85
	Charged of machinery	4500	4.91
	Other miscellaneous cost	3400	3.71
	Depreciation on farm building and implement	1880	2.05
	Interest on working capital	2575	2.81
	TOTAL	66965	73.05
Cost B			
	Cost A	66965	73.05
	Rental value on owned land	5083.38	5.54
	Interest on fixed capital	850.31	0.93
	TOTAL	72898.69	79.52
Cost C1			
	Cost B	72898.69	79.52
	Value of Family Labour	10440	11.38
	TOTAL	83339	90.91
Cost C2			
	Cost C1	83339	90.91
	10 % of cost C1	8333.869	9.09
	TOTAL	91672.6	100

Source: Own survey

Income Measures:

Income measures from brinjal cultivation in Anand district of Gujarat are given in Table 4.The table reveals that farm business income which represents returns over cost A was ₹. 9423 area. The family labour income per hectare of brinjal cultivation was worked out to be ₹. 88301.3 per hectare. Net income implies profit per hectare after deducting cost C2 from gross income. The overall net income from brinjal cultivation was ₹.69527.4 per hectare. The overall returns to farm investment from brinjal cultivation were ₹.75461 per hectare. Moreover, the input-output ratio as a whole also observed i.e. 1.75. The probable

reason might be the share of brinjal cultivation in total cost and total returns under this system. Vegetables also generate the income which was less compared to other enterprises but farmer received the regular income. Thus, there is need to suitably modify the development approach and to consider improving whole farm production with horticulture crops especially for vegetables and other mixed crops.

Table 4: Returns from cultivation of brinjal crop ₹. / hectare

Sr. No	Particular	Amount (₹/ ha)
1.	Gross income	161200
2.	Farmer Business income	9423
3.	Family Labour Income	88301.3
4.	Net income	69527.4
5.	Farm Investment Income	75461.0
6.	Input – Output Ratio	1.75

Source: Own survey

Policy Implications

The cultivators of brinjal had lack of scientific knowledge about cultivation practices and efficient use of productive resources. Therefore, it is important to impart technological knowhow at doorstep through extension workers and Agricultural Research stations organizing field days on farmer's fields. The production and productivity levels have to be improved in the study area to increase the availability as well as to reduce per unit cost of production. This can be achieved by rational allocation of scarce farm resources by the vegetable growers. If farmers have adopted the agricultural university's recommendation to get the higher profit. Below table shows that comparison between farmers using practices and recommended practices of brinjal cultivation.

Sr. No	Particular	Farmer	Recommendation
1.	Seedling	14,000 plant/ha	18,000 -20,000 plant/ha
2.	Fertilizer	138- 32-150	100 -50 -50
3.	Manure	12 t / h	15 - 17 t / h
4.	Variety	Local	Dolly 5, GOB 1, GBH 1
5.	Yield	20.8 t / ha	30 -35 t / ha

Source: Own survey

Conclusion

Cost of cultivation of brinjal showed tendency to increase with increase in the size of holding. The cost of cultivation and the returns to different factors of production help in decision making about the selection of crop and hence, these measures were worked out for Brinjal. On an average, ₹. 91672.6 were spent on brinjal per hectare. Among the different components of cost of cultivation, hired human labour accounted for the largest portion (21.73 per cent) followed by the hired labour (11.38 per cent), value of FYM (9.34 per cent), fertilizer (8.45 per cent), irrigation charges (7.85 per cent), rental value of own land (5.54 per cent), insecticide and pesticide (5.10 per cent), charges of machinery (4.91 per cent), seed (3.82 per cent) *etc.*, for the cultivation of brinjal highest labour cost use for the picking (54.90 per cent) followed by the irrigation (13.44 per cent), weeding (12.32 per cent), transplanting (5.60 per cent), fertilizer application (4.20 per cent), manure and cake (3.36 per cent) *etc.*, Major problem in cultivation of crop is farmers are not followed the recommended package of practices and therefore they can't get higher profit.

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CHAPTER 6

An Incidence of Financial Literacy in Anand District: A Critical Evaluation

Dr. Parimalsinh Rameshinh Chavda* & Amruta Chavda**

Abstract

Financial literacy is essential for making informed decisions about saving, investing, and managing personal finances. This study aims to examine the financial knowledge, behaviour, and awareness of male and female respondents and identify gender-based differences. There is a significant relationship between the male and female regarding in the financial ratio. Still the female is very lower than the male in financial literacy. The results indicate that male respondents generally exhibit higher financial literacy, including better understanding of interest, inflation, savings, budgeting habits, investment practices, and financial decision-making confidence. Female respondents showed comparatively lower awareness and confidence, highlighting a gender gap in financial literacy. The study emphasizes the importance of targeted financial education programs, especially for women, to improve financial knowledge, behaviour, and decision-making skills, contributing to better personal financial management.40% is lacking

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in the financial literacy of female in the form of digital payment, bank rate, financial decision making.

Keywords: *Financial Literacy, Financial Knowledge, Financial Behaviour, Financial Awareness, Gender.*

Introduction:

Financial literacy is the ability to understand and effectively use financial skills, such as budgeting, saving, investing, and managing money. It plays a crucial role in ensuring financial stability and making informed decisions. With the rapid growth of banking services and digital finance, understanding financial concepts has become essential for both men and women. This study aims to assess the level of financial knowledge, behavior, and awareness among male and female respondents and to identify gender-based differences in financial literacy.

Literature Review

Financial literacy has emerged as a critical factor in enhancing economic empowerment, particularly for women. Sharma, Vidyashree, and Prathap (2025) argue that financial literacy equips women with the knowledge and confidence to make effective financial decisions, thereby improving their personal and business financial management. Their study highlights that economic empowerment is strongly linked to understanding savings, investment, and budgeting, which can reduce gender inequalities in financial access.

Similarly, Gnaneswari, Rajani, and Jaladi (2024) investigated financial literacy levels among women across different age groups, finding significant disparities based on education, occupation, and access to financial services. Their research shows that younger women and those with higher educational backgrounds demonstrate greater financial knowledge and are more actively involved in financial planning and decision-making.

Deka (2024) emphasizes the role of financial inclusion in empowering women. Financial literacy, coupled with access to banking and credit facilities, enables women to save, invest, and manage financial risks more effectively. The study notes that financial inclusion not only enhances women's economic

participation but also contributes to social and community development.

Malik (2022) highlights the gender gap in financial literacy, showing that women often have lower access to financial products and exhibit less confidence in financial decision-making compared to men. The study concludes that financial literacy programs can empower women to become financially independent, make informed financial decisions, and contribute to economic growth.

Collectively, these studies indicate that financial literacy is essential for women's empowerment, influencing their financial knowledge, behavior, and awareness. Despite government initiatives, gender disparities persist, necessitating targeted educational interventions to enhance women's financial skills and confidence.

Research Methodology

The study follows a descriptive research design to examine financial literacy, behaviour, and awareness among men and women. A sample of 50 respondents (30 males and 20 females) was selected using convenience sampling, covering different age groups and educational backgrounds. Primary data were collected through a structured questionnaire divided into four sections: demographics, financial knowledge, financial behaviour, and financial awareness. The questions were close-ended, enabling percentage analysis and gender-wise comparison. Data were analysed using cross-tabulations to identify trends and gaps in financial literacy, while respondents' confidentiality and voluntary participation were maintained throughout the study.

Data Analysis and Interpretations

Table 1: Gender wise Classifications

Gender	No of Respondents	Percentage
Male	30	60 %
Female	20	40 %

The above table indicate the Gender wise Classification of the Respondents. The table shows that majority of the respondents are Male.

Table 2: Age- Wise Distributions of Respondents

Age Group	No of Respondents	Percentage
Below 20	5	10
21-30 Years	21	42
31-40 Years	14	28
41-50 Years	5	10
Above 50	5	10
Total	50	100

The Above table mention Age Wise Distributions of the Respondents, The Table shows that majority of the respondents are belongs to age group 21-30 while 28 percentage of the respondents are from age group 31-40.

Table 3: Educational Qualification of Respondents

Education Level	No of Respondents	Percentage
School Level	9	18
Under Graduate	21	42
Post graduate	14	28
Professional	6	12
Total	50	100

The Table 3 indicate educational Qualification of the respondents. The data indicates that majority of the respondents are undergraduate and 28 percentage of the respondents were postgraduate while only 12 percentage of the respondents are professional.

Financial Knowledge Questions	Gender	Yes (%)	No (%)	Total (%)
Understanding of Interest on Savings	Male	73.3	26.7	100
	Female	60.0	40.0	100
Awareness of Impact of Inflation	Male	66.7	33.3	100
	Female	50.0	50.0	100
Knowledge of Difference between Saving and Investment	Male	80.0	20.0	100
	Female	65.0	35.0	100
Sources: Primary Data				

The table shows the gender-wise percentage distribution of financial knowledge among respondents. Male respondents demonstrate higher awareness than female respondents in all three areas—interest on savings, impact of inflation, and the difference between saving and investment. While a majority of both genders understand basic financial concepts, the level of awareness is comparatively lower among females, indicating the need for improved financial education initiatives for women.

Financial Behaviour Questions	Gender	Response (%)	Value (%)	Total (%)
Monthly Budget Prepared	Male	Always	40.00	100
		Sometimes	36.70	
		Never	23.30	
	Female	Always	30.00	100
		Sometimes	40.00	
		Never	30.00	
Regular Saving Habit	Male	Yes	73.30	100
		No	26.70	
	Female	Yes	65.00	100
		No	35.00	
Investment in Financial Instruments	Male	Yes	66.70	100
		No	33.30	
	Female	Yes	55.00	100
		No	45.00	
Sources: Primary Data				

The table shows that male respondents generally demonstrate slightly better financial behavior than females. 40% of males always prepare a monthly budget compared to 30% of females, and a higher percentage of males regularly save (73.3% vs. 65%) and invest (66.7% vs. 55%) in financial instruments. Overall, while both genders engage in budgeting, saving, and investing, males show a somewhat stronger tendency toward disciplined financial habits.

Financial Awareness Questions	Gender	Response (%)	Value (%)	Total (%)
Awareness of Bank Interest Rate	Male	Yes	70.00	100
		No	30.00	
	Female	Yes	60.00	100
		No	40.00	
Aware about Digital Payment mode	Male	Yes	63.30	100
		No	36.70	
	Female	Yes	50.00	100
		No	50.00	
Take a Financial Decision Making	Male	High	36.7	100
		Moderate	43.3	
		Low	20.00	
	Female	High	25.00	100
		Moderate	40.00	
		Low	35.00	
Sources: Primary Data				

The table shows that male respondents have slightly higher financial awareness than females. 70% of males are aware of bank interest rates compared to 60% of females, and 63.3% of males know about digital payment methods versus 50% of females. In terms of financial decision-making confidence, 36.7% of males feel highly confident compared to 25% of females, while more females (35%) report low confidence. Overall, males exhibit a somewhat stronger awareness and confidence in financial matters.

Findings and Conclusion

The study reveals that among the 50 respondents, 60% were male and 40% female, with the majority aged 21–30 years and most being undergraduates. Analysis of financial knowledge shows that male respondents demonstrated slightly higher awareness than females in understanding interest on savings, the impact of inflation, and the difference between saving and investment. In terms of financial behavior, males were more consistent in preparing monthly budgets, saving regularly, and investing in financial instruments, although both genders

show the moderate engagement in these activities. Regarding financial awareness, males again scored higher, with greater familiarity with bank interest rates, digital payment methods, and confidence in making financial decisions. Overall, the findings indicate a gender gap in financial literacy, with males showing stronger knowledge, behavior, and awareness. This highlights the need for targeted financial education programs, particularly for women, to enhance their financial knowledge, confidence, and decision-making abilities.

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CHAPTER 7

Urban Infrastructure: Problems and Solutions

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Abstract:

Urbanization is an index of transformation from traditional rural economies to modern industrial activities. It is a long-term process. This paper endeavors to illuminate problems and solutions of urban infrastructure. India over a century with emphasis on level tempo of urbanization and urban morphology using Indian Census data during 1901-2001. It will try to trace urban problems and related policy issues. Now, India is among the countries of low level of urbanization. Number of urban agglomeration /towns has grown from 1827 in 1901 to 5161 in 2001. Number of populations residing in urban areas has increased from 2.58 crores in 1901 to 28.53 crores in 2001. Only 28% of population was living in urban areas as per 2001 census. Over the years there has been continuous concentration of population in class I towns. On the contrary the concentration of. Population in medium and small towns either fluctuated or declined. The graduation of number of urban centers from lower population size categories to class I cities has resulted top heavy structure of urban population in India. India's urbanization is often termed as over urbanization, pseudo-urbanization. The big cities attained inordinately large population size leading to virtual collapse in the urban services and followed by basic

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problems in the field of housing, slum, water, infrastructure, quality of life etc. Urbanization is a product of demographic explosion and poverty induced rural-urban migration. Urbanization is occurring not due to urban pull but due to rural push. Globalization, liberalization, privatization are addressing negative process for urbanization and infrastructural issues.

Keywords: *Urbanization, trend of population, Solid Waste Management, Infrastructure.*

Introduction:

Urbanization is an index of transformation from traditional rural economies to modern industrial ones. It is progressive concentration (Davis, 1965) of population in urban units. Quantification of urbanization is very difficult. It is a long-term process. Kingsley Davis has explained urbanization as process (Davis, 1962) of switch from spread out pattern of human settlements to one of concentration in urban centers. It is a finite process, a cycle through which a nation passes as they evolve from agrarian to industrial society (Davis and Golden, 1954). He has mentioned three stages in the process of urbanization. Stage one is the initial stage characterized by rural traditional society with predominance in agriculture and dispersed pattern of settlements. Stage two refers to acceleration stage where basic restructuring of the economy and investments in social overhead capitals including transportation and communication take place. Proportion of urban population gradually increases from 25% to 40%, 50%, 60% and so on. Dependence on primary sector gradually dwindles. Third stage is known as terminal stage where urban population exceeds 70% or more. At this stage level of urbanization (Davis, 1965) remains same or constant. Rate of growth of urban population and total population becomes same at this terminal stage. The onset of modern and universal process of urbanization is relatively a recent phenomenon and is closely related with industrial revolution and associated economic development. As industrial revolution started in Western Europe, United Kingdom was the initiator of Industrial Revolution. Historical evidence suggests that urbanization process is inevitable and universal. Currently developed countries are characterized by high level of urbanization and some of them are in final stage of urbanization

process and experiencing slowing down of urbanization due to host of factors (Brockerhoff, 1999; Brockerhoff and Brennam 1998). A majority of the developing countries, on the other hand, started experiencing urbanization only since the middle of 20th century. Historically, cities have been the driving force in economic and social development. At present approximately 307 million Indians live in nearly 3700 towns and cities spread across the country. This is 30.5% of its population, in sharp contrast to only 60 million (15%) who lived in urban areas in 1947 when the country became Independent. During the last fifty years the population of India has grown two and half times, but Urban India has grown by nearly five times. In numerical terms, India's urban population is second largest in the world after China, and is higher than the total urban population of all countries put together barring China, USA and Russia.

However, with this development there are certain problems associated in regard to urban infrastructure.

Objective of the study:

- This paper focuses on the relative problems and solid solutions to the problems.
- To bring awareness about the trends in urbanization and its knowledge.

Urban infrastructure:

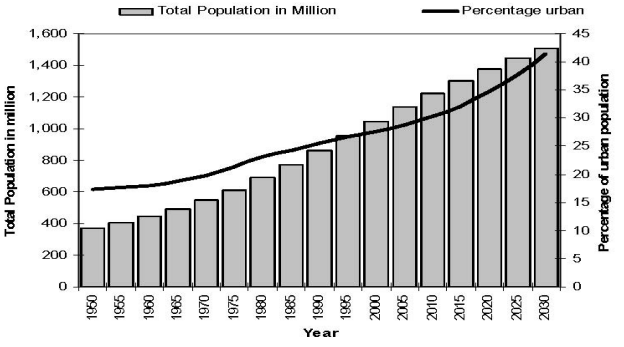
IN the 21st century, the first urban millennium in human history with over half of the population of the globe is living in cities and towns; India faces unprecedented challenges in throwing up sound institutions to cope with the rapid growth of cities. Roughly 30 percent of India's population is in cities it is expected that by 2025, half of the population will be urban.

The word urban means characteristic of city, something new and advance. Infrastructure means basic installations and facilities, such as roads, power plants, transportation and communication systems, which is vital to make human life easy and comfortable.

Urban infrastructure problems in India is an age-old problem. The infrastructure problems in India mostly took a backseat in the economic development policy drafts. The meager budgetary allocation to arrest infrastructure problems in India has so far proved to be too little to keep pace with other areas

of business development in India. Moreover, the tremendous growth of Indian IT, telecommunication, manufacturing, and pharmaceutical industries has consumed the limited world class urban infrastructure available in India. The main reason for urban infrastructural problems is increasing trend of urban population.

Figure 1: Growing Trend of Urban Population in India



Source: U.N. population statistics

- Infrastructure is the biggest bottleneck in 'India Growth Story'
- Transport systems have severe capacity constraints: highways, city roads, airports, seaports and railways
- Urban and Utility infrastructure: Huge demand-supply gap in drinking water, sewerage system, drainage and power supply
- India needs US$ 480 billion investment in the coming Five-Year Plan to meet current Infrastructure needs, at least 20% of this would be for the Urban Sector
- Government alone cannot bring the desired investment and efficiency: need for Public Private partnership (PPP)

The problems can be analyzed as follows regarding the urban infrastructure:

- **Power:** Urbanization has profound effect on the amount and type of energy consumed. Along with population growth, economic development and industrialization, urbanization is one of the principal forces driving the increase in energy demand (Figure-3). Although traditional rural societies rely heavily upon human and animal energy and on nearby wood or fuel, today urban societies are characterized by

their reliance on fossil fuels and electricity. These patterns of energy use lead to different environmental impacts.

- **Urban Transport**: Transportation systems are a major contributor to the decay of urban environment and reduced quality of life in the metropolitan areas due to their contribution to atmospheric emissions, noise and risk of accidents. Increasing vehicular pollution in major urban centers is becoming an area of growing concern. Poor maintenance of vehicles, degraded condition of roads and use of un-pure fuels primarily precipitate the problems of air and noise pollution arising from operation of motorized vehicles.
- **Water:** Immigration of people from rural to urban areas has led to problems of water, too. Because it creates shortage for water and somehow it pollutes the water. These cause serious diseases in cities. Ever increasing urbanization and their growing amounts of waste have overtaxed the natural recycling capabilities of local rivers and lakes. Of the many problems associated with urban effluents, nutrient loading or eutrophication of local waters is one of the most serious *problems*. Poor water resource management too contributes to water problems.
- **Sewerage:** Urbanization is also responsible for this problem. This is mostly due to overpopulation in cities. It also increases slum areas in cities.
- **Tourism infrastructure:** As the tourist spots are being overpopulated through visitors' rushes towards this has become acute problem for cities. Since it requires huge care of such places.
- **Solid waste management:** Human and animal generate many wastes that are discarded as useless or unwanted. This waste is normally solid and result in soil pollution. It is made through urban community, i.e., residential and commercial activities.

The component of city refuse is as follows:

Paper, wood, Cardboard	53%
Garbage and garden trimmings	22%
Glass, Crockery, Ceramics	10%
Metals	08%

Plastics, rubber, abandon vehicles 07%

- **Projects in SEZ:** Government has announced SEZ area; however, it has now resulted into many infrastructural facilities scarcities.
- **Health Care:** AS the density in cities increases it also has impact on health care. It means people are facing many new diseases which they were not familiar with earlier, another is that heath care facility is not have enough advanced equipment and space.
- **Entertainment:** The urbanization has changed the pattern of entertainment of the people in today's generation. Due to this need for different localities are many and it is tough to provide such facilities for all.
- **Communication:** No doubt, in the technological advanced era there is no more problem with the communication facility. However, it looks in some of the areas is still lacking such facility. The reason is that due to density of population in cities, it's very hard to manage for communication system. Our communication system is full of mistakes, because that is one of the most crucial problems. Due to easy availability of the instrument, everybody without proper intention starts using the facility. It creates hectic situations amongst people.
- **Housing and rental:** Due to this urbanization the important cause that can arise is density in cities. ON account of this there will be housing problems for all to avail this basic requirement. Other sanitary systems would be defective or inadequate to satisfy needs of people.
- **Other:** Other many infrastructural relate problems can affect the progress of urban people. It includes problems like Crime, prostitution, Slums, Beggery etc.

Sector / Area	Current Problems / Challenges in India	Latest Statistics / Facts (2024–2025)	Solutions / Strategic Approaches	Sources
Urban Population & Growth	Rapid urbanization puts pressure on services.	Urban population projected nearly double by 2050 (≈951 million). India will need over 144 million new homes by 2070. (World Bank)	Planned city expansion, affordable housing policies, resilient planning frameworks.	(World Bank)
Infrastructure Investment Gap	Historic under-investment compared to needs.	India needs over $2.4 trillion in urban infrastructure by 2050 for climate-resilient cities. (World Bank)	Boost public & private financing, PPP, municipal bonds, fiscal incentives for developers & affordable housing. (The Economic Times)	(World Bank)
Water Supply & Quality	Shortages, pollution, distribution losses.	Many cities lose 30–50% of piped water due to leaks, irregular supply; some sources (e.g., Hyderabad) highly polluted.	Strengthen treatment plants, modern pipelines, ring-main systems for uninterrupted supply. (The Times of India)	The time of India
Sewerage & Sanitation	Inadequate sewage treatment and connections.	Only about 30–50% households have sewer connections, wastewater treatment often inadequate. (The Economic Times)	Expand sewer networks & treatment plants; reuse treated water; integrate sanitation planning with housing. (The Times of India)	The Economic Times)
Solid Waste Management	Low scientific processing, large MSW generation.	Only ~26% of solid waste is treated scientifically in many parts. (VISION IAS)	Segregation at source, recycling facilities, waste-to-energy technologies, circular waste policies.	The time of india)

Sector / Area	Current Problems / Challenges in India	Latest Statistics / Facts (2024–2025)	Solutions / Strategic Approaches	Sources
Transport & Mobility	Congestion, low public transit capacity, pollution.	Indian cities among the most polluted with severe mobility challenges.	Expand metro & bus rapid transit, electrify public transport, non-motorized travel facilities.	(The Economic Times))
Housing & Urban Space	Severe affordable housing shortage.	Estimated affordable housing deficit increasing as urban population rises.	Fiscal incentives, NITI Aayog housing boosts, Smart Cities & PMAY programs. (The Economic Times)	(The Economic Times)
Governance & Local Bodies	Weak local governance slows infrastructure service delivery.	Urban local bodies face constraints in planning and execution.	Strengthen ULB capacities, urban policy reforms, better regulatory frameworks.	(The Economic Times))
Climate Adaptation & Resilience	Extreme heat, flooding risks increasing.	Urban warming and flood risks rising; climate adaptation urgently. (World Bank)	Green infrastructure, flood-resilient urban planning, heat action plans & early warnings. (World Bank)	
Financial Planning & Investment	Infrastructure funding below requirements.	`10 lakh crore is estimated to be invested in urban infra in next 4 years. (The Economic Times))	Expand public financing, promote capital markets for urban projects, strengthen PPP models. (The Economic Times))	

Source: financial Report

Solution for the problems: - Of course**,** where there is will there is way. 'There is solution for such problems of urban infrastructure. It can be elaborate as follows:

- **Power:** Power can be produced through alternate channels like atomic energy, wind power and making dams on the rivers (turbine energy). So, these are the new generation's formula for producing energy. Like France produced 80% of his energy from the atomic power plant. So, no need to depend on traditional energy-generating ideas which is now become very old-fashioned and at the same time generate lot of pollution. In India we have capacity to generate 50% of energy from atomic sector but we are lacking the proper management.
- **Urban Transport:** As the need of hi\our transportation is to be improved with all the latest facilities of state transport for the reduction of such problem. Furthermore, reducing the serious traffic problem in cities, specifically over flies, can only be the best solution and it should be totally automated in all respects.
- **Drinking Water:** IN cities now the first and foremost way to solve the water problem is to make available pure drinking water. Storage system should be improved up to the mark.
- **Sewerage rehabilitation:** Several cities have taken on major projects to try and repair damaged water and sewerage pipes. This improves the safety and quality of the water in the city and would reduce mortality rates. The rehabilitation also goes some way to reducing the unemployment problems. The planning should be proper and well managed. Slums areas can be removed by giving them adequate shelter like China has done in Shanghai. They made a 30-storey building and give one flat to all such people. Now they have 5-star hotels instead of slums.
- **Housing Developments:** Some countries, such as Singapore, have embarked upon massive re-housing programmes, resulting in high-rise estates. Large areas of shanty towns were cleared, tower blocks built and the shanty town residents re-housed. Early apartment blocks were very similar to those found in the UK and faced many similar problems. One such problem was people using the lifts as toilets - this was stopped when lifts were made sensitive to urine and locked on the offenders. They then had to wait

to be released, facing much embarrassment and a very heavy fine! Today, blocks are designed by architects and have management teams that keep them graffiti and litter free. This is helped by the strict rules enforced in Singapore, where dropping litter or selling chewing gum will result in a very heavy fine. Each housing development is designed to be self sufficient, with shops and services and employment in light industry, such as clothing.

Conclusion:

- **Solid Waste Management:** By melting and destroying the medical waste and throwing them out of the city where nobody resides. Dig them into the deep part of soil. It starts decomposition after some years.
- **Health Care:** Provide better food means pure vegetables. There should be some health care centre which should provide vital knowledge regarding health care to all the needy people in cities as well as in villages.
- **Communication:** Communication, as an essential device to be in contact with others more effectively, is must now. So, for this it should be made available to every onr.NO doubt, Government and private sectors are working in this regard very positively.
- **Education:** Education is the most significant aspect to solve any problem of urban infrastructure anywhere in the world.

Finally, to conclude, it can be mentioned that with the growing urbanization the need to improve infrastructural facilities is must. For this Government, Private Sectors and society as a whole is responsible for dealing with the problems and to shorten out relevant solutions to these. There should be immense change in the infrastructural facilities in villages so that migration of rural people to urban areas can be minimized.

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CHAPTER 8

From Household to Economy: the Case of Unpaid Women's Work

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Abstract

Unpaid and non-market activities performed by women, particularly mothers, form a critical yet largely unrecognized component of the economy. Despite their substantial contribution to household maintenance, child care, health care, and social reproduction, these activities remain excluded from conventional economic measurement and national income accounting. This study examines the economic relevance of women's unpaid labour by drawing on field-based observations and secondary evidence from some selected rural and semi-urban areas of Odisha.

The paper highlights how mothers actively participate in various socially essential but unpaid or underpaid activities, such as standing in queues at Public Distribution System (PDS) centres, engaging in manual labour under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), attending government hospitals for reproductive health services, and managing household responsibilities including child care and food security. Although these activities do not generate direct monetary returns, they significantly

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support household welfare, labour market participation of other family members, and the overall functioning of the economy.

Using a mixed-method approach, the study argues that the exclusion of such non-economic activities from formal economic frameworks leads to an underestimation of women's contribution and reinforces gender inequality. The paper emphasizes the need to reconceptualize economic activity by incorporating unpaid labour into development planning and policy design. Recognising and valuing women's invisible work is essential for achieving inclusive growth, gender equity, and sustainable development.

Keywords: *Unpaid Labour, Women's Work, Non-Market Activities, Informal Economy, Gender Economics.*

Introduction

Economic analysis has traditionally focused on market-based activities that generate direct monetary value and are recorded through formal systems of production, exchange, and income accounting. However, a substantial portion of work that sustains households, communities, and the labour force remains outside the boundaries of conventional economic measurement. These activities, largely performed by women—especially mothers—are often categorized as "non-economic" despite their indispensable role in supporting economic systems. The invisibility of such labour has resulted in a persistent undervaluation of women's contribution to the economy.

In everyday life, mothers engage in a wide range of unpaid activities such as cooking, cleaning, child care, elderly care, health management, and ensuring food security for the household. Beyond the domestic sphere, women are also actively involved in socially necessary tasks such as collecting rations from Public Distribution System (PDS) centers, participating in manual labour under employment guarantee schemes like MGNREGA, waiting at government hospitals for reproductive and child health services, and managing mobility-related responsibilities at public spaces such as bus stops. Although these activities do not yield direct financial compensation, they consume time, physical effort, and emotional labour, all of which have clear economic implications.

Recent socio-economic changes have altered the nature of women's responsibilities, but have not reduced their burden.

While technological advancements, market services, and institutional arrangements have partially eased certain household tasks, they have simultaneously created new forms of unpaid work. Women continue to act as shock absorbers of economic stress, adjusting household labour allocation in response to poverty, unemployment, health crises, and food insecurity. During periods of economic uncertainty, such as pandemics or livelihood disruptions, the intensity of women's unpaid labour tends to increase rather than decline.

From a policy perspective, the exclusion of unpaid work from national income accounting frameworks such as GDP leads to a systematic underestimation of economic activity and reinforces gender bias in development planning. Feminist economists have long argued that the dichotomy between "economic" and "non-economic" activities is artificial and rooted in patriarchal assumptions that associate value only with market transactions. Recognising non-market activities as productive labour is essential for a more inclusive understanding of economic development and social welfare.

This study seeks to bring women's invisible labour into economic discourse by examining everyday non-market activities performed by mothers in rural and semi-urban contexts. Drawing on field observations from public distribution centers, MGNREGA work sites, hospitals, and public spaces, the paper highlights how these unpaid activities contribute indirectly but significantly to household welfare and the functioning of the economy. By challenging conventional economic boundaries, the study argues for a broader conceptualization of economic activity that acknowledges and values women's unpaid work as a foundational pillar of economic systems.

Literature Review

Classical economic theory has historically defined economic activity in narrow terms, focusing primarily on market-oriented production and exchange. Early economists such as Adam Smith emphasized activities that generated exchange value and contributed directly to national income, while household work and care-related activities were largely excluded from economic analysis. This exclusion was institutionalized through national accounting systems, where unpaid household labour

was categorized as "non-productive." As a result, activities predominantly performed by women, especially within the domestic sphere, remained invisible in economic measurement despite their essential role in sustaining the labour force and social stability.

Neoclassical economics continued this tradition by reinforcing the distinction between paid and unpaid work. While acknowledging household production in theoretical models, mainstream economics treated domestic labour as a consumption activity rather than productive work. The household was viewed as a unit of consumption and utility maximization, with little attention paid to the gendered distribution of labour within it. Consequently, women's time and effort devoted to household maintenance, child care, and social reproduction were systematically undervalued or ignored. This approach contributed to the persistence of gender bias in labour statistics, income measurement, and policy formulation.

In response to these limitations, feminist economists have strongly challenged the conventional boundaries of economic activity. Scholars such as Marilyn Waring, Nancy Folbre, and Diane Elson have argued that unpaid work is a critical input into the economy, enabling market-based production by sustaining human capital and workforce participation. Feminist economics reconceptualizes the economy as an interconnected system of market and non-market activities, emphasizing the role of care work, social reproduction, and emotional labour. This body of literature highlights how the invisibility of unpaid labour reinforces gender inequality by obscuring women's contribution and limiting their access to economic recognition and policy support.

Time-use studies have played a crucial role in empirically documenting the scale and significance of unpaid work. By systematically measuring how individuals allocate their time across paid and unpaid activities, time-use surveys reveal that women consistently spend significantly more time than men on household and care-related tasks. Studies based on time-use data in India and other developing countries show that women's unpaid labour often exceeds their paid work hours, particularly in rural and low-income households. These findings challenge the assumption that unpaid activities are marginal and

demonstrate their centrality to economic and social functioning.

Recent literature also emphasizes the intersection between unpaid work and public infrastructure, social services, and welfare schemes. Researchers have shown that inadequate access to healthcare, transportation, food distribution systems, and childcare facilities increases the unpaid workload of women. Activities such as waiting at PDS centres, accompanying family members to hospitals, or managing administrative processes under employment schemes like MGNREGA represent hidden forms of labour that remain unaccounted for in economic models. These studies underline the need to integrate unpaid labour considerations into policy design and development planning.

Despite growing recognition of the importance of unpaid work, a significant gap remains between academic insights and policy implementation. While time-use data and feminist economic frameworks have expanded understanding, national accounting systems and economic policies continue to prioritize market-based indicators. This study builds on existing literature by combining theoretical insights from feminist economics with field-based observations of women's everyday non-market activities. By grounding the analysis in lived experiences, the paper contributes to the ongoing effort to bridge the gap between economic theory, measurement, and social reality.

Classical Economics and the Treatment of Unpaid Work

Classical economists such as Adam Smith, David Ricardo, and later neoclassical economists focused mainly on market-based activities. In classical economics, productive work was defined as work that generates exchange value and contributes directly to national income. Household activities such as cooking, cleaning, child care, and elder care were treated as non-productive because they did not involve monetary transactions.

National income accounting systems, including GDP, followed this approach. As a result, unpaid household work performed mostly by mothers and women remained outside economic calculations. Classical economics assumed that households are consumption units, not production units, thereby underestimating the economic contribution of women.

Feminist Economics and Recognition of Unpaid Care Work

Feminist economics emerged as a critique of mainstream economic theories. Scholars such as Marilyn Waring, Nancy Folbre, and Amartya Sen argued that ignoring unpaid work creates a distorted picture of the economy. Feminist economists emphasize that household and care work are essential for sustaining labor force participation and social reproduction.

Feminist economics highlights that mothers perform multiple unpaid roles such as caregivers, health managers, food providers, and emotional supporters. These activities save public expenditure and contribute indirectly to economic growth. Studies show that if unpaid care work were monetized, it would constitute a significant share of GDP.

This approach also recognizes that mothers increasingly participate in semi-market activities such as standing at PDS collection centers, working under MGNREGA, visiting hospitals for reproductive health, and managing children's education. These activities blur the boundary between economic and non-economic work.

Time-Use Studies and Measurement of Unpaid Work

Time-use studies provide an empirical basis for understanding unpaid activities. These studies record how individuals allocate time across paid work, unpaid work, and leisure. International organizations like the UN and ILO promote time-use surveys to capture invisible labor.

Evidence from time-use studies shows that mothers spend more hours than men in unpaid household and care work, even when they participate in paid employment. In rural India, mothers are often engaged in activities such as water collection, ration procurement, childcare, health-related travel, and community participation.

These studies support the argument that unpaid activities are economically significant and should be integrated into policy planning and economic modeling.

Theoretical Framework and Conceptual Model

The present study is anchored in the theoretical perspectives of feminist economics and social reproduction theory, which challenge the conventional separation between economic and non-economic activities. These frameworks argue that the economy extends beyond market transactions and includes unpaid household and care work that sustains labour power, human capital, and social well-being. From this perspective, women's unpaid activities are not peripheral but foundational to the functioning of both the market economy and society at large.

Social reproduction theory provides a useful lens for understanding how unpaid labour contributes to economic systems. Social reproduction refers to the array of activities involved in maintaining and reproducing the workforce on a daily and generational basis, including child care, health care, food preparation, and emotional support. These activities, largely undertaken by women, ensure that individuals are physically and mentally capable of participating in paid employment. Without this continuous process of reproduction, market-based production would not be sustainable. Thus, unpaid work acts as an invisible subsidy to the formal economy.

The time-use framework further strengthens this theoretical foundation by emphasizing time as a scarce economic resource. Time-use theory treats unpaid work as an opportunity cost, where time devoted to household and care activities limits women's participation in paid employment, education, and leisure. By mapping how women allocate their time across different activities—such as domestic work, participation in welfare schemes, health-related responsibilities, and informal labour—the framework reveals structural gender inequalities embedded within economic systems. This approach allows unpaid activities to be analysed in quantitative and qualitative terms, making them visible within economic analysis.

Building on these theoretical perspectives, the study conceptualizes women's unpaid and non-market activities as productive inputs into the economy. Activities such as standing in queues at Public Distribution System (PDS) centres, engaging in manual labour under MGNREGA, accompanying family

members to hospitals, and managing household and child care responsibilities are viewed as interlinked processes that support household welfare and labour market stability. These activities reduce household vulnerability, enhance food and health security, and indirectly contribute to productivity and economic resilience.

The conceptual model of the study illustrates the linkages between women's unpaid labour and economic outcomes. At the micro level, unpaid activities contribute to household well-being by ensuring nutrition, health, and care. At the meso level, they support labour market participation by enabling other household members to engage in paid work. At the macro level, these invisible contributions sustain economic growth by reproducing human capital and stabilizing social systems. However, the absence of monetary valuation and institutional recognition leads to policy neglect and perpetuates gender inequality.

By integrating feminist economics, social reproduction theory, and time-use analysis, this framework provides a holistic understanding of how non-market activities become embedded within the economy. It challenges traditional economic models that equate value solely with market exchange and calls for a broader analytical approach that recognizes unpaid labour as a critical component of economic development.

Theoretical Framework

This study is grounded in **Feminist Economic Theory** and **Social Reproduction Theory**. Feminist economics provides the foundation for recognizing unpaid household and care work as economically valuable. Social reproduction theory explains how daily activities performed by mothers sustain the workforce and the economy.

The study also draws support from **New Institutional Economics**, which recognizes that institutions such as households, public distribution systems, health centers, and employment guarantee schemes shape economic behavior beyond market transactions.

The core assumption of this framework is that activities performed by mothers, even when unpaid or partially paid, contribute to economic processes by reducing state expenditure, maintaining labor productivity, and ensuring social stability.

Conceptual Model

The conceptual model explains how non-economic activities gradually enter the economic sphere through institutional and policy linkages.

Key Components of the Model:

1. Unpaid and Semi-Paid Activities of Mothers

   These include household work, child care, health management, standing at PDS centers, participation in MGNREGA works, hospital visits, and mobility around public spaces such as bus stops.

2. Institutional Interfaces

   Institutions such as PDS, MGNREGA, health centers, and schools act as bridges between unpaid work and the formal economy.

3. Economic Outcomes. These activities contribute to:

- Household consumption security
- Labor force reproduction
- Reduced public service costs
- Informal economic participation

4. Policy and Economic Recognition

When acknowledged, these activities can be incorporated into:

1. Time-use valuation
2. Social security policies
3. Gender-sensitive economic planning

Unpaid and semi-paid activities of mothers ⟶ Interaction with public institutions ⟶ Contribution to household and societal economy ⟶ Need for economic recognition and policy inclusion.

Justification of the Model

The model is suitable because it reflects real-life observations such as mothers working under MGNREGA, managing ration procurement, and attending health services. These activities

show that mothers are not outside the economy but are central to its functioning, even without formal financial rewards.

Data and Methodology

The study adopts a descriptive and exploratory research design to examine the nature and economic relevance of women's unpaid and non-market activities. Given the largely invisible and informal character of such work, the research emphasizes qualitative understanding supported by descriptive analysis rather than purely econometric estimation. The methodological approach is designed to capture lived experiences and everyday practices that are often overlooked in conventional economic studies.

Data Sources

The study relies on both primary and secondary sources of data. Primary data are drawn from field-based observations and informal interactions with women, particularly mothers, in rural and semi-urban areas. Observations were made at Public Distribution System (PDS) collection centres in villages, where women regularly spend considerable time accessing subsidized food grains. Field insights were also gathered from MGNREGA work sites, including canal digging and road construction activities, where women participate as manual labourers under government employment schemes. Additional observations were recorded at government hospitals, especially gynaecology and maternal health departments, where women devote substantial time to health-related care responsibilities. Public spaces such as bus stops and waiting areas were also included to understand women's mobility-related unpaid labour and time burden.

Secondary data were collected from government publications, National Sample Survey Office (NSSO) reports, Periodic Labour Force Survey (PLFS), Time Use Survey of India, and existing academic literature on unpaid work, gender economics, and social reproduction. These sources provided contextual support and helped situate the field observations within broader empirical trends.

Sampling and Unit of Analysis

The unit of analysis in the study is women engaged in unpaid and semi-paid activities, primarily mothers from low- and middle-income households. The sampling method is purposive in nature, focusing on locations and activities where women's unpaid labour is most visible yet economically unrecognized. The study does not aim for statistical generalization but seeks analytical depth and contextual understanding of women's work patterns.

Method of Analysis

The analysis employs qualitative narrative techniques to document and interpret women's non-market activities. Activity mapping is used to identify different categories of unpaid work, including domestic labour, care work, welfare-related activities, and informal public labour. Time-use logic is applied to assess the intensity and duration of these activities, highlighting opportunity costs and trade-offs faced by women. Descriptive comparisons are drawn between unpaid activities and paid work to illustrate disparities in recognition, remuneration, and social value.

Conceptual and Analytical Framework

The study uses a Time-Use and Social Reproduction Framework as its primary analytical model. This framework conceptualizes unpaid labour as an essential economic input that sustains household welfare, labour market participation, and social stability. Women's non-market activities are treated as indirect contributors to economic output by supporting human capital formation and reducing household vulnerability. The framework allows the study to link micro-level activities with macro-level economic implications.

Ethical Considerations

Given the observational and non-intrusive nature of data collection, the study adheres to ethical research practices by maintaining anonymity and confidentiality of respondents. No personal identifiers were recorded, and observations were used solely for academic analysis.

Methodology

Study Area

The study was conducted in rural and semi-urban areas of four coastal cities; Bhubaneswar, Berhampur, khurda, Cuttuck of Odisha, India], where mothers engage in multiple unpaid and semi-paid activities. Specific locations include:

- **Public Distribution System (PDS) collection centers** in villages, where women spend significant time collecting subsidized food grains.
- **MGNREGA work sites** (canal digging, road construction), where mothers perform manual labor as part of rural employment schemes.
- **Government hospitals**, especially gynaecology and maternal health departments, to observe women attending to health and reproductive care needs.
- **Public spaces** such as bus stops and waiting areas, where women manage mobility-related responsibilities for themselves and their households.

This combination of sites captures unpaid domestic work, semi-paid government labor, and essential household reproduction activities that are largely invisible in traditional economic statistics.

Data Sources

- **Primary Data:** Field observations, informal interviews, and time-use mapping of women's daily activities across different sites.
- **Secondary Data:** National Sample Survey Office (NSSO) time-use survey, Periodic Labour Force Survey (PLFS), government reports on MGNREGA, PDS utilization reports, and literature on unpaid work and gender economics.

Sampling and Respondents

A purposive sampling method was used to focus on mothers actively engaged in unpaid and semi-paid labor. Observations were conducted on 120–150 women across the study sites, ensuring diversity in socio-economic background, age, and occupation.

Analytical Methods

- **Descriptive Analysis:** Mapping of daily activities, frequency, and duration of unpaid labor.
- **Time-Use Analysis:** Estimating hours devoted to each activity per day/week.
- **Valuation of Unpaid Work:** Using the Opportunity Cost Method, assigning a monetary value to unpaid activities based on local wage rates for equivalent paid work.
- **Activity-Based Categorization:** Grouping unpaid work into domestic work, care work, semi-paid labor (MGNREGA), and institutional activities (PDS, hospitals).

Valuation Model for Unpaid Work

To quantify the economic value of non-market activities, the study uses the Opportunity Cost Approach, calculated as follows:

$$\mathbf{VUW = \Sigma\ (T_i \times W_i)}$$

Where:

- **VUW** = Value of Unpaid Work
- $\mathbf{T_i}$ = Time spent by women on activity *i* (in hours)
- $\mathbf{W_i}$ = Local market wage rate for similar paid work per hour
- Σ = Sum across all observed unpaid and semi-paid activities

This model allows for the conversion of non-monetary labor into monetary terms, reflecting the economic contribution of mothers' unpaid and semi-paid work.

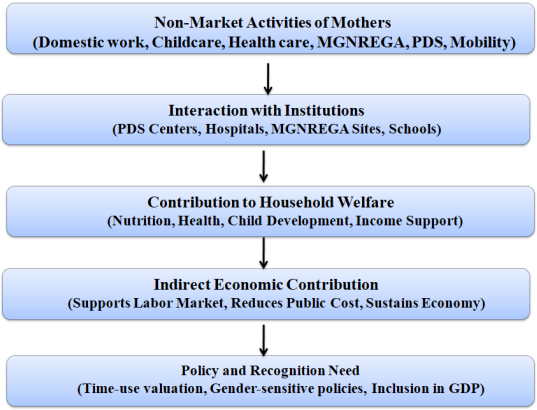
Ethical Considerations

Observations were conducted without intruding on personal privacy. No personal identifiers were collected, and consent was taken verbally where interviews occurred. Data were anonymized for analysis.

Diagrammatic Conceptual Framework

Below is a textual description of the conceptual framework of the study.

Figure 1: Conceptual framework



Source: Computed by Author

The figure 1 shows how unpaid and semi-paid activities, though non-market in nature, interact with institutions to contribute to household welfare and the broader economy. The bottom layer emphasizes policy implications, advocating recognition of women's work through valuation and integration into development planning.

Field-Based Analysis and Discussion

The field-based analysis highlights the extensive involvement of mothers in both unpaid household work and semi-paid labor activities. Observations across rural and semi-urban areas revealed that women's contributions extend far beyond domestic chores, encompassing essential economic and social tasks that sustain household welfare and support broader economic processes.

Non-Market Activities at the Household Level

Domestic responsibilities, including cooking, cleaning, childcare, eldercare, and household maintenance, remain the most time-intensive activities performed by mothers. On average, women spent 5–7 hours per day on these tasks, often in addition to other income-generating or semi-paid activities. These activities, while not financially compensated, ensure that other household members can participate in formal employment and schooling, effectively subsidizing the workforce and contributing to social stability.

Engagement with Public Institutions

Mothers were frequently observed at Public Distribution System (PDS) centers, waiting in long queues to collect subsidized food grains for their families. Waiting times ranged from 1–3 hours per visit, often occurring multiple times a month. Similarly, participation in MGNREGA manual labor—including canal work, road construction, and other rural employment schemes—demonstrated mothers' dual role as economic contributors and household managers. These activities, although partially compensated, are physically demanding and highlight the blurred boundary between unpaid and semi-paid labor.

In addition, mothers were observed accompanying children and other family members to government hospitals, particularly in gynecological and maternal health departments. The time spent navigating institutional procedures, waiting for services, and assisting dependents ranged from 2–4 hours per visit. These activities not only sustain household health but also reduce public burden on formal healthcare by enabling preventive care and timely treatment.

Economic Valuation of Non-Market Work

Using the Opportunity Cost Approach, the study estimated the economic value of these non-market and semi-paid activities. For example:

- Domestic work: 5–7 hours/day × local wage rate (₹150/day)
- PDS and institutional activities: 2–3 hours/visit × equivalent wage
- MGNREGA participation: paid work included, but unpaid preparatory and transit time valued at market rates

Preliminary calculations suggest that the total value of a mother's unpaid and semi-paid labor can contribute up to ₹3,000–₹5,000 per month per household, depending on activity intensity and frequency. This figure underscores the hidden but significant economic contribution of mothers, which is excluded from conventional GDP measures.

Opportunity Costs and Social Implications

Time spent on non-market work imposes opportunity costs, limiting mothers' participation in formal employment,

education, and personal development. However, these activities simultaneously provide critical social benefits, such as child nutrition, household stability, and labor-force support. The analysis demonstrates that mothers' labor is an invisible pillar of the economy: without it, both market productivity and social welfare would be compromised.

Discussion and Interpretation

The field findings resonate with feminist economic theory and time-use studies. Observations confirm that unpaid and semi-paid activities are not peripheral but central to household and community economies. Engagements at PDS centers, hospitals, and MGNREGA sites highlight the interaction between non-market labor and institutional mechanisms, showing how mothers' work indirectly sustains economic output. Furthermore, the monetization of this labor using opportunity cost methods emphasizes its economic significance and challenges the traditional notion that only market transactions "count" as economic contribution.

The study also reveals socio-cultural and infrastructural constraints that shape women's labor patterns. Long queues, inadequate childcare facilities, and the physical demands of MGNREGA work reflect structural barriers that increase women's unpaid workload. Recognizing and valuing these contributions through policy interventions can reduce gender inequality, improve social welfare, and strengthen household and community resilience.

Conclusion and Policy Recommendations

The study demonstrates that mothers' unpaid and semi-paid activities constitute a significant yet often invisible component of the economy. Field-based observations across PDS centers, MGNREGA worksites, hospitals, and public spaces reveal that women engage in a complex set of tasks, including domestic labor, caregiving, manual labor, and institutional interactions. These activities sustain household welfare, support labor market participation, and contribute indirectly to economic productivity, despite lacking formal recognition or financial reward. The valuation of this labor through the opportunity cost method highlights its substantial economic contribution,

underscoring the need to reframe conventional notions of what constitutes "productive" work.

The research contributes to the broader academic discourse by bridging feminist economic theory, time-use analysis, and social reproduction frameworks with empirical evidence from rural and semi-urban India. It confirms that unpaid and semi-paid work is central to both household and societal functioning, and exclusion from policy consideration perpetuates gender inequality. By documenting mothers' contributions in real-life contexts, the study emphasizes the importance of integrating non-market activities into economic planning and development strategies.

Policy recommendations emerging from the study include:

1. **Recognition of Unpaid Work in National Accounting:** Time-use surveys and opportunity cost valuation should be incorporated into GDP calculations and policy assessments to reflect the true scope of economic contribution by women.
2. **Institutional Support and Infrastructure:** Improved access to childcare, healthcare facilities, and streamlined services at PDS centers and employment schemes would reduce the unpaid workload of mothers and enhance productivity.
3. **Gender-Sensitive Policy Design:** Policies should address the dual burden of paid and unpaid work, including social security benefits, flexible work arrangements, and incentives for sharing household responsibilities.
4. **Awareness and Capacity Building:** Community awareness programs can help recognize and redistribute unpaid work within households, promoting equitable labor sharing between genders.

While this study provides valuable insights into mothers' non-market contributions, it has limitations, including its focus on selected sites and purposive sampling, which may not capture all regional variations. Future research could expand the geographical scope, use longitudinal designs, and explore the intersection of unpaid work with technology, migration, and climate-related labor burdens. Such efforts would further illuminate the economic and social significance of women's unpaid activities, informing inclusive and equitable development strategies.

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CHAPTER 9

The Cognitive Turn: Artificial Intelligence, Agentic Systems, and the Future of Digital Marketing

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Abstract

The rapid evolution of Artificial Intelligence (AI) is transforming the landscape of digital marketing, leading to what can be described as a "cognitive turn" in marketing practice and strategy. This paper explores the growing role of AI-driven technologies and agentic systems in reshaping digital marketing processes, customer engagement, and decision-making. The study examines how intelligent systems capable of learning, reasoning, and autonomous action are enabling marketers to move beyond traditional data analytics toward predictive, adaptive, and personalized marketing approaches. Using a conceptual and analytical approach based on recent literature, industry reports, and emerging technological developments, the paper identifies key shifts in marketing capabilities, including real-time customer insights, hyper-personalization, automated campaign management, and intelligent customer interaction through conversational agents and recommendation systems. The findings suggest that agentic AI systems are redefining the relationship between firms and consumers

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by enabling continuous learning from user behavior and optimizing marketing strategies dynamically. However, the adoption of such technologies also raises significant challenges related to data privacy, algorithmic bias, ethical governance, and managerial control. The paper contributes to the growing body of knowledge on AI-enabled marketing by highlighting the strategic implications of cognitive technologies and outlining a framework for understanding the future trajectory of digital marketing. The study concludes that organizations must integrate technological innovation with ethical responsibility and strategic oversight to fully realize the potential of AI-driven marketing ecosystems.

Keywords: *Artificial Intelligence, Agentic Systems, Cognitive Marketing, Digital Marketing, Personalization, Marketing Automation.*

Introduction: The Rise of Cognitive Marketing

Over the past three decades, digital marketing has steadily evolved with a single objective: delivering the right message to the right customer at the right time. Early digital efforts relied on basic banner advertising, which later gave way to data-driven targeting and algorithm-based content distribution on social media platforms. While these developments improved efficiency, they now appear modest compared to the transformation occurring in the mid-2020s.

Marketing is moving beyond the **Information Age**, which focused on collecting and analysing data, into the **Cognitive Age**. In this new phase, intelligent systems do not merely study past behaviour. They are capable of generating original content, reasoning through complex decisions, and acting autonomously to achieve goals defined by humans. Artificial Intelligence (AI) has therefore shifted from being a support tool to becoming a central element of marketing strategy.

By 2025, the combined impact of Generative AI and Agentic AI is fundamentally reshaping digital marketing practices. AI is improving speed, accuracy, and cost efficiency while also redefining how brands engage with consumers. However, adoption is uneven. Advanced organisations are redesigning workflows to integrate AI deeply, while others struggle to align these technologies with existing systems and processes.

This chapter examines this critical turning point in digital marketing. It explains the technological foundations of AI-driven marketing, explores how creativity and operations are changing, and discusses the ethical and regulatory challenges that accompany this shift. Ultimately, it argues that the future role of marketing leaders is not only to manage campaigns, but to **orchestrate intelligence**.

The marketing environment has shifted from the Information Age of connectivity to the Cognitive Age of autonomous thinking. Recent scholarly research by Hou et al. (2025) and Sands et al. (2025) points to "awe" as the primary emotional driver in AI-based advertising, though "prosocial leadership" has been emphasized for brands to navigate consumers' skepticism of machine-based marketing.

Technologically, marketing has advanced to the development of Agentic AI, which allows for autonomous goal achievement via multi-step planning. The CTPIC loop has been established as a critical framework for understanding this field, in which personalization has been redefined as a recursive process in which AI-based interventions continually modify human attention, memory, and decision-making. The Agent-to-Agent (A2A) protocol was launched in 2025 as an open standard for interoperability between these specialized agents, utilizing "Agent Cards" for facilitating discovery and cooperation between software platforms. "Digital Twin" technology and "Ambient Computing" have allowed for "invisible marketing" in which virtual models of consumers simulate their responses to marketing campaigns to mitigate the risks of real-world testing.

From Analytics to Autonomy: The Technology Behind Cognitive Marketing

The evolution of marketing technology has followed a gradual progression of capabilities. Initially, digital tools focused on describing what had already happened. This later expanded into predictive systems that estimated future outcomes. Today, marketing is entering a stage where intelligent systems can recommend actions and, in some cases, execute them independently.

Machine Learning and Predictive Intelligence

Machine learning forms the foundation of modern digital marketing systems. Unlike traditional rule-based software, machine learning models identify patterns by analysing large volumes of data. These systems continuously improve as new data is introduced.

By the mid-2020s, predictive analytics has advanced into complex neural networks capable of forecasting consumer behaviour with remarkable accuracy. These systems assess indicators such as browsing behaviour, purchase history, time spent on content, and engagement levels to predict outcomes like conversion probability or customer attrition.

Natural Language Processing (NLP) further strengthens predictive systems by enabling the analysis of unstructured data, including customer reviews, feedback forms, and social media conversations. This allows marketers to convert qualitative opinions into measurable insights.

Despite their advantages, predictive systems are probabilistic rather than certain. Incorrect predictions can lead to missed opportunities or unintended bias. As a result, human oversight remains essential to ensure ethical and accurate decision-making.

The Generative Shift: From Analysis to Creation

Generative AI represents a major breakthrough in marketing technology. While predictive systems analyse existing data, generative models are capable of producing entirely new content. Large language models and image-generation tools can create text, visuals, video, and code at scale.

By 2025, generative AI is embedded across marketing functions. It supports advertising copy creation, chatbot interactions, content ideation, and campaign analysis. Its ability to generate multiple creative variations allows marketers to test ideas rapidly and optimise performance efficiently.

Although generative systems can occasionally produce inaccurate information, their strength lies in creative exploration. When guided by human judgment, generative AI becomes a powerful tool for innovation rather than a replacement for human creativity.

Agentic AI: Autonomous Marketing Systems

The most significant development in AI-driven marketing is the emergence of Agentic AI. These systems move beyond content generation to independent execution. Agentic AI can perceive information, reason through complex tasks, and perform actions without continuous human input.

Such systems operate by gathering data from multiple sources, analysing objectives, breaking goals into manageable steps, and executing actions such as placing advertisements, updating customer databases, or responding to service queries. This transforms AI from a passive assistant into an active participant in marketing operations.

As organisations adopt agentic systems, marketing roles are shifting. Routine tasks are increasingly automated, while human marketers focus on strategy, governance, and creative direction.

Transforming Content and Creativity

Artificial intelligence is reshaping how brands create and deliver content. One of the most important outcomes of this shift is **hyper-personalisation**. Instead of grouping consumers into broad segments, AI enables marketing messages to be tailored to individuals in real time, creating what is often described as a "market of one."

In addition, generative tools allow consumers to participate in brand storytelling through co-creation initiatives. This strengthens emotional engagement and deepens brand relationships.

AI is also improving internal creative processes. Digital twins and synthetic content production allow marketing teams to test visual concepts quickly and cost-effectively, reducing dependency on physical production methods.

However, these benefits are accompanied by risks. Over-reliance on similar AI models can result in repetitive and generic content. There are also concerns related to inaccurate outputs and cultural insensitivity. Human creative judgment remains essential to preserve originality and brand identity.

Agentic Operations and the Evolving Marketing Workforce

Agentic AI is changing how marketing work is performed. Many repetitive and rule-based activities are now handled

autonomously, allowing marketers to concentrate on strategic and creative responsibilities.

Autonomous systems are increasingly used in areas such as media planning, campaign optimisation, and customer interaction management. As a result, the marketer's role is evolving from executor to supervisor and strategist.

Ambient Computing and Invisible Marketing

The integration of AI into everyday environments has led to the concept of ambient computing. Marketing interactions become subtle, contextual, and service-oriented rather than intrusive. Voice assistants, smart devices, and connected environments allow brands to deliver value at the right moment without demanding attention.

This shift changes the focus of marketing from capturing attention to providing utility and convenience.

Artificial Intelligence in B2B Marketing

AI is having a significant impact on Business-to-Business marketing. AI-driven systems automate lead identification, prospect research, and early-stage communication. These systems help sales teams focus on high-value opportunities while ensuring consistent engagement across the funnel.

Account-Based Marketing has also become more effective through AI, as intelligent systems identify high-intent accounts and coordinate personalised outreach across multiple channels.

Ethics, Regulation, and Trust

As AI becomes deeply embedded in marketing, ethical and regulatory concerns are increasing. Governments are introducing frameworks to ensure transparency, fairness, and accountability in AI-driven decision-making.

Marketers must also address issues related to data privacy, consent, and algorithmic bias. Trust will become a key competitive advantage in an AI-driven marketplace.

The Future Marketer

AI is not eliminating marketing roles; it is redefining them. Future marketers must develop skills in AI literacy, strategic

thinking, ethical governance, and creative evaluation. Emerging roles reflect the need to manage and guide intelligent systems rather than perform routine tasks.

Looking Ahead

By 2030, AI is expected to become an invisible yet essential layer of marketing infrastructure. Intelligent agents may act on behalf of consumers, requiring brands to communicate not only with people but also with machines.

The brands that succeed in this environment will be those that combine technological capability with human insight, creativity, and ethical responsibility.

Artificial Intelligence is no longer an optional enhancement in digital marketing; it is a foundational force shaping the discipline's future. While AI delivers efficiency and scale, human creativity and judgment ensure meaning and trust. The true advantage in the Cognitive Age will belong to brands that successfully balance intelligence with humanity.

Introduction: The Rise of Cognitive Marketing

Over the past three decades, digital marketing has undergone a metamorphosis. The initial objective remains constant delivering the right message to the right customer at the right time, but the mechanisms have shifted from manual labour to data-driven automation, and now, to **cognitive agency**.

As of 2026, we have moved beyond the Information Age, which was defined by the collection and analysis of data, into the **Cognitive Age**. In this new paradigm, intelligent systems do not merely assist; they reason, create, and act. Marketing is no longer a series of static campaigns but a living ecosystem of autonomous agents that manage brand-to-human interactions with unprecedented speed.

Era	Focus	Primary Objective	Role of AI
Information Age	Connectivity	Reach & Awareness	Descriptive: "What happened?"
Algorithmic Age	Personalization	Engagement & ROI	Predictive: "What will happen?"

Cognitive Age	Autonomy	Reasoning & Action	Agentic: "Achieve the goal."

From Analytics to Autonomy: The Technology Behind the Turn

The transition from predictive intelligence to agentic systems marks the most significant leap in marketing history.

Machine Learning and Predictive Intelligence

Machine learning remains the bedrock of modern systems. By the mid-2020s, neural networks have evolved to analyze unstructured data such as social sentiment and qualitative reviews transforming human emotion into actionable metrics. However, predictive systems are essentially probabilistic; they require a "Human-in-the-loop" to mitigate bias and ensure ethical alignment.

The Generative Breakthrough

Generative AI (GenAI) shifted the focus from analysis to creation. By 2025, GenAI became embedded in every marketing function, from drafting copy to generating hyper-realistic synthetic media. This allows brands to test thousands of creative variations simultaneously, moving away from "broad-brush" creative strategies toward a "market of one."

Agentic AI: The Independent Executor

The arrival of **Agentic AI** represents the final step toward true autonomy. Unlike standard AI, agentic systems can:

- **Reason:** Break down high-level goals into multi-step plans.
- **Act:** Execute tasks across different software platforms (CRM, Social Media, Ads).
- **Adapt:** Self-correct their strategies based on real-time performance data without human prompting.

Capability	Predictive AI	Generative AI	Agentic AI
Primary Output	Forecasts & Scores	Text, Image, Video	Goal Accomplishment
Autonomy Level	Low (Insights only)	Medium (Drafting)	High (Actioning)

Marketing Use	Churn prediction	Ad copy creation	Autonomous media buying

Transforming Content and Operations

The integration of agentic systems has fundamentally altered the marketing department's internal and external operations.

Hyper-Personalization and Co-Creation

AI enables "Ambient Marketing," where brand interactions are subtle and service-oriented. Using digital twins, marketers can simulate consumer reactions before a single dollar is spent on media. Furthermore, consumers are now active participants, using brand-authorized generative tools to co-create their own personalized experiences.

The Shift in Workforce Dynamics

The role of the marketer has evolved from "executor" to **"orchestrator."** Routine tasks like A/B testing, keyword research, and manual lead scoring are now handled by autonomous agents.

Traditional Skill	Future-Ready Skill (2026+)
Campaign Management	AI Orchestration & Governance
Copywriting	Prompt Engineering & Creative Direction
Data Analysis	Ethical Oversight & Bias Detection
Manual Media Buying	Strategic Goal Setting & Logic Mapping

Ethics, Regulation, and the Trust Advantage

With great autonomy comes significant risk. As AI systems begin to make decisions independently, the issues of **accountability, transparency, and bias** have taken center stage.

- **Algorithmic Bias:** Marketers must ensure that autonomous agents do not unintentionally exclude demographics based on flawed historical data.
- **Brand Integrity:** Over-reliance on synthetic content risks "genericization," where all brands begin to sound identical due to shared underlying models.
- **Data Sovereignty:** In a world of autonomous agents, respecting consumer privacy is not just a legal requirement

but a primary competitive advantage. Trust is the new currency.

Ethical Concern	Risk Factor	Mitigation Strategy
Data Privacy	Unauthorized data harvesting.	Zero-party data & transparent consent.
Bias	Discriminatory ad delivery.	Algorithmic auditing & diverse training sets.
Transparency	"Deepfake" or undisclosed AI content.	Clear labeling of AI-generated assets.

Orchestrating the Future

By 2030, AI will be an invisible layer of the global infrastructure. Brands will no longer just market to humans; they will market to **the consumer's own AI agents** that negotiate on their behalf. Success in the Cognitive Age will not be measured by who has the most powerful technology, but by who uses that technology with the most human-centric wisdom. The true advantage belongs to those who balance machine intelligence with human creativity and ethical responsibility.

Phase	Action Item	Success Metric
Immediate	Audit current workflows for "Agentic" potential.	Reduction in manual task hours.
Mid-Term	Implement an Ethical AI Governance framework.	High consumer trust scores.
Long-Term	Transition to Agent-to-Agent (A2A) marketing.	Market share in autonomous ecosystems.

Conculsion:

By 2030, AI will be the most important part of marketing, and professionals will go from being "manual executors" to "orchestrators of intelligence." The "ROI Awakening" of 2026 shows that agentic systems give U.S. businesses an average ROI of 192%, which is almost three times the returns of traditional automation. Even with these improvements, long-term success depends on "Ethical Stewardship," which means putting zero-party data, algorithmic transparency, and reducing bias through established governance frameworks at the top of the list. In the

Agent-to-Agent (A2A) economy, where consumer agents talk directly to brand agents, companies that build "algorithmic trust" while keeping a human-centered core will have the biggest competitive edge.

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CHAPTER 10

The Engaged Edge: Employee Commitment as a Driver of Financial Growth in India's Private Banking Sector

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Abstract

This provides compelling evidence that engaged employees contribute meaningfully to improved financial performance, reinforcing the idea that employee commitment serves as a powerful driver of tangible organizational gains. Technological infrastructure, unnecessary administrative burdens, or inefficient resource allocation. This indicates that employee enthusiasm alone is insufficient, banks must ensure that operational systems and workplace processes are streamlined, so that the motivation generated through engagement can convert effectively into higher productivity. The fact that employee engagement explains 54.2% of the variation in financial growth offers a persuasive data-driven message for senior leadership, investing in engagement is not merely an HR function or an operational expense, so it is a strategic decision that generates a clear and quantifiable competitive advantage. The correlation analysis reveals a distinct ranking among these outcomes, with profitability showing the strongest connection to employee engagement. This pattern suggests that as employees become more committed and involved in their roles, the most immediate and pronounced gains are reflected in an organization's profit levels.

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Keywords: *Strategic Employees, Employee Engagement, Psychological Behaviour, Correlation Test*

Introduction

The Strategic Imperative of Employee Engagement

The modern private sector banking industry in India finds itself at the intersection of technological disruption, stringent regulatory scrutiny, and hyper-local competition. Success is no longer guaranteed by legacy or scale alone; it is fundamentally determined by the effectiveness, agility, and efficiency of its human capital. This chapter focuses on a critical, yet often underestimated, success factor: **employee engagement**: Employee engagement, as conceptually refined by Schaufeli et al. (2002), is a multidimensional construct characterized by **Vigor** (high levels of energy and mental resilience), **Dedication** (a sense of significance, enthusiasm, and pride), and **Absorption** (being fully concentrated and happily engrossed in one's work). This state transcends simple job satisfaction; it represents an employee's complete emotional and cognitive commitment to their organization and its goals. It is a psycho-physical state where an employee's passion, motivation, and discretionary effort are fully captured, leading directly to boosted morale, superior service quality, higher productivity, and stronger alignment with corporate objectives. While human resources literature provides ample evidence linking engagement to internal metrics such as reduced attrition, lower absenteeism, and higher internal process efficiency a significant gap remains in providing localized, empirical evidence that directly links high engagement levels to quantifiable external financial outcomes in specific regional banking contexts. This study addresses this gap by zeroing in on the dynamic private banking sector in the selected cities of Gujarat Vadodara, Ahmedabad, and Surat. Gujarat serves as a vital economic engine for India, characterized by high SME activity and significant retail wealth, making it a competitive hotbed for financial services. The core inquiry driving this research is: To what extent does employee engagement function as a reliable predictor and direct driver of financial growth, encompassing profitability, revenue growth, and productivity, for private sector banks in this high-stakes, service-intensive environment?

The structure of this chapter begins by establishing the financial context of the Gujarat banking sector, followed by a comprehensive review of relevant academic literature. It then details the research methodology, presents the empirical results of the regression and correlation analyses, and concludes with a detailed discussion of the strategic implications for banking sector leadership.

Financial Growth of Private Sector Banks in Gujarat: Context and Challenges

Gujarat's economy is defined by high entrepreneurial spirit, robust industrial growth, and a significant presence in international trade. This rapid pace of change results in a financial market that is both highly active and intensely competitive.

The Role of Private Banks

In India, private sector banks (PSBs) set themselves apart through stronger customer service systems, quicker adoption of new technologies, and more flexible operational structures than their public sector counterparts. Their focus on efficiency, innovation, and customer-centric processes creates substantial expectations for both frontline workers and managerial teams. Because the success of a private bank's strategic initiatives whether it involves launching digital banking solutions or managing complex investment portfolios ultimately depends on the employees who carry out these tasks, the level of employee engagement becomes crucial to overall performance.

Within this framework, Gujarat's banking industry, known for its vibrant financial activity and steady upward growth, offers a highly suitable environment for examining how human capital influences the effectiveness of private banks.

Deposit Mobilization: Gujarat's total bank deposits reached substantial figures (e.g., `11.82 lakh crore, Q3 FY 2024), with private banks aggressively expanding their footprint and offering differentiated services to capture a greater share of this market. This aggressive push requires highly engaged employees capable of proactive relationship management.

- **Credit Expansion:** The sector demonstrates exceptionally strong credit growth, driven largely by retail lending (housing, personal, and vehicle loans) and finance for Small

and Medium Enterprises (SMEs). Engaged loan officers, relationship managers, and credit analysts are critical here, as they ensure not only volume growth but also quality underwriting, which mitigates Non-Performing Asset (NPA) risks—a key factor in true financial stability.

- **Profitability and Efficiency:** Private banks operating in Gujarat have consistently demonstrated superior operational efficiency compared to industry averages. This efficiency is a direct result of streamlined processes and, crucially, highly disciplined business models adopted by motivated, accountable staff. The reported consistent, double-digit increases in net profit underscore the success of strategies reliant on human performance.
- Given this demanding and growth-oriented context, the demand for high-performing, engaged employees who can drive customer acquisition, ensure minimal error rates, and deliver efficient service is paramount. The strategic justification for investing in employee engagement must, therefore, be proven by measurable and superior financial returns, which this study aims to quantify.

Review of Related Literature

The theoretical foundation for the relationship between employee engagement and organizational performance is well-established, rooted in the work of Kahn (1990), who introduced the concept of "personal engagement" as the simultaneous employment and expression of a person's preferred self in work role behaviours.

Theoretical Linkages

Kahn's framework proposes that employee engagement is driven by three key psychological states:

1. **Psychological Meaningfulness:** The perception that one's job has value and contributes to a greater purpose.
2. **Psychological Safety:** The assurance that individuals can express themselves and participate openly without the risk of negative repercussions.
3. **Psychological Availability:** The feeling of being mentally, emotionally, and physically prepared to invest oneself in work activities.

When these psychological conditions are fulfilled, employees tend to extend additional voluntary effort, resulting in stronger performance in their roles. In the banking sector, this could manifest as a teller willingly taking extra steps to resolve a customer's concern (Dedication), a branch manager confidently proposing new operational improvements without fear of criticism (Safety), or a relationship manager recognizing how essential their contribution is to the client's financial goals (Meaningfulness).

Empirical Evidence in the Financial Sector

International research particularly from institutions such as Gallup and Hewitt—consistently shows that companies with high levels of employee engagement outperform those with low engagement across several indicators, including profitability, customer satisfaction, productivity, and shareholder value.

In India, numerous studies have compared engagement trends between Public Sector Banks (PSBs) and Private Sector Banks (PVBs). Findings commonly indicate that PVBs, shaped by competitive goals, streamlined hierarchies, and more attractive pay structures, often report higher engagement levels, especially among younger staff. However, engagement drivers in PVBs tend to be more transactional in nature—such as incentives and career progression—while relational dimensions like organizational trust, emotional connection, and shared mission may play a comparatively smaller role.

Research by R. S. H. and Patil (2017) highlighted that while engagement is strong in PVBs, the high-pressure environment can also lead to burnout. This suggests that the relationship between engagement and long-term financial growth is complex and requires sustainable, not just temporary, motivational strategies. The present study complements this literature by moving beyond a mere comparison to empirically quantify the *impact* of engagement levels on *actual* financial metrics within the PVB context in a specific, high-growth region like Gujarat.

The hypotheses to be tested (H1 and H2) are therefore grounded in the expectancy theory and social exchange theory, predicting a clear causal link where the investment (organizational support and conducive environment) leads to a proportional return (employee commitment and discretionary effort), which, in turn, drives superior financial outcomes.

Research Methodology

Research Design:

This study employed a rigorous **quantitative research design** utilizing a descriptive-analytical approach. The descriptive component established the baseline characteristics of the workforce (demographic profiles) and current engagement levels. The analytical component utilized inferential statistics, specifically regression and correlation analysis, to test the hypothesized cause-and-effect relationships between the primary independent variable (employee engagement) and the dependent variables (financial growth indicators). The reliance on objectively measurable numerical data collected via structured questionnaires adheres to a positivist approach, ensuring high internal validity and statistical rigor.

Sample, Data Collection, and Instrument

- **Study Area Justification:** The focus on Vadodara, Ahmedabad, and Surat was deliberate, as these are the primary financial and industrial centres of Gujarat, housing the regional headquarters and major branches of all leading private banks. This concentration allowed for a focused study on high-performing employees in the state's most competitive markets.
- **Sample Size:** A total of **230 employees** across various private sector banks were surveyed.
- **Sampling Technique: Randomized sampling** was employed to mitigate selection bias. The sample deliberately included participants from various job roles (Clerk, Officer, Manager, Executive) and experience levels to ensure the findings are generalizable across the organizational hierarchy of the private banking system.
- **Instrument:** The data was gathered using a **structured Likert-scale questionnaire**. This instrument was designed to capture self-reported levels of employee engagement (using established scale items covering Vigor, Dedication, and Absorption) and to gauge the employees' perception of their branch/organization's financial performance across three key dimensions: profitability, revenue growth, and productivity.

Respondent Profile

The demographic breakdown confirms the diverse nature of the sampled population, representing a stable cross-section of the private banking workforce.

Age Distribution of Respondents

20-29 years	62	27.0%
30-39 years	83	36.1%
40 and above years	85	37.0%
Total	230	100.0%

Source: Own calculations

Gender Distribution of Respondents

Male	122	53.0%
Female	108	47.0%
Total	230	100.0%

Sources : Own calculations

Designation / Job Position of Respondents

Clerk / Frontline Staff	48	20.9%
Officer	68	29.6%
Manager	63	27.4%
Senior Manager / Executive	51	22.2%
Total	230	100.0%

Sources : Own calculations

Work Experience in the Banking Sector

Less than 1 year	53	23.0%
1–5 years	59	25.7%
6–10 years	49	21.3%
More than 10 years	69	30.0%
Total	230	100.0%

Source : Own calculations

The experience distribution, notably with 51.3% of respondents having more than five years of experience, provides confidence in the data's reliability, as these employees possess a longitudinal understanding of organizational performance.

Results and Empirical Analysis

The statistical analysis focused on proving the significance and strength of the relationship between the independent variable (Employee Engagement) and the composite dependent variable (Financial Growth).

Regression Analysis (Testing H1)

The regression model used Employee Engagement as the sole predictor for the overall Financial Growth of Private Sector Banks.

Regression Analysis Summary

R	0.736	Strong positive linear relationship.
R Square	0.542	Employee engagement accounts for 54.2% of the variance in financial growth.
F-statistic	270.254	The model's predictive power is highly reliable.
Significance (p-value)	0.000	The impact is statistically highly significant ($p < 0.001$).

Source: Own calculations

The R^2 value of 0.542 represents a substantial result, showing that approximately 54% of the variation in financial growth among the banks studied can be explained by differences in employee engagement levels. This suggests a strong explanatory power within the model. Furthermore, the statistically significant F-statistic reinforces the reliability of the regression output, indicating that the relationship identified is meaningful and not merely a product of random variation.

Regression Coefficients

Employee Engagement	0.642	0.736	16.439	0.000

Source : Own calculation

H1:The findings offer clear empirical validation for H1, confirming that employee engagement exerts a significant and positive influence on the financial growth of private sector banks in the selected cities of Gujarat. The standardized coefficient (β = 0.736) reflects a notably strong effect size, highlighting the substantial role engagement plays in shaping financial outcomes. Additionally, the unstandardized coefficient (B = 0.642) demonstrates that a one-point rise in the employee engagement score (as captured through the Likert-scale questionnaire) is associated with an expected 0.642-unit increase in the Financial Growth index. This provides compelling evidence that engaged employees contribute meaningfully to improved financial performance, reinforcing the idea that employee commitment serves as a powerful driver of tangible organizational gains.

Correlation Analysis (Testing H2)

Pearson correlation analysis was used to assess the specific strength and direction of the relationship between engagement and the individual components of financial growth (Table 4.7).

Table 4.7: Pearson Correlation Matrix

Variable Pair	Pearson Correlation (r)	Significance (p-value)	Interpretation
Engagement and Profitability	0.705	0.000	Strong Positive Correlation
Engagement and Revenue Growth	0.590	0.000	Moderate-to-Strong Positive Correlation
Engagement and Productivity	0.353	0.000	Moderately Positive Correlation

**All correlations are significant at the 0.01 level (2-tailed). Source : Own calculations

H2: The results offer strong support for H2, demonstrating that employee engagement is significantly and positively associated with major financial performance indicators, including profitability, revenue growth, and overall productivity. The correlation analysis reveals a distinct ranking among these outcomes, with profitability showing the strongest connection to employee engagement. This pattern suggests that as employees become more committed and involved in their roles,

the most immediate and pronounced gains are reflected in an organization's profit levels.

The empirical results from the private banking sector in Gujarat provide strong evidence, moving the conversation from **if** engagement matters to **how much** it matters, and **where** its influence is most potent. Employee engagement is unequivocally established as a key strategic driver of financial performance.

The Hierarchy of Financial Impact

The variance in correlation coefficients offers nuanced insights into the pathways through which engagement translates into financial value:

- **Dominance of Profitability (r = 0.705):** The strongest correlation suggests that engaged employees are highly effective in behaviour's that directly enhance the bank's bottom line. This influence extends beyond achieving strong sales figures—it also reflects the quality of work delivered. Employees with high engagement levels tend to make fewer processing mistakes, which helps minimize operational losses, compliance issues, and the cost of rework. Moreover, engaged employees better anticipate customer preferences and respond more effectively to their concerns. This leads to higher customer retention and increased lifetime customer value, both of which form the foundation of long-term profitability in the banking industry.
- **Strong Association with Revenue Growth (r = 0.590):** Revenue expansion is shaped largely by outward-facing behaviours, and highly engaged employees excel in this area. They show initiative, actively pursue new business opportunities, and confidently and responsibly cross-sell or up-sell various banking products. Their positive interactions with customers also generate valuable word-of-mouth referrals. In competitive banking hubs such as Ahmedabad and Surat, this proactive, discretionary effort from frontline staff often determines whether a bank experience accelerated growth or merely sustains its existing market position.
- **Moderate Relationship with Productivity(r=0.353):** Although the link between engagement and productivity is statistically significant, the moderate strength of this correlation reveals an important insight. Engagement

provides the motivation and intent to perform well, but the actual translation of this intent into measurable output is influenced by additional organizational factors. These may include outdated technological infrastructure, unnecessary administrative burdens, or inefficient resource allocation. This indicates that employee enthusiasm alone is insufficient banks must ensure that operational systems and workplace processes are streamlined so that the motivation generated through engagement can convert effectively into higher productivity.

Strategic Recommendations for Private Bank Manager

The findings translate into clear, actionable strategic directives for private bank leadership and HR professionals aiming to maximize their returns on human capital:

- **Prioritize Sustainable Engagement Drivers (The Relational Edge):** Instead of focusing solely on transactional rewards, banks must invest in relational drivers of engagement. This means cultivating the three psychological conditions identified by Kahn:
  - **Meaningfulness:** Clearly linking every role—from the teller to the back-office compliance officer—to the bank's mission and customer success.
  - **Safety:** Establishing a culture where employees feel safe to voice innovative ideas, report errors without fear of disproportionate punishment, and raise compliance concerns proactively.
- **Leadership Accountability for Engagement:** Managerial support is consistently identified as the single largest driver of employee engagement. Senior management must ensure that branch managers are trained not merely as operational controllers but as supportive, transformational leaders. Managers should be incentivized and held accountable for their team's engagement scores, making it a mandatory component of their performance review. This requires shifting from a purely punitive management style to one that emphasizes coaching and mentorship.
- **Holistic Optimization of the Work Environment (Bridging the Productivity Gap):** To convert the strong willingness

(engagement) into high output (productivity), banks must target the systemic roadblocks identified by the moderate correlation:

- **Digital Tools:** Ensure that Digital tools are not only available but seamlessly integrated, reducing manual administrative burdens for frontline staff.
- **Process Streamlining:** Conduct a systematic review of all non-customer-facing administrative tasks to eliminate redundancy and streamline procedures, allowing engaged employees to spend more time on high-value activities (customer interaction, sales).

- **Adopt an Integrated Metric (The Balanced Scorecard):** Employee engagement must be formalized as a leading indicator of financial health. It should be included in the bank's Balanced Scorecard alongside traditional metrics like Return on Assets (ROA) and Net Interest Margin (NIM). This institutionalizes its status as a strategic, financial asset, necessitating regular measurement, auditing, and goal setting driven from the CEO's office downwards, not just the HR department.

Conclusion

This comprehensive analysis confirms that employee engagement is a positive, powerful, and essential predictor of the financial growth of private sector banks in the competitive environment of Gujarat. The statistical results clearly demonstrate that companies that cultivate genuine emotional commitment and enthusiasm among their employees gain measurable financial benefits most notably, markedly stronger profitability. The fact that employee engagement explains 54.2% of the variation in financial growth offers a persuasive data-driven message for senior leadership: investing in engagement is not merely an HR function or an operational expense; it is a strategic decision that generates a clear and quantifiable competitive advantage.

At the same time, the moderate relationship between engagement and productivity highlights an important consideration. While engaged employees exhibit the motivation and willingness to contribute at high levels, their actual output is shaped by the

systems and structures around them. This underscores the need for parallel investments in technology upgrades, streamlined processes, and efficient resource allocation. Engagement fuels effort, but organizational infrastructure determines how effectively that effort is translated into results.

Looking ahead, future research should investigate the specific moderating factors that strengthen the engagement–productivity relationship—such as the efficiency of internal communication channels, the depth of technological adoption, or the influence of targeted performance incentive programs on sustained engagement. Additionally, a longitudinal design following a set of banks over several years would help establish engagement as a causal driver of long-term financial success. Such evidence would reinforce the notion that in the competitive, service-intensive environment of private sector banking, the Engaged Edge remains the most reliable and enduring source of competitive superiority.

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CHAPTER 11

A Financial Analysis of Selected Dairies of Gujarat

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Abstract

India has become the world's largest milk producer. This is accomplished by "operation flood" one of the largest creating a strong connection between rural producers and urban consumers. The Indian dairy sector contributes is Gross Domestic Product, which focuses on the performance evaluation of the Gujarat State's co-operative dairy set programs in the world for milk production, to the agricultural production of the industry engaged in milk and milk products 'manufacturing and sales. Nine leading cooperative dairy units linked to GEMME are chosen for these purposes. Information linked to all nine-district cooperative dairy units for the last ten years were used for evaluating the accomplishments of Gujarat dairy units. Collected India is developing economy having agriculture as its primary occupation of a considerably larger populace. Agriculture in India is monsoon-dependent, while it gives employment to almost 50% of the population, the farmers still live in portable situations. Poor and debt-ridden farmers tend to commit suicides owing to them failing to adjust to the challenges posed by man and mother nature. In such a situation, making available to thema fitting alternative is vital for earning their

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bread and butter. Dairy facilitates thwarting such adverse conditions. This research article makes efforts to highlight the dairy business as a budding agriculture - sectoral.

Keywords: India, Economy, Agriculture, Dairy

Introduction

The agriculture sector is among the foundational sectors of the Indian economy: Agriculture is a platform of survival for over two-thirds of India's employed human capital. As mentioned in the economic report of the financial year (FY) 2015-16, agriculture and allied sectors have claimed 14.5% of India's GDP. Indian agriculture sector has claimed over 43% of India's geographical arca. 'While a stationary reduction of the agricultural sector in India's GDP share has happened, the sector still plays a vital role in the overall socioeconomic develop 'mentor of India. "The Indian agriculture sector is at crossroads, facing a prominent challenge of reverse deceleration in growth of agriculture. Primary reasons behind the deceleration in agricultural grow their reduced investment specially the public invest- 'met in agriculture research, development and irrigation, along with inefficiency of institutions giving inputs and services (such as rural credit and extension). Other factors, viz. Land fragmentation, outdated tenancy laws, absence of modern market, rural infrastructure, misfit input pricing policies, etc. are liable for agrarian and ecological shortcomings in India. The stagnation crisis in Agri-culture leads loan increase in the rural areas' poverty. Farmers in India are highly indebted and poor. The time to change snow as the plight of the Indian farmers is portable. Improving the adoption of the allied activities of farming highly scientifically and in an organized way. The allied business concept isn't a new concept. Animal husbandry, dairy, fishing, and motherland sectors have on- tributed, also including agriculture for over multiple centuries. Dairying is a highly promising allied sector of agriculture. The livestock population of India is: 'one of the highest in the world. 50% of the buffaloes and 20% of the cattle in the world are in India, a number of these are milk cows and buffaloes. It's only because of the "Operation Flood" that the ongoing and balanced efforts

taken by the government led to make India the largest milk producer nation in the World. This research paper is directed towards evaluating the performance of India's dairy industry The focus should be an all the ingredients of the sector.

Objectives of the Study

1. To study the overall milk production in India.
2. To evaluate the performance of the dairy business in India.

Sources of Data

"This study is directed towards the secondary data. Data collection is done from various government reports and news is gathered from various newspapers and magazines. Certain references are also taken from various scholarly research are clues.

Indian Dairy- A Promising Sector: The livestock population of India is among the largest in the world. 50% of the buffaloes and 20% of the cattle in the world exist in India, a number of which arc milk cows and buffaloes. Dairy development in India is acknowledged all over the world as modem India's highly successful developmental programme. Today, India i ranked among the largest milk-producing nations of the world. Milk and milk products are rated among the highly promising sectors that deserve considerable applause. At the time when the global world milk production recorded a sluggish growth of 1%, India recorded a better performance with 4.5% growth. The total milk production touched 121 million tonnes in FY 2015-16.

As are the daily per capita milk access has also risen from 124 grams in 196110281 grams in 2015-16. The livestock sector added 3.93% to India's GDP and 20.71% to agriculture GDP in 2014-15 (Economic Survey). Livestock acts as an integral component of the rural community's economic and social life. Milk Production in India: India is the world's largest dairy den, although India still cesses a production short- age owing 10a high demand from rising population and also reduced productivity of Indian cows. India tops the milk production ranking, Indian dairy sec-prime illustration of production by masses a again mass production. Indi's milk supply emanates from millions of small producers, spread all over the rural access. On an average, a herd of only two-three milch animals (having, cows and buffaloes) is maintained

by these farmers. Having an overall gain of 121 million tonnes of milk in 2015-16 from cattle, buffaloes and goats, coupled with a per capita milk availability of 281 g/day the Indian dairy story is continuously marching forward and makes a promise to each higher echelons of success, increasing dairy remuneration for the famer. Although, with the rising population, itis projected that the total milk production must be close to 200 million tonnes by 2030 to satisfy the demand a shortfall would still exist in the supply. The table below exhibits the overall production and the percapita milk availability. Livestock Population in Indi Dairy sector amasses economic and social significance in India owing to the dairy animals giving output, input, asset and socio-cultural functions in a multi-functional environment, The 2008-09 Livestock Census puts indigenous cattle quantity at 166 million, with 3 million crossbred cattle and 105 million buffaloes existing in India. Within this, the proportion of adult milch females is 19,43 and 46%, respectively. The decade-wise trend in livestock population (1997- 2007) exhibit a unique transformation in the composition of dairy animal stock, favouring buffaloes and crossbred cattle, since their quantity rose by 5.91 and 6.05 million. Indigenous cattle were reduced by 1.8, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Gol Different breeds of cows and buffaloes used for milking in Indi: India is rich in its livestock wealth. It accounts for nearly 15.8% of the world cattle population, more than half of the world buffalo population. Breeds of Buffaloes and cows of Indian Origin and Breeding Tracts re given below.

Sachdeva (2012), suggested that the contribution of private milk agencies and cooperatives to Punjab's dairy industry was assessed. Verka, Nestle, and other companies buy milk from farmers for less than market value. This is the main cause of Punjab's dairy industry's lack of profitability. This prevented it from covering dairy expenses.

Khanna (2012a) evaluated Punjab's milk adulteration problem. The majority of the adulteration was discovered in milk that milkmen sold loose, whereas samples of packaged milk were discovered to be unadulterated. Milkmen do whatever they can to earn a quick buck, from adding water to packaged milk before selling it as loose milk to adding glucose powder or skimmed milk powder. Therefore, the milk we receive each morning is undoubtedly not as healthy as we would like. 257

lakh litres of milk are produced on average per day in Punjab. Out of this, dairymen keep 55% of the milk for their own use, while organised dairy players buy 25% to sell as packaged milk and other milk products. The majority of adulteration has been identified in the remaining 20% of the milk, which is purchased by milkmen and sweet vendors.

Chengappa (2012), examined milk adulteration in India. The National Survey of Milk Adulteration 2011, which revealed that 81% of milk samples tested lately in Punjab were found to be tainted, has been explained by the author. It is very shocking, in fact. According to a report, 42% of youngsters in India are undernourished. Alarmingly, Punjab has a high rate of milk adulteration. The use of the hormone-stimulating drug oxytocin to increase milk production and the associated negative effects are well-known. According to the survey, water and diluted powder milk are the sources of adulteration in the milk that is sold in bulk.

Khanna (2011) noted in his article that an increase in milk procurement rates has led to higher milk prices. The author also mentioned that Milkfed in Punjab purchases about 11 lac litres of dairy milk every day. The remaining amount is converted into other milk products including butter, ghee, curd, lassi, and kheer. Of this, 8.5 lac litres are sold as milk.

Malhotra (2011) evaluated the primary sectors of the dairy business. In his research article, the author analysed the many dairy sector activities, including production, processing, job profiles, opportunities, and personality qualities. The largest producer of milk animals worldwide is India. Two of the agricultural industries in the nation with the fastest growth rates are dairy farming and processing. The one commodity that contributes the most to India's GDP is milk. Numerous job opportunities have arisen as a result of the dairy sector's phenomenal growth, which also includes the dairy processing business and allied sectors. The number of large and small dairy plants nearly 600 owned by private businesses and dairy federations has led to an increase in the demand for certified and skilled workers. Although practically every state is copying Amul's 'cooperative' success, the National Dairy Development Board (NDDB), a multi-locational institution active in planning, implementing, financing, and supporting

farmers owned professional agri-businesses, is the key PSU in this field. Employment prospects and wages have increased as a result of the entry of international corporations including Nestle, Cadbury, Kellogg's, Unilever, Walls, Heinz, and Prefetti Van Melle onto the Indian market. To increase demand, milk cooperatives and federations like Mother Dairy, Amul, Prang, Vijaya, Milkfed (Verka), as well as private businesses like Milkfood, Dalmia, Dabur, Britannia, and Vadilal, are actively modernising and diversifying their business models.

Research Methodology

It is the systematic, theoretical examination of the methods that are employed to a particular subject of study that is known as methodology. In this context, theoretical study of the collection of methods and concepts linked with a particular discipline of knowledge is included.

This research is exploratory in character, and it is intended to provide new insights into the subject matter. "A Comparative Study of Financial Performance of Selected Dairies in Gujarat". Experts, researchers, and other renowned people with years of experience in the fields of dairy products, agriculture, and research will debate in detail numerous topics linked to major areas of the study to gain a better understanding of the topic before collecting information. We will use the information and ideas gathered from the conversations in the development of a framework for this research.

Methods of Data Collection

Secondary data sources have been used in this study, which is unique.

Secondary Data

Secondary sources of information were used in the preparation of this proposed research project.

Secondary information has been gathered from the Annual Reports of cooperative dairy farms. Using the information gathered from the Cooperative Dairies' Annual Reports on Incomes and Expenses, we can assess the performance of the dairy industry overall. Other valuable information was gathered

from the website and publications available on Google Books, as well as from the library of the School of Commerce in New York City. The reason for selecting five co-operative dairy farms is that all of these co-operative farms are premier co-operative farms and may serve as good representatives of the dairy industry in Gujarat.

Period of Data Coverage

The financial statements of the Co-operative dairy company under investigation were examined during a ten-year period. To analyse the most recent trends and performance of a selected Co-operative dairy in Gujarat, financial accounts from 2010-11 to 2019-20 have been compiled and analysed.

Research Objective

1. To study the Dairy Industry in Gujarat.
2. To study the role of GCMMF in Dairy Development in Gujarat state.
3. To study the financial performance of selected Dairy in Gujarat.
4. To study profitability of selected Dairy in Gujarat.
5. To provide suggestion to improve the financial position of selected Dairy in Gujarat.

Research Hypothesis

H0(1): There is no significant difference between Asset Turnover Ratio between selected dairies of Gujarat

H1(1): There is significant difference between Asset Turnover Ratio between selected dairies of Gujarat

H0(2): There is no significant difference between Current Ratio between selected dairies of Gujarat

H1(2): There is significant difference between Current Ratio between selected dairies of Gujarat

H0(3): There is no significant difference between Quick Ratio between selected dairies of Gujarat

H1(3): There is significant difference between Quick Ratio between selected dairies of Gujarat

H0(4): There is no significant difference between Net Profit Margin between selected dairies of Gujarat

H1(4): There is significant difference between Net Profit Margin between selected dairies of Gujarat

Ho (5): There is no significant difference between Net Profit To Net Purchase Ratio between selected dairies of Gujarat

H1(5): There is significant difference between Net Profit To Net Purchase Ratio between selected dairies of Gujarat

H0(6): There is no significant difference between Net Profit To Production Expense Ratio between selected dairies of Gujarat

H1(6): There is significant difference between Net Profit To Production Expense Ratio between selected dairies of Gujarat

H0(7): There is no significant difference between Operating Profit Margin between selected dairies of Gujarat

H1(7) : There is significant difference between Operating Profit Margin between selected dairies of Gujarat

H0(8) : There is no significant difference between Profit Before Interest And Tax Margin(%) between selected dairies of Gujarat

H1(8) : There is significant difference between Profit Before Interest And Tax Margin(%) between selected dairies of Gujarat

H0(9) : There is no significant difference between Return on Assets between selected dairies of Gujarat

H1(9) : There is significant difference between Return on Assets between selected dairies of Gujarat

H0(10) : There is no significant difference between Return on Capital Employed between selected dairies of Gujarat

H0(10) : There is significant difference between Return on Capital Employed between selected dairies of Gujarat

The information gathered from the Annual Reports:

Tables, graphs, and statistical data were created using statistical software such as SPSS and Microsoft Excel. Mean, trend analysis, and analysis of variances are some of the statistical tools recommended for data analysis (ANOVA).

Asset Turnover Ratio

YEAR	Amul Dairy	Dudhdhara Dairy	Madhur Dairy	Sabar Dairy	Vasudhara Dairy
2010-11	2.074	4.789	3.687	4.568	3.943
2011-12	2.378	5.007	5.091	3.705	3.912
2012-13	2.892	4.476	4.728	4.764	3.523
2013-14	3.200	4.317	4.104	5.260	3.242
2014-15	3.012	4.354	5.415	4.649	3.206
2015-16	3.797	4.390	6.096	3.317	4.023
2016-17	3.072	4.006	5.789	2.494	3.219
2017-18	3.819	3.982	3.899	1.745	3.468
2018-19	3.421	3.944	4.549	1.842	3.220
2019-20	2.692	3.133	4.956	4.022	2.032

Table 7 : Trend of Asset Turnover Ratio

YEAR	AVERAGE RATIO	TREND
2010-11	3.812	100.000
2011-12	4.019	105.417
2012-13	4.077	106.937
2013-14	4.024	105.571
2014-15	4.127	108.268
2015-16	4.325	113.443
2016-17	3.716	97.478
2017-18	3.383	88.735
2018-19	3.395	89.066
2019-20	3.367	88.322

Generally speaking, asset turnover is a financial ratio that assesses the efficiency with which a corporation uses its assets in order to generate sales revenue or sales income for the organisation. Low profit margins are associated with high asset turnover, whereas high profit margins are associated with low asset turnover, as shown in the chart below. Retail companies have a high turnover percentage, which is mostly owing to the intense competition and low prices that exist in the market today. As shown in the above tables and graphs, the highest average value of asset turnover ratio value was observed during the year 2015-

16, indicating that selected dairies based in Gujarat used their assets most efficiently to generate revenue during the year 2015-16, whereas the least efficient use of assets was observed during the year 2019-20, which indicates that selected dairies based in Gujarat used their assets least efficiently to generate revenue during the last ten years of the study period. When compared to the most recent years, dairies have utilised their assets more efficiently during older periods on average. Madhur Dairy was ranked first for generating income from its assets in the most efficient manner, whereas Amul Dairy was ranked first for generating revenue from its assets in the least efficient manner. Zigzag trend of asset turnover ratio of all selected 5 dairies has been observed during last 10 years of study period.

Anova Testing : Asset Turnover Ratio

H0(1) : There is no significant difference between Asset Turnover Ratio between selected dairies of Gujarat

H1(1) : There is significant difference between Asset Turnover Ratio between selected dairies of Gujarat

We use ANOVA to analyse the data for the above hypothesis.
Anova: Single Factor

Summary

Groups	Count	Sum	Average	Variance
Amul Dairy	10	30.357	3.036	0.318
Dudhdhara Dairy	10	42.397	4.240	0.269
Madhur Dairy	10	48.315	4.831	0.637
Sabar Dairy	10	36.367	3.637	1.573
Vasudhara Dairy	10	33.787	3.379	0.329

Anova

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	20.426	4	5.106	8.1654	4.9E-05	2.5787
Within Groups				28.142	45	0.625
Total					48.568	49

Current Ratio

YEAR	Amul Dairy	Dudhdhara Dairy	Madhur Dairy	Sabar Dairy	Vasudhara Dairy
2010-11	2.376	1.971	0.955	1.327	1.185
2011-12	1.969	2.040	1.007	1.276	1.186
2012-13	1.920	3.228	1.250	1.297	1.362
2013-14	1.738	2.953	1.228	1.317	1.095
2014-15	1.230	3.063	1.157	1.215	1.507
2015-16	1.224	4.292	1.050	1.094	1.025
2016-17	1.159	2.800	0.843	1.056	1.415
2017-18	1.083	2.018	0.890	4.425	1.274
2018-19	1.167	1.541	0.762	3.922	1.903
2019-20	1.231	1.991	0.700	1.601	1.571

Current Ratio

YEAR	AVERAGE RATIO	TREND
2010-11	1.563	100.000
2011-12	1.495	95.688
2012-13	1.811	115.916
2013-14	1.666	106.610
2014-15	1.634	104.584
2015-16	1.737	111.164
2016-17	1.454	93.070
2017-18	1.938	124.017
2018-19	1.859	118.959
2019-20	1.419	90.795

Challenges

- **Breeding infrastructure and genetics**:

  The success of the Indian dairy industry may largely be attributed to an increase in the number of cows, rather than an increase in production. Increasing the production of each animal is essential when resources are limited. Advance breeding procedures including artificial insemination, embryo transfer, and so on, are in high demand in the livestock industry.

- **Animal feed and fodder:**

  Green fodder and high-quality feed are becoming increasingly scarce. As the popularity of purebred livestock increases, so does the need for high-quality feed and fodder to meet the nutritional needs of dairy cows. Feed pre-mixes are also being used as a preventative measure to avoid numerous health and nutrition-related issues.

- **Animal health:**

  To fill the void, we need better healthcare and animal illness diagnostics. Due to the increased care needed by high-yielding animals, the animal health industry has grown steadily over the years.

- **Farm mechanization:**

  Despite having a population of 1.25 billion people, there is a growing labour shortage and rising labour costs in the country. As a solution, farmers have welcomed the use of farm machinery.

- **Cold chain infrastructure:**

  To avoid contamination and deterioration at the village level, there is a dearth of the infrastructure required for cooling plants and bulk coolers. The government and commercial sector are putting a lot of money into this market in order to secure enough procurements.

- **Power availability:**

  As a result, the quality and shelf life of milk degrade, especially in areas where electricity is scarce. Solar-powered milk chillers present a potential opportunity in this market.

- **Quality testing infrastructure and trained work force:**

  At milk collection centres, there is insufficient quality testing infrastructure. Because of the scarcity of qualified personnel to conduct quality testing, the issue is exacerbated. The need for safe food is growing quickly at the consumer end, which means there is a lot of room for growth.

- **Processing equipment and food ingredients:**

  Processors are being compelled by rising consumer awareness and a shift in lifestyle to focus on product innovation, which in turn is increasing demand for high-quality equipment and a wide range of food ingredients.

Key Areas of Concern in the Dairy Industry

Competitiveness, production costs, animal productivity, etc. Increased consumption and production in many emerging nations are boosting demand for high-quality dairy products. A rise in global demand for dairy products should benefit countries with low production costs the most. As a result, the Indian dairy industry should work to cut production costs in order to remain competitive. The cost of milk production can be reduced by increasing animal output, improving animal health and breeding facilities, and managing dairy animals better. Both the federal government and the dairy business have a stake in this outcome. Infrastructural support for production, processing, and marketing To become an exporting nation, India must have a well-developed production, processing, and marketing infrastructure capable of matching international quality standards. To produce safe and high-quality dairy products, a comprehensive strategy must be devised that includes legal support. It's best to concentrate on buffalo milk-based products The Indian dairy business is also notable for its abundance of buffalo milk. The speciality goods based on buffalo milk, such as Mozzarella cheese, that India can focus on meeting the needs of target consumers. Importation of high-value goods and exportation of low-value goods In the future, despite the efforts of Indian enterprises to expand their product variety, it is possible that imports of high-value goods will increase while exports of low-value goods will decrease. The industry as a whole must get ready to tackle these new challenges.

Opportunity

The demand for milk and milk products in the Indian market is expected to develop at a quick pace due to a growing middle class, increased prosperity, changing food preferences, and a higher level of knowledge. Backward chain integration and the growth and competitiveness of new dairy sectors are critical to India's dairy industry's future. The supply of high-quality milk will become increasingly important as processing capacity grows. So many processors will spend in developing the backward chain and building cold chain infrastructure in such a scenario. More farmers will be able to access the organised sector through this method. The entire chain will be accelerated because of these advancements, which have already resulted

in significant progress. Growing numbers of cooperative and private milk processing companies in India are actively working to transform the small-scale structure of dairy production, improve animal feeding techniques, and increase productivity and marketing. This is a positive development. The demand for new technologies, machinery, packaging solutions, food diagnostics, and food components is growing because of this consumer-end innovation.

Hypothesis Testing Summary Anova Testing

SR NO	NULL HYPOTHESIS	P VALUE	DECISION
1	There is no significant difference between Asset Turnover Ratio between selected dairies of Gujarat	0.0000	Null Hypothesis is Rejected
2	There is no significant difference between Current Ratio between selected dairies of Gujarat	0.0001	Null Hypothesis is Rejected
3	There is no significant difference between Net Profit Margin between selected dairies of Gujarat	0.0313	Null Hypothesis is Rejected
4	There is no significant difference between Net Profit To Net Purchase Ratio between selected dairies of Gujarat	0.0046	Null Hypothesis is Rejected
5	There is no significant difference between Net Profit To Production Expense Ratio between selected dairies of Gujarat	0.0047	Null Hypothesis is Rejected
6	There is no significant difference between Operating Profit Margin between selected dairies of Gujarat	0.0075	Null Hypothesis is Rejected

7	There is no significant difference between Profit Before Interest And Tax	0.0553	Null Hypothesis is Accepted
Margin(%) between selected dairies of Gujarat			
8	There is no significant difference between Quick Ratio between selected dairies of Gujarat	0.0001	Null Hypothesis is Rejected
9	There is no significant difference between Return on Assets between selected dairies of Gujarat	0.0134	Null Hypothesis is Rejected
10	There is no significant difference between Return on Capital Employed between selected dairies of Gujarat	0.0000	Null Hypothesis is Rejected

Conclusion

Since the primary goal of the co-operative milk producers' union is to defend milk farmers from the exploitation of private dairies, co-operative dairies are unable to purchase milk at a lower price to boost profit margins. Co-operative dairies were created by milk producers to protect themselves from private dairies that gave milk producers very low procurement rates and charged milk consumers excessive prices.

In addition to protecting the interests of milk producers, cooperative dairies also ensure that the selling price of milk cannot be suddenly increased to increase profit margins. Cooperative dairies will be unable to compete in today's market because of the competition from private dairies. In today's monopolistic competition environment, co-operative dairies can flourish more through product differentiation (better quality, better packaging, etc.) than through price changes.

As a result, cooperative milk dairies have a limited window of opportunity for financial success. Profitability can be increased by reducing and controlling costs as well as increasing the volume of sales through better quality products, which in turn encourages storage and processing plants to operate at their full or near-full capacity, decreasing the proportion of unutilized or spare capacity and thus reducing per unit fixed costs.

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CHAPTER 12

Navigating the Forces : Impact of Internal and External Environment on Business Performance

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Abstract

Business performance is shaped by a complex interaction between internal organizational capabilities and external environmental forces. We can see that markets are becoming more competitive, so it is important to take care about monitoring and responding to environmental variables – micro and macro. This research shows how external factors such as competition, government regulations, socio-cultural changes, technology, economic conditions and internal factors such as leadership, organizational culture, human resources, financial strength, and operational efficiency combined to enhance business performance. The study is done with the use of a descriptive research design, which is supported by a structured literature review and a conceptual framework. Primary data is collected from 120 respondents using a survey method representing MSMEs and medium-scale enterprises. The analysis shows its outcome as internal environment factors have a direct and immediate impact on performance,

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while external forces exert a moderate influence, often requiring organizational adaptation. The study also offers recommendations for improving internal processes, building resilience, and enhancing strategic responsiveness to external conditions.

Keywords: *Internal environment, external environment, MSME.*

Introduction:

In the increasingly competitive and dynamic global marketplace, the performance of any business is shaped by a wide range of forces that function both within and outside the organization. The internal and external forces surrounding a business strongly influence how it operates, makes decisions, and plans. These factors shape strategic direction, affect day-to-day efficiency, and determine how well a company can sustain itself over time. Organizations that actively study and understand these forces are better positioned to gain a competitive edge, respond quickly to changes, seize new opportunities, and reduce potential risks. Internal elements arise from within the firm and can largely be managed or adjusted, whereas external elements lie outside the organization's control. Despite being uncontrollable, these external influences hold significant weight, making it essential for businesses to respond with awareness, flexibility, and strategic planning. This chapter explores the intricate relationship between internal and external environmental factors and business performance. It examines how elements such as organizational culture, leadership, resources, technology, market competition, government policies, societal expectations, and global trends influence strategic outcomes.

The discussion emphasizes the need for environmental scanning, strategic forecasting, and continuous adaptation. By understanding the impact of these forces holistically, managers and business scholars gain deeper insights into creating resilient, agile, and high-performing organizations.

Literature Review

The literature review synthesizes research findings from published books, journals, and empirical studies on business environment and performance. **Internal Environment and Business Performance Organizational Structure:** Burns

and Stalker (1961) suggested that organizations must align their structure with the nature of their environment. In stable settings, a mechanistic structure with clear hierarchy and rigid procedures tends to work well. In contrast, fast-changing or uncertain environments demand an organic structure that supports flexibility, quick decision-making, and innovation. Such adaptable structures generally lead to better performance. **Leadership: Northouse** (2016) emphasizes that leadership style plays a crucial role in shaping employee motivation, work outcomes, and the overall strategic direction of the firm. Transformational leaders, who inspire creativity and commitment among employees, often achieve stronger performance results. **Human Resource Capability**: According to Becker and Gerhart (1996), the skills and competencies of employees significantly influence operational efficiency, service standards, and competitive advantage. Organizations that invest in training and development typically experience improved performance and productivity. **Organizational Culture:** Schein (2010) highlights that a positive and cohesive organizational culture built on shared values and supportive practices enhances adaptability and boosts both productivity and employee satisfaction. Strong cultures often promote teamwork and encourage innovation. **Financial Resources:** Penrose (1959) argues that the financial capacity of a firm directly affects its potential for growth and its ability to navigate uncertainties. Companies with adequate capital resources are generally better positioned to expand operations and achieve higher performance levels. **Operational Efficiency:** Womack and Jones (1991) show that lean practices and streamlined processes reduce waste, lower costs, and improve customer satisfaction. Enhanced operational efficiency has a direct and positive impact on profitability. **External Environment and Business Performance**: **PESTLE Factors**: Johnson, Scholes, and Whittington (2008) classify the major external influences on organizations through the PESTLE framework political, economic, social, technological, legal, and environmental forces. These macro-level factors create both opportunities and challenges that affect business decisions and performance.

Competitive Environment: Porter's Five Forces model (1980) explains how industry competition, the bargaining power of

buyers and suppliers, the threat of substitutes, and the entry of new competitors shape organizational performance. Increased competitive pressure often pushes businesses to innovate and refine their strategies. **Technological Advancement: Brynjolfsson** and McAfee (2014) assert that technology acts as a major driver of productivity, operational efficiency, and enhanced customer experience. Businesses that lag in adopting new technologies risk losing their competitive edge. **Economic Conditions:** Samuelson and Nordhaus (2001) note that economic indicators such as GDP growth, interest rates, inflation, and consumer demand directly affect business profitability. Economic downturns generally lead to reduced performance across industries.

Government Policies and Regulations: Government rules such as tax structures, labor standards, trade policies, and environmental regulations have a substantial impact on how organizations operate (Hillman & Hitt, 1999). Supportive policies can enable growth, while strict regulations may increase operational costs. **Social and Cultural Forces:** Demographic shifts, lifestyle trends, and societal expectations shape consumer behavior and influence market demand. Businesses must adapt to these social and cultural changes to remain relevant and competitive.

Synthesis of Literature: The reviewed literature concludes that:

- Internal environment has a **direct and immediate impact** on performance.
- External environment has an **indirect but highly influential impact**, requiring adaptability.
- Businesses with strong internal capabilities respond better to external challenges.
- Continuous environmental scanning enhances long-term sustainability.

Research Methodology:

Research Design:

A **descriptive research design** is adopted to study the impact of internal and external environmental factors on business performance.

Research Objectives

1. To examine the internal environmental factors influencing business performance.
2. To analyze the external environmental forces impacting business performance.
3. To evaluate the combined effect of both environments on overall performance.
4. To suggest strategies for improving organizational adaptability.

Data Collection

Primary Data

- Structured questionnaire
- Sample size: 120 respondents
- Respondents: Managers, entrepreneurs, and employees from MSMEs and medium enterprises

Secondary Data

- Journals (Scopus, ABDC)
- Books on business environment and strategic management
- Government reports
- Industry surveys

Sampling Method

- Purposive sampling
- Focus on enterprises with at least 3 years of operational experience

Research Instrument

The questionnaire used a **5-point Likert scale** to measure agreement with statements related to internal and external environment.

Data Analysis Tools

- Percentage analysis
- Mean score analysis
- Correlation analysis

Data Analysis and Interpretation

Table 1: Respondent Profile (n = 120)

Category	Frequency	Percentage
Male	74	61.7%
Female	46	38.3%
Age 20–30	38	31.7%
Age 31–40	49	40.8%
Age 41+	33	27.5%
MSMEs	82	68.3%
Medium Enterprises	38	31.7%

Source: Own calculations

The respondent profile shows a balanced mix of genders, with males forming a slightly higher proportion than females. The age distribution indicates that most respondents fall within the 31–40 age group, representing mid-career professionals with substantial experience. Younger respondents aged 20–30 also form a significant portion, bringing modern perspectives and technological awareness. Participants aged above 41 contribute mature insights, helping balance the survey responses. Most respondents belong to MSMEs, reflecting the dominance of small businesses in the economic structure. The inclusion of medium enterprises ensures a broader understanding of business environment impacts across different organizational sizes.

Table 2: Impact of Internal Environment Factors

Internal Factor	Mean Score (out of 5)	Impact Level
Leadership	4.38	Very High
Organizational Culture	4.22	High
HR Capability	4.31	Very High
Financial Strength	4.12	High
Operational Efficiency	4.26	Very High

Source: Own calculations

The mean scores clearly indicate that internal environment factors strongly influence business performance. Leadership received the highest score, showing its critical role in guiding vision, motivation, and decision-making. HR capability is also

highly rated, suggesting that skilled employees directly improve productivity and efficiency. Operational efficiency remains vital, as streamlined processes lead to better cost control and customer satisfaction. Organizational culture fosters teamwork and innovation, thereby enhancing overall performance. Financial strength, though slightly lower in score, still shows a strong impact, enabling firms to invest, expand, and manage risks.

Table 3: Impact of External Environment Factors

External Factor	Mean Score	Impact Level
Economic Factors	4.18	High
Technological Change	4.32	Very High
Government Policies	4.05	High
Social Environment	3.98	Moderate
Competitive Pressure	4.29	Very High

Source: Own calculations

External factors are rated highly, indicating that businesses recognize their strong influence on performance. Technological change is the most impactful, showing that firms must continuously upgrade to remain competitive. Competitive pressure also scores high, highlighting the need for innovation and strategic positioning. Economic conditions significantly shape profitability, costs, and business decisions. Government policies moderately affect operations through taxation, compliance, and regulatory frameworks. Social factors, though slightly lower in score, still influence customer preferences and market demand.

Correlation Analysis

Variable Pair	Correlation (r)	Relationship
Internal Environment vs Business Performance	0.82	Strong Positive
External Environment vs Business Performance	0.76	Strong Positive
Combined Factors vs Performance	0.88	Very Strong

Source: Own calculations

The strong correlation (0.82) between internal environment and business performance shows that internal strengths directly

enhance outcomes. External environment also has a strong positive correlation (0.76), suggesting that businesses must adapt to outside forces. High correlation values indicate that both environments are essential for sustained success. The combined correlation value of 0.88 is very strong, proving that performance depends on both internal and external alignment. Firms with better adaptability to external changes achieve higher performance levels. Overall, the data confirms that environmental analysis is crucial for strategic planning and decision-making.

Findings

1. Internal environment plays a crucial role, particularly leadership, HR quality, and operational efficiency.
2. Technological change and competition are the most influential external forces.
3. Strong internal capabilities enhance the organization's ability to adapt to external challenges.
4. A combined environmental analysis provides a better prediction of performance.
5. Businesses that ignore environmental scanning face strategic failures and reduced competitiveness.

Recommendations

1. **Strengthening leadership development** through training programs.
2. **Adopt technological innovations** to improve efficiency and market responsiveness.
3. **Develop a positive organizational culture** to increase commitment and productivity.
4. **Improve environmental scanning** through SWOT, PESTLE, and competitor analysis.
5. **Enhance financial planning** for long-term sustainability.

Invest in human resources to build internal capability.

Conclusion:

This study underscores that both the internal and external environment play a crucial role in determining how well a

business performs. Internal elements—such as leadership quality, organizational culture, employee capability, and the efficiency of operations—shape the organization's preparedness and its ability to implement strategies successfully. On the other hand, external influences including economic shifts, technological progress, competitive pressures, and regulatory frameworks create the broader conditions within which businesses must operate.

The performance of any organization is ultimately the result of how effectively it balances its internal strengths with the demands and challenges of the external environment. Companies that consistently monitor environmental changes, align their capabilities with emerging opportunities, and respond proactively are better equipped to achieve sustained growth and maintain a competitive position.

In an era of rapid change and rising uncertainty, mastering the dynamics of the business environment has become a critical requirement rather than an optional strategic exercise. A comprehensive understanding of these forces enables firms to remain resilient, innovative, and adaptable, ensuring their long-term success in an increasingly complex global marketplace.

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CHAPTER 13

Business Development of Mutual Funds

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Abastract

A common support is a plot in which a few individuals contribute their cash for a common monetary cause. The collected cash contributes to the capital advertise and the cash, which they earned, is separated based on the number of units, which they hold. The common support industry begun in India in a little way with the UTI Act making what was viably a little reserve funds division inside the RBI. Over a period of 25 a long time this developed decently effectively and gave financial specialists a great return, and hence in 1989, as another coherent step, open segment banks and monetary educate were permitted to coast common reserves and their victory encouraged the government to permit the private segment to attack into this zone. The points of interest of shared finance are proficient administration, enhancement, economies of scale, straightforwardness, and liquidity. The drawbacks of common finance are tall costs, over-diversification, conceivable assess results, and the failure of administration to ensure a prevalent return. The greatest issues with shared reserves are their costs and expenses it incorporates Buy expense, Recovery charge, Trade charge, Administration charge, Account expense & Exchange Costs. There are some loads which include to the fetched of common finance. Stack is a sort of commission depending on the sort of reserves. Mutual

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reserves are simple to purchase and offer. You can either purchase them specifically from the support company or through a third party. Sometime recently contributing to any stores one ought to consider a few figures like objective, chance, Finance Manager's and plot track record, Fetched figure etc. There are numerous, numerous sorts of shared reserves. You can classify stores-based Structure (open-ended & close-ended), Nature (value, obligation, adjusted), Speculation objective (development, wage, cash advertise) etc. A code of conduct and enlistment structure for shared support middle people, which were in this way ordered by SEBI. In expansion, this year AMFI was included in several improvements and upgrades to the administrative framework.

The most critical drift in the shared support industry is the forceful extension of the remote possessed common support companies and the decrease of the companies drifted by nationalized banks and littler private segment players. Reliance Shared Finance, UTI Common Support, ICICI Prudential Shared Finance, HDFC Shared Finance and Birla Sun Life Common Support are the best five shared finance company in India. Reliance common subsidizing is considered to be most dependable common reserves in India. Individuals need to contribute in this institution since they know that this institution will never disappoint them at any taken a toll. You ought to continuously keep this into your intellect that if specific shared financing conspire is on bigger scale at that point following time, you might not get the same comes about so being a cautious financial specialist you ought to take your major step constantly something else you will be incapable to get the tall returns. This study explores the viability of the mutual fund business in India, focusing on the structural evolution of the industry from a government-led sector to a competitive private-market landscape. The research analyses the operational mechanics of mutual funds, including professional management, diversification benefits, and cost structures (loads and management fees). By evaluating the competitive standing of top Asset Management Companies (AMCs) like Reliance, ICICI, and HDFC, the study emphasizes the importance of performance metrics in guiding investor decisions. The findings highlight that while mutual funds offer superior liquidity and diversification, investor success depends heavily on transparency, cost management, and a cautious approach to market volatility.

Introduction:

The Indian mutual fund industry originated with the establishment of the Unit Trust of India (UTI) as a division of the RBI. Over several decades, the sector transitioned from a public-sector monopoly to a thriving open market, allowing entry to private and foreign entities under SEBI regulations.

A mutual fund functions as a collective investment vehicle where individual investors pool their capital for a common financial goal. These funds are professionally managed and invested in capital markets, with profits distributed among unitholders proportionately. While the industry offers significant advantages such as economies of scale and professional management, it faces challenges including high transaction costs (loads), over-diversification, and tax implications. Today, the industry is characterized by the aggressive expansion of foreign-owned companies and the dominance of leading players like HDFC and ICICI, making it essential for investors to evaluate schemes based on risk-adjusted track records rather than just historical returns. To compare the efficacy of public vs. private sector fund management in delivering superior market returns. When the Indian government introduced Unit Trust of India (UTI) in 1963, it was the first launching of a mutual fund in India. In the Indian mutual fund industry, UTI held a monopoly until 1987. A plethora of other Indian financial companies under government control then developed their own funds. Among them were Punjab National Bank, Canara Bank, and State Bank of India. In 1993, the government headed by Congress proposed historic constitutional modifications that opened this market to private firms under the Liberalization, Privatization, and Globalization (LPG) regime. Kothari Pioneer, which eventually combined with Franklin Templeton, was the first private sector fund to operate in India.

Concept of Mutual Funds:

A mutual fund is a shared financial pool into which investors deposit funds to be invested according to a predetermined goal. As a result, the fund is jointly owned, or "mutual," by all investors. An individual investor owns a share of the fund in proportion to the contribution amount they have made to the fund's overall value.

Mutual funds are trusts that take deposits from investors and use those funds to purchase a variety of financial instruments in line with the goals outlined in the trust agreement. The goal is to minimize risk and optimize returns on investment for members. A mutual fund operates as a company, and its fund manager's job is to properly oversee investor contributions and provide investors with a return on their investment after subtracting appropriate management costs.

Definition

An investment that combines your money with the money of an infinite number of other investors is called a mutual fund. You receive shares of the fund in exchange, as do the other investors. The assets of the fund are allocated into the fund's investment portfolio in accordance with an investment goal. Investing mostly in the stocks of rapidly expanding smaller businesses or market niches, aggressive growth funds aim to achieve long-term capital growth. Capital appreciation funds are another name for aggressive growth funds.

Why to select Mutual Funds?

The risk-return trade-off shows that an investor can expect higher returns if he is willing to take on more risk, and vice versa if he is interested in lower risk instruments, which would be satisfied by lower returns. For instance, if an investor chooses bank FDs, which offer moderate returns with little risk, he can expect a moderate return, but as he moves forward, he can also expect a slightly higher return on capital protected funds and profit-bonds, where the risk also rises proportionately.

Mutual funds offer professional management, diversification, convenience, and liquidity, which is why investors choose them as their main investment vehicle. Mutual fund investments are not risk-free, though. This can be attributed to the fact that the pooled funds are invested in both the stock markets, which carry a higher risk but potentially yield higher returns, and debt funds, which are less risky. The high level of risk associated with hedge funds stems from their primary trading in the highly volatile derivatives market.

Return Risk Matrix:

(https://www.advisorkhoj.com/sbimf/Mutual-Funds-and-Stock-Investing:-Do-you-know-the-5-differences)

Growth in Assets under Management

Source : https://www.tradewell.in/mutual-fund/mutual-fund-history)

The growth of the assets under management over time is shown on the graph.

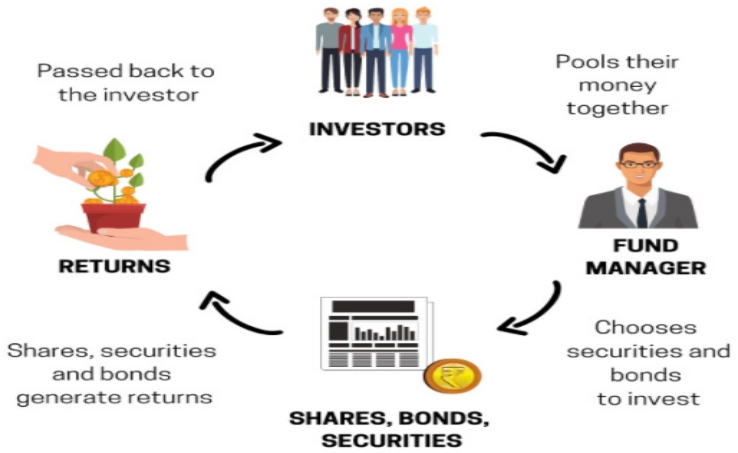
Objectives of the Study:

- To assess the historical evolution and regulatory framework of the Indian mutual fund industry under SEBI and AMFI.
- To analyse the cost-benefit ratio of mutual fund investments

by examining various fees (Management, Redemption, and Exchange costs) and their impact on investor returns.

- To evaluate the performance of selected schemes (Large Cap and Small Cap) using risk-adjusted models, specifically the Sharpe, Treynor, and Jensen's Alpha ratios.
- To identify investor preferences and perceptions regarding risk and stability, particularly among middle-income demographics.

Working of Mutual Funds:



Sources: https://rupiko.in/the-mother-of-all-investment-avenues/)

The common support collects cash straightforwardly or through brokers from speculators. The cash is contributed in different disobedient depending on the objective of the conspire. The wage produced by offering securities or capital appreciation of these securities is passed on to the financial specialists in extent to their venture in the plot. The ventures are separated into units, and the esteem of the units will be reflected in Net Resource Esteem or NAV of the unit. NAV is the showcase esteem of the resources of the conspire short its liabilities. The per unit NAV is the net resource esteem of the conspire partitioned by the number of units extraordinary on the valuation date. Shared finance companies give day by day net resource esteem of their plans to their speculators. NAV is critical, as it will decide the cost at which you purchase or recover the units of a conspire. Depending on the stack structure of the plot, you have to pay section or exit stack.

Factors Affecting Mutual Funds:

- Each venture comes with a certain degree of chance. Value reserves tend to be more unstable, given their introduction to stock markets. Obligation stores are generally less hazardous but still not totally risk-free. A few dangers that can affect shared finance speculations are: are generally less hazardous but still not totally risk-free. A few dangers that can affect common support ventures are:
- **Market Risk**: Hazard of misfortune due to variables influencing the generally execution of monetary markets.
- **Liquidity Risk:** Venture may end up illiquid due to need of buyers.
- **Credit Risk:** Chance of default in obligation reserves if the guarantor comes up short to repay.
- **Interest Rate Risk:** Chance of bond costs falling with a rise in intrigued rates.
- **Inflation Risk:** Chance of expansion outpacing your speculation returns. Being mindful of the dangers can help you make sensible support choices that adjust with your hazard craving. For occurrence, value stores are best suited for financial specialists with a high-risk resistance and long residency.

Mutual Funds in India:

In 1963, the day the concept of Shared Finance took birth in India. Unit Believe of India welcomed financial specialists or maybe to those who accepted in reserve funds, to stop their cash in UTI Shared Finance.

For 30 a long time it goaled without a single moment player. Although the 1988 year saw a few unused common support companies, but UTI remained in a restraining infrastructure position.

The execution of shared stores in India in the starting stage was not indeed closer to palatable level. Individuals occasionally caught on, and of course contributing was out of address. But yes, a few 24 million shareholders were usual with ensured tall returns by the starting of liberalization of the industry in 1992. This great record of UTI got to be showcasing apparatus

for unused participants. The desires of speculators touched the sky in productivity figure. Be that as it may, individuals were miles absent from the readiness of dangers calculate after the liberalization.

The net resource esteem (NAV) of common stores in India declined when stock costs begun falling in the year 1992. Those days, the showcase controls did not permit portfolio shifts into elective speculations. There was or maybe no choice separated from holding the cash or to advance proceed contributing in offers. One more thing to be famous, since as it were closed-end stores were coasted in the showcase, the speculators dis-invested by offering at a misfortune in the auxiliary advertise.

The execution of common stores in India endured subjectively. The 1992 stock showcase outrage, the misfortunes by disinvestment and of course the need of straightforward rules in the whereabouts shaken certainty among the speculators. Mostly owing to a moderately frail stock advertise execution, shared reserves have not however recouped, with reserves exchanging at a normal markdown of 1020 percent of their net resource esteem.

The securities and Trade Board of India (SEBI) came out with comprehensive direction in 1993 which characterized the structure of Common Finance and Resource Administration Companies for the to begin with time.

The supervisory specialist received a set of measures to make a straightforward and competitive environment in shared reserves. A few of them were like unwinding speculation confinements into the showcase, presentation of open-ended reserves, and clearing the portal for common stores to dispatch benefits plans.

The degree was taken to make common stores the key instrument for long-term sparing. The more the assortment advertised, the quantitative will be speculators.

Several private segments Common Stores were propelled in 1993 and 1994. The share of the private players has risen quickly since at that point. Right now, there are 34 Shared Finance organizations in India overseeing 1,02,000 crores.

At final to specify, if common support companies are performing with lower dangers and higher productivity inside a brief span

of time, more individuals will be slanted to contribute until and unless they are completely taught with the dos and don'ts of shared reserves.

Mutual support industry has seen a parcel of changes in past few a long time with multinational companies coming into the nation, bringing in their proficient ability in overseeing reserves around the world. In the past few months there has been a union stage going on in the common support industry in India. Presently financial specialists have a wide run of Plans to select from depending on their person profiles.

Mutual Funds Company in India:

The concept of shared reserves in India dates back to the year 1963. The time between 1963 and 1987 checked the existence of as it were one common support company in India with Rs. 67bn resources beneath administration (AUM), by the conclusion of its restraining infrastructure time, the Unit Believe of India (UTI). By the conclusion of the 80s decade, few other shared finance companies in India took their position in common support showcase. The unused sections of shared finance companies in India were SBI Common Finance, Canbank Common Support, Punjab National Bank Shared Finance, Indian Bank Shared Support, Bank of India Mutual Finance. The succeeding decade appeared a modern skyline in Indian shared finance industry. By the conclusion of 1993, the add up to AUM of the industry was Rs. 470.04 bn. The private segment reserves begun entering the finance families. In the same year the to begin with Shared Finance Directions came into existence with re-registering all common stores but UTI. The directions were advance given a re-examined shape in 1996. Kothari Pioneer was the to begin with private division shared finance company in India which has presently blended with Franklin Templeton. Fair after ten a long time with private division players infiltration, the add up to resources rose up to Rs. 1218.05 bn. Nowadays there are 33 common support companies in India.

Major Companies in India

ABN AMRO Mutual Fund	Reliance Mutual Fund
Birla Sun Life Mutual Fund	Standard Chartered Mutual Fund
Bank of Baroda Mutual Fund	Franklin Templeton India Mutual Fund
HDFC Mutual Fund	Morgan Stanley Mutual Fund India
HSBC Mutual Fund	Escorts Mutual Fund
Prudential ICICI Mutual Fund	Alliance Capital Mutual Fund
State Bank of India Mutual Fund	Benchmark Mutual Fund
Tata Mutual Fund	Can bank Mutual Fund
Unit Trust of India Mutual Fund	LIC Mutual Fund

Prospects of Mutual Funds in India: Money related specialists accept that the future of Shared Stores in India will be exceptionally shinning. It has been assessed that by March-end of 2010, the common support industry of India will reach Rs 40,90,000 crore, considering the add up to resources of the Indian commercial banks. In the coming 10 a long time the yearly composite development rate is anticipated to go up by 13.4%.

- 100% development in the final 6 a long time.
- Number of remote AMC's are in the line to enter the Indian markets like Devotion Ventures, US based, with over US$1trillion resources beneath administration around the world.
- Our sparing rate is over 23%, most elevated in the world. As it were channelizing these reserve funds in shared reserves division is required.
- We have around 29 shared reserves which is much less than US having more than 800. There is a huge scope for development.
- 'B' and 'C' course cities are developing quickly. Nowadays most of the common stores are concentrating on the 'A' lesson cities. Before long they will discover scope in the developing cities.
- Common support can enter rurales like the Indian protections industry with basic and restricted items.
- SEBI permitting the MFs to dispatch product common stores.

- Accentuation on superior corporate administration
- Attempting to control the late exchanging hones.
- Presentation of Monetary Organizers who can give require based counsel. Looking at the past improvements and combining it with the current patterns it can be concluded that the future of Common Stores in India has parcel of positive things to offer to its financial specialists.

Tripathi, Shivam, and Dr Gurudutta P. Japee. "Performance Evaluation of Selected Equity Mutual Funds in India." GAP GYAN-A Global Journal of Social Sciences (2020). This study deals with the equity mutual funds that are offered for investment by the varied fund houses in India; this study mainly focused on the performance of selected-cap, mid-cap; small -cap) open-end fund schemes about the relationship between risk and return. Analysing the financial performance of open-end fund schemes using statistical metrics like as Jensoni's alpha, beta, standard deviation, and Sharpe ratios is the main goal of this research project. In a very erratic market, the researcher found that 10 out of 15 funds did well. The researcher discovered that before making an investment, an investor needs to take the fund's risk ratios into account. Investors will find the research study's conclusions useful when making future investing selections.

Bhagyasree, N., and Battini Kishori. "A study on performance evaluation of mutual funds schemes in India." International Journal for Innovative Research in Science & Technology 2.11 (2016): 812-816. The present paper investigates the performance of open-ended, growth-oriented equity schemes for the period from April 2011 to March 2015 of transition economy. Daily closing NAV of different schemes have been used to calculate the returns PG. 19 from the fund schemes. BSE-Sensex has been used for market portfolio. Sharpe, Treynor, and Jensen's measure was used to assess the past performance of the chosen schemes; the findings will help investors make better investment choices. Out of 30 mutual fund schemes, 14 beat the benchmark return, according to the analysis. Additionally, the results revealed that certain schemes had underperformed; these schemes were having trouble diversifying. All of the schemes in the analysis had positive Sharpe ratios, indicating that the funds were yielding returns higher than the risk-free rate. According to the Jensen measure results, 19 of the 30 schemes had positive

alpha, indicating that they performed better. **Bhavsar, A. C., and Akshay Damani.** "A comparative study of the performance of selected mutual fund growth schemes from the private sector and public sector schemes in India." **Anvesha 7.1 (2014**). The paper attempts a comparative analysis of the performance of selected private and public sector mutual funds. Findings indicate that public sector mutual funds have been better performers than their private sector counter parts. Further public sector funds have been ranked higher under the Sharpe and Treynor ratio, whereas private sector funds have been ranked higher under the Jensen's Alpha.

Research Methodology

- **Statement of problem**

  The statement of problem is "Business Developing of Mutual Fund."

- **Research Objective**
  - To assess the performance of chosen schemes based on risk and return, and to determine if the schemes are outperforming or underperforming the benchmark by comparing their performance to the benchmark index.
  - To Analyze the performance of a few chosen schemes using the Treynor, Jensen, and Sharpe models for evaluating portfolio performance.

- **Research Design**

  The research design used in this research is the primary method. The data is collected from various people. This data is collected for the analysis of the performance of the schemes.

- **Sampling Design**
  - **Population of the study**

    The population consists of the equity large cap open ended mutual funds schemes of all AMCs which is provided by the HDFC LIFE.

  - **Sample Size**

    The sample is consisting of randomly selected 34 mutual fund schemes. 20 of 34 schemes are equity large cap open ended regular mutual fund schemes and the other

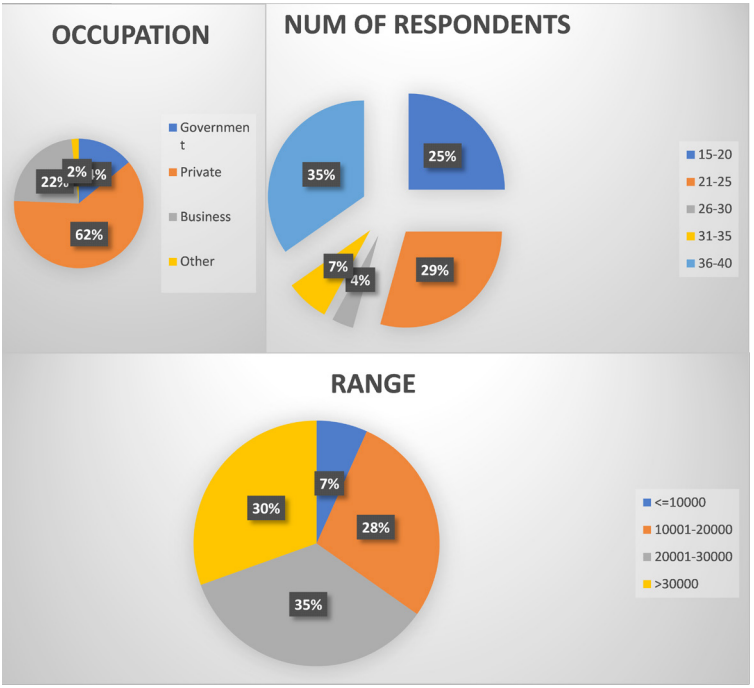
14 schemes are equity Small cap open ended regular mutual fund schemes.

- **Sources of Data**

  Annual reports of the funds have been used for the data collection. For this purpose, different sources have been used; Asset Management Companies of funds, Stock exchanges and internet.

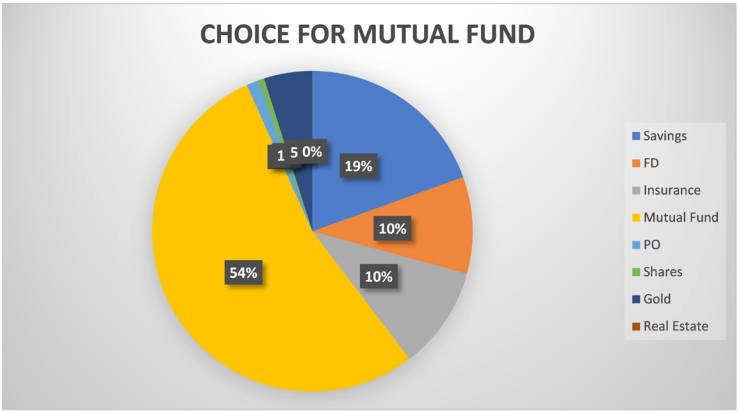
- **Limitation of the Study**
  - The study includes performance of mutual fund schemes of last five years but we cannot judge them complete on the same ground as the last 3 years have been under global crisis and it had affected the financial markets very much.
  - The minor difference of values in every source made the answers to fluctuate from actual value.

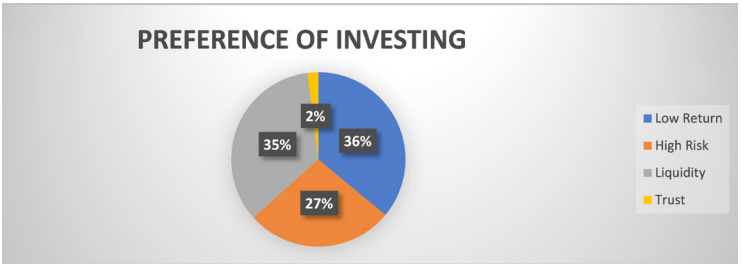
Data Analysis and Data Interpretation:



Choice for Mutual Fund	Num of Respondents	Percentage
Savings	32	19
FD	16	10
Insurance	17	10
Mutual Fund	88	54
PO	2	1
Shares	1	1
Gold	8	5
Real Estate	0	0
TOTAL	164	100

Source: Own Calculation of primary survey





Source: Own calculations of primary survey

Findings:

- **Target Demographic (Age Group 36-40):** People in this age group are typically in their prime earning years and are looking for stable, long-term investments. They are likely

to have some disposable income, making them potential investors in mutual funds.

- **Private Sector Employment:** People working in the private sector are often more open to alternative investment options, especially those that can supplement their retirement plans or offer growth potential outside of traditional savings accounts.
- **Family Monthly Income (₹20,001 to ₹30,000):** This income range indicates a middle-income group that might seek investment opportunities with moderate risk and returns. Mutual funds, which offer a balance between risk and return, fit well within this group's financial goals.
- **Preference for Mutual Funds:** Since most people prefer to invest in mutual funds, this suggests a growing awareness and interest in this type of investment. Mutual funds are perceived as more accessible, professional-managed, and relatively lower-risk compared to direct stock investments.
- **Perception of Mutual Funds as Good Investments:** The belief that mutual funds are a good investment option reinforces the potential for continued growth in this sector. People tend to stick with investment options they trust, and the perception of mutual funds as a sound choice signals that they could be willing to invest further.
- **Preference for Low Return Investments:** This suggests a risk-averse mind-set, where people prefer safer, lower-return investments rather than higher-risk, high-reward opportunities. Mutual funds typically offer a balance of risk and return, often in the form of low-to-moderate risk options like debt funds or balanced funds, which would appeal to this demographic.

Conclusion

Based on the information, here is the conclusion regarding whether developing a mutual fund business is a good idea: Given these points, developing a mutual fund business is a **promising opportunity**. The target demographic (aged 36-40 with a family income of ₹20,001 to ₹30,000) shows signs of interest in mutual funds as a stable, low-risk investment option. Their preference for low-return investments aligns with the nature of many mutual fund offerings, which provide moderate returns with

managed risk. Additionally, the belief in mutual funds as a good investment further supports the idea that there is a solid market for these financial products.Overall, this suggests that the mutual fund business could see growth and increased customer engagement in this segment. It would be essential to focus on educating potential investors, providing low-risk mutual fund options, and building trust to ensure success in this market.

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CHAPTER 14

An Analytic Study of the Impact of Covid-19 on Financial Performance of Selected Pharmaceutical Companies in India

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Abstract

Global economic systems experienced unprecedented disruptions because of the COVID-19 pandemic, which had a significant impact on supply chains for healthcare, financial stability, and industrial performance. During this crisis, India, one of the biggest pharmaceutical manufacturers in the world, had both significant obstacles and special opportunities. Based on market capitalisation as of April 2025, Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd. are the three top Indian pharmaceutical businesses whose financial performance is examined in this study. Using only secondary data from annual reports, stock market filings, and government databases, the analysis covers a pre-pandemic period (2017–18 to 2019–20) and a post-pandemic recovery phase (2021–22 to 2023–24).The study examines how the pandemic impacted short-term solvency, long-term financial structure, and earnings performance using a thorough ratio analysis approach that includes liquidity, leverage, and profitability

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measurements and is backed by descriptive statistical tools. The results show that Sun Pharmaceutical Industries Ltd. suffered short-term financial strain, as evidenced by weakened liquidity and volatile profitability immediately following the outbreak, whereas Divi's Laboratories Ltd. and Cipla Ltd. showed improved liquidity and profitability in the post-COVID period. Overall, the analysis shows that the Indian pharmaceutical industry demonstrated significant financial resilience, highlighting its crucial role throughout the pandemic and its ability to adjust in the face of severe market instability. The study emphasises the strategic importance of strong capital structures and operational readiness during difficult times and offers insightful information about the financial flexibility of pharmaceutical companies.

Keywords: *COVID-19; Impact on Financial Performance; Pharmaceutical Companies; Ratio Analysis; Profitability; Leverage and Liquidity.*

Introduction

The COVID-19 pandemic, declared by the World Health Organisation (WHO) as a global health emergency and later as a global pandemic, created significant disruptions across the world. More than 200 countries were affected, and governments were forced to impose lockdowns, restrict mobility, and suspend economic activities to prevent the spread of the virus. In India, as of 10 August 2020, the Ministry of Health reported 2,215,074 confirmed cases and 44,386 deaths. The pandemic created considerable instability, affecting production, transport services, employment, and financial performance across industries.

With just four hours' warning, the Indian government declared a nationwide lockdown on March 24, 2020. Strict rules were established by the Union Ministry of Home Affairs, which suspended all commercial, industrial, educational, and transit services. Police, emergency medical treatment, electricity, water supply, sanitation, banking, insurance, telecommunications, postal services, and media were the only services allowed to function. The Disaster Management Act of 2005 made it illegal to violate containment guidelines. Consequently, 1.3 billion people's livelihoods were impacted by one of the world's strictest lockdowns on the Indian economy.

The pharmaceutical industry was in a unique position during these changes. Despite being classified as a vital industry, it encountered difficulties such as workforce shortages, transportation bottlenecks, shortages of raw materials, and shifting demand patterns. At the same time, the need for medicines, respiratory drugs, APIs, and critical-care treatments surged due to the health emergency. This dual scenario makes it essential to study the financial performance of major Indian pharmaceutical companies before and after the COVID-19 pandemic.

1. Pharmaceutical Sector:

The pharmaceutical sector is a critical component of global healthcare systems because it is responsible for the development, manufacture, and distribution of medicines. It plays a vital role in public health, life expectancy, and disease management. Pharmaceutical companies work within regulatory frameworks established by international and national agencies to ensure drug safety, efficacy, and quality.

In developing countries like India, the sector is highly significant due to its large population, rising healthcare needs, and growing demand for affordable medicines. The pharmaceutical industry also contributes substantially to employment, export earnings, and technological advancement

2. Indian Pharmaceutical Industry: An Overview

India ranks third in the world in terms of volume and thirteenth in terms of value, making it one of the biggest producers of pharmaceuticals. The nation is frequently referred to as the "Pharmacy of the World" because of its significant contribution to the delivery of reasonably priced generic medications to international markets.

The following are some of the key features of the Indian pharmaceutical industry:

- A strong generics manufacturing base
- More than 3,000 pharmaceutical companies and over 10,000 manufacturing units
- A significant share in global vaccine production

- An expanding API (Active Pharmaceutical Ingredients) sector
- Exports to more than 200 countries
- Growth supported by government initiatives such as Pharma Vision 2020 and Jan Aushadhi.

Before COVID-19, the industry showed strong growth in domestic and foreign markets. During and after the pandemic, the sector adapted through increased digitalisation, regulatory reforms, telemedicine support, and a focus on supply-chain resilience

3. Overview of the Companies:

This study focuses on three leading Indian pharmaceutical companies selected on the basis of market capitalisation and availability of financial data from 2017–18 to 2023–24.

3.1 Sun Pharmaceutical Industries Ltd.:

Sun Pharma is India's largest pharmaceutical company and a global leader in branded generics. Founded in 1983, it operates in more than 100 countries and employs over 41,000 individuals. The company holds more than 35 of the top 300 pharmaceutical brands in India and specialises in chronic therapies such as cardiology, psychiatry, neurology, gastroenterology, and diabetology. Sun Pharma derives substantial revenue from international markets, particularly the United States.

3.2 Divi's Laboratories Ltd.:

Divi's Laboratories, established in 1990, is one of the world's leading manufacturers of Active Pharmaceutical Ingredients (APIs) and intermediates. Operating in over 100 countries, the company maintains large-scale manufacturing facilities at Hyderabad, Visakhapatnam, and Kakinada. It has a strong export-driven revenue model, accounting for approximately 90% of total sales. Divi's is recognised for its compliance with global regulatory standards and its API-centric business model.

3.3 Chemical Industrial & Pharmaceutical Laboratories Ltd. (Cipla Ltd.):

Cipla, founded in 1935, is one of India's oldest and most trusted pharmaceutical companies. It manufactures over 1,500 products

across therapeutic categories and exports to nearly 80 countries. Cipla has three major strategic business units:

1. APIs,
2. Respiratory medicines, and
3. Cipla Global Access.

The company has a major presence in India, North America, and Africa, and plays a significant role in supplying affordable medicines globally.

Objectives of a Study

The study has been undertaken to fulfil the following objectives:

1. To examine the financial performance of selected pharmaceutical companies pre- and post-COVID-19 in terms of liquidity, solvency, and profitability.
2. To propose suitable recommendations for companies and policymakers aimed at strengthening financial resilience and operational efficiency in the pharmaceutical sector.

Literature Review

Goel Ritika (2019) conducted a fundamental analysis of selected Indian pharmaceutical companies between 2013 and 2016 and highlighted significant variations in financial indicators across firms. Her study revealed that the relative financial strength of companies is segment-specific, demonstrating that industry-wide conclusions cannot be generalised without firm-level analysis. This underscores the need for focused comparative financial evaluations, especially during periods of macroeconomic disruption.

Mohanty Monalisa (2020) examined the financial performance of pharmaceutical firms using ratio analysis for the period 2015–2019. Her findings indicated strong liquidity and solvency positions but inconsistent profitability and operational efficiency. Such results reflect the sector's structural robustness while highlighting operational inefficiencies that may intensify during crises such as the pandemic.

Research Methodology and Design

The present study follows a quantitative and comparative research design to analyse the financial performance of three leading Indian pharmaceutical companies: Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd., based on market capitalization across two distinct periods: the pre-COVID phase (2017–18 to 2019–20) and the post-COVID phase (2021–22 to 2023–24). The year 2020–21 was excluded due to extreme distortions during the peak pandemic period. The study relies entirely on secondary data, collected from company annual reports, published financial statements, stock exchange filings, and publicly available industry databases. Financial ratios were selected as the primary analytical indicators because they provide a structured and comparable method for evaluating liquidity, profitability, and solvency performance over time.

To ensure a robust statistical evaluation, the study uses three categories of ratios: Liquidity Ratios (Current Ratio, Quick Ratio), Profitability Ratios (Net Profit Ratio, Net Operating Profit Ratio, Earnings Per Share), and Solvency/Return Ratios (Return on Total Assets, Return on Equity). These ratios were analysed using descriptive statistics to summarise trends and variations; paired samples correlation to assess the strength of relationships between pre- and post-COVID financial performance, and the paired samples t-test to determine whether observed differences across periods were statistically significant. Together, these tools form a comprehensive methodological framework for assessing how the COVID-19 pandemic influenced financial structure and performance within the Indian pharmaceutical sector.

Data Analysis and Interpretation

This part presents a comprehensive statistical analysis of the financial performance of Sun Pharmaceutical Industries Ltd., Divi's Laboratories Ltd., and Cipla Ltd. across the pre-COVID-19 and post-COVID-19 periods. The analysis uses descriptive statistics, correlation, and paired sample t-tests to evaluate changes in liquidity, profitability, and solvency. The purpose is to identify whether the pandemic produced statistically meaningful shifts in financial performance and to understand the stability or volatility of financial indicators across time.

1. Descriptive Statistics: Descriptive statistics provide an overview of the average performance of key financial ratios and their dispersion (standard deviation) across the pre- and post-COVID periods.

Table 1: Paired Samples Statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Current Ratio Pre-COVID-19	3.4533	9	2.25636	.75212
	Current Ratio Post Covid-19	4.7356	9	2.88878	.96293
Pair 2	Liquidity Ratio Pre-COVID-19	2.3144	9	1.52953	.50984
	Liquidity Ratio Post Covid-19	3.3692	9	2.00086	.66695
Pair 3	Net Profit Pre Covid-19	17.8867	9	8.45075	2.81692
	Net Profit Post Covid-19	18.8400	9	10.34255	3.44752
Pair 4	Net Operating Profit Pre-COVID-19	19.5133	9	7.20144	2.40048
	Net Operating Profit Post Covid-19	19.3833	9	10.16566	3.38855
Pair 5	ROTA Pre Covid-19	10.1700	9	4.93657	1.64552
	ROTA Post Covid-19	10.2489	9	6.15404	2.05135
Pair 6	ROE Pre Covid-19	11.8178	9	6.04874	2.01625
	ROE Post Covid-19	11.9811	9	6.78746	2.26249
Pair 7	EPS Pre Covid-19	24.7978	9	18.14908	6.04969
	EPS Post Covid-19	41.7100	9	35.17533	11.72511

1.1 Liquidity Ratios:

Current Ratio: The mean current ratio increased from 3.45 (pre-COVID) to 4.73 (post-COVID). This upward shift indicates that pharmaceutical companies improved their ability to meet short-term obligations after the pandemic. The rise suggests a deliberate strengthening of working capital as a protective measure against supply-chain disruptions and market uncertainties. The larger standard deviation in the post-COVID period reflects greater variation among companies, indicating that not all firms adopted liquidity strengthening to the same degree.

1.2 Profitability Ratios:

Net Profit Ratio: Net profit increased slightly from 17.88 to 18.84. This suggests that while profitability improved, the growth was modest. Increased demand for pharmaceuticals supported post-COVID earnings, but cost pressures such as higher logistics, safety protocols, and raw-material expenses limited profitability expansion.

Net Operating Profit Ratio: The net operating profit remained nearly unchanged (19.51 pre-COVID vs. 19.38 post-COVID). This indicates that core operating efficiency was largely stable. The pandemic did not drastically alter operating-level profitability despite disruptions.

1.3 Return Ratios:

ROTA (Return on Total Assets): ROTA remained almost constant (from 10.17 to 10.24), signifying stable asset utilisation across periods. Even during disruption, companies were able to effectively leverage their assets without a significant decline.

ROE (Return on Equity): ROE exhibited minor improvement (11.81 to 11.98), indicating consistent returns to shareholders. This consistency demonstrates financial resilience and the ability to sustain earnings through a global crisis.

Earnings Per Share (EPS): EPS showed the most substantial rise from 24.79 to 41.71. This significant jump suggests strong earnings growth for shareholders in the post-COVID period. However, the sharp increase in standard deviation reveals significant variation between companies, implying that some firms benefited much more than others.

2. Correlation Analysis: Correlation analysis measures the relationship between pre-COVID and post-COVID financial indicators. High positive correlation implies stability in financial behaviour across time.

Table 2: Paired Samples Correlations

		N	Correlation	Significance
Pair 1	Current Ratio Pre-COVID-19 & Current Ratio Post-Covid-19	9	.933	.000
Pair 2	Liquidity Ratio Pre-Covid-19 & Liquidity Ratio Post-Covid-19	9	.862	.003
Pair 3	Net Profit Ratio Pres-Covid-19 & Net Profit Ratio Post-Covid-19	9	.675	.046
Pair 4	Net Operating Profit Pre-Covid-19& Net Operating Profit Post-Covid-19	9	.562	.115
Pair 5	ROTA Pre-Covid-19 & ROTA Post-Covid-19	9	.688	.040
Pair 6	ROE Pre-Covid-19 & ROE Post-19	9	.682	.043
Pair 7	EPS Pre-Covid-19 & EPS Post-Covid-19	9	.755	.019

2.1 Strong and Significant Correlations:

- Current Ratio ($r = 0.933$, $p = 0.000$)
- Liquidity Ratio ($r = 0.862$, $p = 0.003$)
- EPS ($r = 0.755$, $p = 0.019$)

These correlations reveal strong continuity. Companies with strong liquidity and earnings before COVID remained strong afterward. The pandemic did not disrupt the relative ranking of firms in terms of liquidity or earnings performance.

2.2 Moderate Significant Correlations:

- Net Profit Ratio ($r = 0.675$, $p = 0.046$)
- ROTA ($r = 0.688$, $p = 0.040$)
- ROE ($r = 0.682$, $p = 0.043$)

These results show that profitability, asset returns, and equity returns remained consistent between the two periods, indicating that financial strength prior to COVID strongly predicted post-COVID outcomes.

2.3 Non-Significant Correlation:

- Net Operating Profit Ratio ($r = 0.562$, $p = 0.115$)

This indicates that operating-level profitability was more volatile. Variations across companies likely arose due to differences in production shutdowns, product-mix variations, varying levels of export dependency, and raw-material sourcing risks.

3. Paired Sample t-Test:

The paired sample t-test was conducted to examine whether the financial performance of the selected pharmaceutical companies changed significantly between the pre-COVID and post-COVID periods. Since the same firms were evaluated across two timeframes, this test appropriately measures whether the pandemic created meaningful statistical differences in key financial ratios.

Table 3 - Paired Samples Test									
Mean		Paired Differences					t	Diff.	Significance (2-tailed)
		Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	Current Ratio Pre-COVID-19 — Current Ratio Post Covid-19	-1.28222	1.12887	.37629	-2.14995	-.41450	-3.408	8	.009
Pair 2	Liquidity Ratio Pre-Covid-19 — Liquidity Ratio Post Covid-19	-1.05478	1.03145	.34382	-1.84762	-.26194	-3.068	8	.015
Pair 3	Net Profit Pre-Covid-19 — Net Profit Post-Covid-19	-.95333	7.76756	2.58919	-6.92401	5.01734	-.368	8	.722
Pair 4	Net Operating Profit Pre-COVID-19 — Net Operating Profit Post-COVID-19	.13000	8.54100	2.84700	-6.43519	6.69519	.046	8	.965
Pair 5	ROTA Pre-Covid-19 — ROTA Post-Covid-19.	-.07889	4.51937	1.50646	-3.55278	3.39501	-.052	8	.960
Pair 6	ROE Pre-Covid-19 — ROE Post-Covid-19.	-.16333	5.16512	1.72171	-4.13359	3.80693	-.095	8	.927
Pair 7	EPS Pre-Covid-19 — EPS Post-Covid-19.	-16.91222	24.56298	8.18766	-35.79300	1.96856	-2.066	8	.073

3.1 Significant Changes ($p < 0.05$):

The results show that **only the liquidity ratios**—Current Ratio ($p = 0.009$) and Quick Ratio ($p = 0.015$) recorded statistically significant differences. This indicates that pharmaceutical companies substantially improved their short-term solvency after COVID-19. The increase reflects a deliberate financial strategy: firms held more liquid assets, strengthened working capital, and reduced reliance on short-term liabilities to safeguard operations during uncertain conditions.

3.2 Non-Significant Changes ($p > 0.05$):

Profitability and return ratios: Net Profit Ratio, Net Operating Profit Ratio, Return on Total Assets (ROTA), Return on Equity (ROE), and Earnings Per Share (EPS) did not show statistically significant differences. Although the descriptive means increased slightly after the pandemic, the changes were not strong enough to be statistically meaningful. This suggests that the pharmaceutical sector maintained stable profitability and consistent returns, even during disruptions in supply chains and operational processes.

Overall, we can say that the t-test results indicate that COVID-19 had a significant impact on liquidity, but no major statistical impact on profitability or long-term financial performance. This demonstrates the industry's resilience: companies strengthened short-term financial safety while maintaining steady earnings and returns. In summary, liquidity was the most sensitive financial dimension affected by the pandemic, whereas profitability and solvency remained stable.

Conclusion and Recommendations

This study analysed the financial performance of Sun Pharma, Divi's Laboratories, and Cipla during the pre-COVID (2017–18 to 2019–20) and post-COVID (2021–22 to 2023–24) periods using ratio analysis, descriptive statistics, correlation, and paired t-tests. The results show that liquidity was the only financial area significantly affected by the pandemic. Both the Current Ratio and Quick Ratio increased substantially, and t-test values confirmed these differences as statistically significant. This indicates that companies strengthened their short-term solvency

by increasing liquid assets and adopting more cautious working-capital policies to manage operational uncertainties during the pandemic.Profitability and return ratios showed minor improvements but no statistically significant changes, meaning COVID-19 did not fundamentally alter earnings or long-term financial performance. EPS increased for some companies, but the variation across firms prevented statistical significance. Correlation results show strong continuity between pre- and post-COVID performance, confirming that financially strong companies before the pandemic continued to perform well afterwards. Overall, the findings indicate that while COVID-19 led to stronger liquidity behaviour, the pharmaceutical sector maintained stable profitability, returns, and financial resilience throughout the period.

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CHAPTER 15

"Fintech-Driven Financial Inclusion and Women's Economic Empowerment: An Econometric Analysis from Gujarat"

Hiral Parmar*

Abstract

The expansion of digital finance through fintech platforms has played a significant role in promoting financial inclusion in India, particularly among women. Despite substantial progress in access to formal financial services, evidence on whether fintech-driven digital finance translates into meaningful economic empowerment for women remains limited. This study examines the relationship between digital finance and women's economic empowerment in Gujarat using an econometric approach based exclusively on secondary data.

The study utilises data from nationally representative sources, including the National Family Health Survey (NFHS-5) and publications of the Reserve Bank of India (RBI), to construct indicators of digital financial inclusion and women's economic empowerment. Regression-based econometric models are employed to analyse the association

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between digital finance indicators and empowerment outcomes, while controlling for relevant socio-economic characteristics.

The findings indicate a positive and statistically significant association between digital finance indicators and women's economic empowerment. However, the results also suggest that socio-economic disparities and structural constraints continue to limit the extent of empowerment gains. The study contributes to the empirical literature on digital finance and gender inclusion and offers policy-relevant insights for strengthening fintech-driven financial inclusion strategies for women in Gujarat.

Keywords: *Digital Finance; Financial Inclusion; Women's Economic Empowerment; Fintech; Econometric Analysis; Gujarat*

Introduction

Digital finance has emerged as a key driver of financial inclusion by enabling access to formal financial services through fintech innovations such as digital payments, mobile banking, and electronic financial platforms. In India, policy initiatives and technological advancements have significantly expanded the reach of digital financial services, with Gujarat emerging as one of the states experiencing rapid growth in digital payment infrastructure. While these developments reflect progress in financial inclusion, the extent to which digital finance contributes to women's economic empowerment remains an important empirical question.

Much of the existing evidence on financial inclusion focuses on access-based indicators, such as bank account ownership and enrolment in formal financial schemes. Although these indicators signal improvements in inclusion, they do not adequately capture women's actual participation in digital financial activities or the economic outcomes associated with such participation. Empirical studies increasingly suggest that access to financial services does not automatically translate into enhanced economic agency, particularly for women facing socio-economic and institutional constraints.

Table 1 presents selected secondary indicators related to women's access to digital finance and economic decision-making in Gujarat. While access to banking and digital infrastructure appears relatively high, the proportion of women

actively using digital financial services and participating in independent economic decision-making remains considerably lower. This disparity highlights the limitation of access-oriented measures and underscores the need for econometric analysis using secondary data to assess the relationship between digital finance and women's economic empowerment.

Table 1: Women's Digital Financial Access and Usage in Gujarat (Secondary Evidence)

Indicator	Percentage (%)
Women with bank accounts	92.1
Women owning a mobile phone	70.4
Women with access to digital payment platforms	58.6
Women using digital payments	42.8
Women making independent financial decisions	28.5

Source: National Family Health Survey-5 (2019–21), Ministry of Health and Family Welfare, Government of India; Reserve Bank of India Digital Payments Reports.

Against this backdrop, the present study examines the relationship between fintech-driven digital finance and women's economic empowerment in Gujarat using an econometric framework based on secondary data from nationally representative datasets. The study aims to contribute to the growing literature on digital finance and gender inclusion by providing empirical evidence relevant for regional policy formulation.

Review of Literature

Digital Finance and Financial Inclusion

Digital finance has emerged as an important mechanism for expanding financial inclusion by leveraging fintech innovations such as mobile payments, digital wallets, and app-based banking services. Demirgüç-Kunt et al. (2018) highlight that digital technologies reduce transaction costs and improve outreach, particularly in developing economies where traditional banking infrastructure is limited. In India, the rapid expansion of digital payment systems and fintech platforms has significantly increased formal financial access, supported by policy-led digitalisation and payment infrastructure development (Reserve Bank of India [RBI], 2022).

However, several studies caution against equating financial access with effective financial inclusion. Allen et al. (2016) argue that access to formal financial services does not necessarily ensure active participation or welfare improvements. Empirical evidence from developing countries suggests that while digital finance improves outreach, actual usage remains uneven across population groups (Suri & Jack, 2016). Indian studies also document the persistence of dormant accounts and low transaction intensity among women, indicating that access-based indicators may overstate the extent of meaningful inclusion (Chakravarty & Pal, 2013; Ghosh & Vinod, 2017).

Digital Finance and Women's Economic Empowerment

Women's economic empowerment is widely conceptualised in terms of control over income, participation in economic decision-making, and the ability to engage in productive activities (Kabeer, 1999; Malhotra, Schuler, & Boender, 2002). A substantial body of literature links financial inclusion with improved empowerment outcomes, suggesting that access to formal financial services enhances women's savings behaviour, resilience to economic shocks, and intra-household bargaining power (Ashraf, Karlan, & Yin, 2010; Dupas & Robinson, 2013).

More recent studies extend this discussion to digital finance and fintech adoption. Klapper and Singer (2017) argue that digital financial services can strengthen women's autonomy by offering greater privacy and convenience while reducing dependence on intermediaries. Similarly, Sahay et al. (2020) note that fintech-driven financial inclusion has the potential to promote gender equality by lowering informational and institutional barriers. Empirical findings, however, remain mixed. While some studies report positive associations between digital finance use and women's economic outcomes (Ravi & Gakhar, 2015; Buvinić & Furst-Nichols, 2016), others find limited or context-specific effects, particularly in settings characterised by low digital literacy and restrictive social norms (GSMA, 2019; Deshpande & Sharma, 2020).

Fintech Usage, Digital Capability, and Empowerment Mechanisms

An emerging strand of literature emphasises the distinction between financial access and actual usage of digital financial

services. Beck, Senbet, and Simbanegavi (2015) argue that financial inclusion becomes developmentally meaningful only when individuals actively and independently use financial services. In the context of fintech, the frequency, autonomy, and purpose of usage are critical in determining welfare and empowerment outcomes (Suri & Jack, 2016).

Digital financial capability—encompassing digital literacy, confidence in using technology, and understanding of financial products—has been identified as a key factor mediating the relationship between fintech usage and empowerment. Lyons and Kass-Hanna (2021) find that women with higher digital financial capability are more likely to use fintech services independently and derive economic benefits from such usage. Conversely, reliance on intermediaries, fear of fraud, and limited technological familiarity can constrain empowerment gains even when digital access exists (Morgan, Huang, & Trinh, 2019).

Research Gap

Despite growing scholarly interest in digital finance and women's empowerment, several gaps remain. First, many existing studies rely on secondary or nationally aggregated data, which limits the ability to capture behavioural dimensions such as autonomy, frequency, and purpose of fintech usage. Second, there is limited micro-level econometric evidence examining the relationship between fintech-driven financial inclusion and women's economic empowerment at the regional or district level in India. Third, relatively few studies explicitly model the mechanisms—such as digital financial capability—through which fintech usage translates into empowerment outcomes.

Addressing these gaps, "the present study employs secondary data from nationally representative datasets and applies an econometric framework to examine the relationship between fintech-driven digital finance and women's economic empowerment in Gujarat."

Objectives of Study

1. To examine patterns of digital finance access and usage among women in Gujarat using secondary data.

2. To analyse the relationship between digital finance indicators and women's economic empowerment.
3. To assess the role of socio-economic factors in influencing women's digital financial inclusion and empowerment.
4. To derive policy implications for strengthening fintech-driven financial inclusion for women.

Hypothesis of Study

1. **H1:** Digital finance indicators are positively associated with women's economic empowerment in Gujarat.
2. **H2:** Women with access to and usage of digital financial services exhibit higher participation in economic decision-making.
3. **H3:** Education and employment status significantly influence the relationship between digital finance and women's economic empowerment.
4. **H4:** Socio-economic disparities constrain the empowerment effects of digital financial inclusion.

Data Anaylsis and Methodology

Data Source

The study is based exclusively on secondary data obtained from the National Family Health Survey-5 (NFHS-5, 2019–21) conducted by the Ministry of Health and Family Welfare, Government of India. NFHS-5 provides state-level and individual-level information on women's access to financial services, mobile phone ownership, employment status, and participation in household decision-making. The empirical analysis focuses on women aged 18 years and above in Gujarat.

To supplement the analysis and contextualise digital finance trends, secondary information from Reserve Bank of India (RBI) publications—such as Digital Payments Reports—is referred to. However, all econometric estimations in the study are based on NFHS-5 data.

Description of Secondary Data Used

Table 2 presents key indicators related to digital finance access and women's economic empowerment in Gujarat, as reported in NFHS-5.

Table 2: Digital Finance and Women's Economic Empowerment Indicators in Gujarat

Indicator	Percentage (%)
Women having a bank or savings account	92.1
Women owning a mobile phone	70.4
Women with access to digital payment platforms	58.6
Women using digital payments	42.8
Women participating in household financial decision-making	28.5
Women currently employed	23.9

Source: NFHS-5 (2019–21), Gujarat State Fact Sheet; RBI Digital Payments Reports.

These indicators provide a descriptive foundation for examining the access–usage–empowerment gap among women.

Variables and Measurement

Dependent Variable: Women's Economic Empowerment

Women's economic empowerment is measured using NFHS-5 indicators capturing:

- Participation in household financial decision-making
- Employment status
- Control over own earnings

These indicators are analysed individually and also combined to construct a composite Women's Economic Empowerment Index using standard normalisation techniques.

Independent Variables: Digital Finance Indicators

Digital finance is proxied using:

- Bank account ownership and usage
- Mobile phone ownership
- Access to and usage of digital payment platforms

These variables represent fintech-driven financial inclusion.

Control Variables

The analysis controls for:

- Age
- Education level

- Marital status
- Place of residence (urban/rural)
- Household wealth index

Econometric Model Specification

To examine the relationship between digital finance and women's economic empowerment, the following econometric model is estimated:

Where:

- = women's economic empowerment indicator or index
- = digital finance indicators
- = socio-economic control variables
- = error term

Stage 2: Econometric Analysis

Binary Empowerment Outcomes

Binary empowerment outcomes such as participation in household financial decision-making and employment status are analysed using logit and probit models. These models estimate the probability of women being economically empowered as a function of digital finance indicators and socio-economic characteristics.

Where represents the logistic or normal cumulative distribution function.

Composite Empowerment Index

For the composite women's economic empowerment index, which is continuous in nature, Ordinary Least Squares (OLS) estimation is employed:

Estimation Issues

Robust standard errors are used in all estimations to correct for potential heteroskedasticity inherent in cross-sectional survey data. Multiple model specifications are estimated to assess robustness.

Results and Discussion

Descriptive Results

The descriptive analysis highlights a significant gap between financial access and effective empowerment. While over 90 percent of women in Gujarat possess a bank account, fewer than half report using digital payments, and less than one-third participate in independent financial decision-making. This gap indicates that access to digital finance does not automatically translate into economic empowerment.

Econometric Results

The econometric analysis reveals a positive association between digital finance indicators and women's economic empowerment outcomes. Women with access to bank accounts, mobile phones, and digital payment platforms are more likely to participate in household financial decision-making and economic activities. Education and employment status emerge as strong enabling factors, while socio-economic disparities continue to constrain empowerment outcomes.

The consistency of results across logit, probit, and OLS specifications provides confidence in the robustness of the findings.

Discussion

The findings suggest that fintech-driven digital finance contributes positively to women's economic empowerment, but its impact is conditional on socio-economic factors such as education, employment, and household wealth. Digital finance alone is insufficient to ensure empowerment without complementary interventions aimed at enhancing women's economic capabilities.

Conclusion and Policy Implications

The study provides empirical evidence on the relationship between digital finance and women's economic empowerment in Gujarat using secondary data and econometric analysis. While digital finance has expanded financial inclusion, empowerment outcomes remain uneven. Policymakers should complement

fintech initiatives with targeted interventions focusing on digital literacy, women's employment, and financial capability development to ensure inclusive and sustainable empowerment.

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CHAPTER 16

Benchmarking Credit Card Interest Rates Across Public and Provate Banks

Nidhi Bhoi* & Kajal Rajput**

Abstract

Credit card interest rate policy started by the Reserve Bank of India to given short time credit to the customer to ensure their short time financial needs. There are approximately 5-6% of the population are using the credit card in India. While penetration is low compared to countries like US, the numbers of active credit cards have surpassed 100 million, with significant growth rate in recent years. India's credit card penetration is estimated to be between 5% & 6% of the population. However, public sector banks have the same interest rate over a decade. Private banks demonstrate higher lending variability, whereas public banks show relative stability. Significant positive correlation was identified between the credit card interest rate of both types of banks. This study highlights the increasing involvement of private sector banks in credit card allotment, although public sector banks maintain a predominant role. These findings suggests that future policies should leverage the strengths of both types to build a more inclusive and efficient credit card system in India.

Keywords: *Reserve Bank of India (RBI), Inclusive Growth, Financial Inclusion, Credit Flow, Annual Percentage Rate (APR), EMI Conversion Interest Rate Etc.*

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Introduction

Credit card is a thin rectangular piece of plastic or metal issued by a bank or financial institution that allows the holder to borrow funds to pay for goods and services with trader that accept cards for payment. It functions as a type of loan where the money spent is borrowed from the card provider rather than taken from bank account. Credit cards are the best examples of plastic money, which allows people to make electronic transactions with the availability of their financial condition.

Types of Credit Cards

TYPE	CHARACTERISTIC
Cash back credit card	Earn money on Purchase
Travel reward credit card	Save on trips and flights
Points credit card	Flexible reward option
Store credit card	Exclusive discount and benefits
Business credit card	Manage and grow your business
Secured credit card	Build and repair your credit
Student credit card	Start your credit journey

Differences in interest rates of credit card

The interest rate applicable differs from one issuer to other and typically ranges between 1.5% to 3.5% per month (or 18% to 42% annually). Some credit card loans are secured by real estate, and can be about 12% to 18% APR, influenced by borrower creditworthiness, collateral value, and market condition. Typical credit cards have interest rates between 7 and 36% in the U.S., depending largely upon the bank's risk evaluation methods and the borrower's credit history. In India credit card interest rate is differ from private and public bank. The RBI has kept the policy rate unchanged at 6.50%, while the inflation rate in September,2024 peaked at 5.49% from 3.65% in the previous month. Here are the interest rates or finance charges levied by major public and private banks on credit cards.

The table showcases the monthly and annual percentage rates (MPR% and APR%) of credit card offered by top banks like HDFC, SBI, Axis, HSBC, IndusInd, Kotak Mahindra, RBL, and Yes Bank, providing an overview of their varying interest rate ranges.

Bank Name	Monthly Percentage Rate (MPR)%	Annual Percentage Rate (APR)%
HDFC Bank	3.40%	40.80%
SBI Bank	Up to 3.50%	Up to 42%
Axis Bank	Up to 3.60%	Up to 52.86%
HSBC Bank	At the discretion of the bank	At the discretion of the bank
IndusInd Bank	Up to 3.83%	Up to 46%
Kotak Mahindra Bank	Up to 2.49%	Up to 29.88%
RBL Bank	At the discretion of the bank	At the discretion of the bank
Yes Bank	Up to 2.4%	Up to 28.8%

Source: Finance Ministry

Review of literature

Sumit Agarwal (2015): Examining consumers' behaviors in choosing and using credits cards, this report was commissioned to present an empirical review of the credit card market, with the intention of providing insight into policy implementers in consumer protection within the UK market. The credit card consumption from the perspectives of economics, finance, marketing and psychology, and discuss (1) how consumers source for and switch between credit card contracts, along with the mistakes they commonly make; (2) the determinants of borrowing behavior using credit cards; (3) how consumers repay credit card debts and the impact of minimum repayment requirement presentation; (4) borrowing costs including interests and fees that consumers pay on credit cards; (5) the extent to which behavioral biases drive consumers' behaviors. Although majority of the literature focuses on the U.S. market, we believe that these findings are highly applicable to the UK owing to the similarities between both countries' credit card markets.

SL Gupta and Arun Mittal published "Comparative research of promotional studies adopted by public and private sector banks in India" in Asia-Pacific Business Review, July September 2008. According to the survey, the public sector is more dependable, but not as good as the private sector. A private sector bank is not as reliable as a public sector bank in terms of quality and innovation, but they are superior in terms of services both in terms of quality and creativity.

Ballabh (2002) examines the issues that have arisen as a result of the banking sector reforms. Financial markets around the world have become increasingly intertwined as a result of globalization and technological advancements. Banks must adopt new policies/strategies in response to changing market conditions if they are to survive in the environment.

Kumar (2006) found that bank nationalization in India marked a paradigm shift in banking, with the goal of shifting the focus from class to popular banking. Internationally, efforts are also being made to investigate the causes of low-income people's financial inclusion, recognizing it as both a problem and an opportunity. This is both an economic opportunity and a corporate social duty. Financial inclusion is a possibility as a commercially viable enterprise.

The Banking Industry is undergoing a paradigm transition in scope, content, structure, functions, and governance, according **to Laxman, Deen, and Badiger (2008)**. The information and communication technology revolution is having a significant impact on the banking industry's operational environment.

The future problems of technology in banking were explored by **Nair (2006).** The author also mentions how IT has a bright future in rural banking, but it is overlooked because it is generally thought to be unviable in this segment. A successful bank must be nimble and agile enough to respond to changing market conditions, the new market paradigm and poor risk management The key to extending the life of a product will be innovation of the provision of banking services to the underserved masses at the bottom of the pyramid.

Objective of the study

- Identifying patterns and variations in finance charges, penalty interest, and related fees across the banking sectors.
- Assessing the customer experience and value through associated facilities such as interest-free periods, EMI conversions, and fee waivers.
- Understanding the influence of regulatory frameworks and RBI policies on the pricing strategies of credit card products in public vs. private bank.

Significance of the study

1. Consumer Awareness and Financial Literacy:

This comparison helps consumers make informed financial decisions by understanding which bank offers more affordable or flexible credit card options, potentially avoiding debt traps caused by high or hidden interest charges.

2. Transperency in Banking Practices:

By analyzing interest rates and terms across public and private banks, the study promotes transparency and accountability, pushing banks toward fairer pricing strategies and improved discloser norms.

3. Policy Implications and Regulation:

The findings can be valuable to regulators like the RBI to review existing guidelines on credit card lending, interest capping, risk-based pricing, and consumer protection measures.

Research Methodology

Title of study:

Comparison of the credit card interest rate between private and public bank.

1. Research Design:

This study adopts a comparative, descriptive, and analytical research design, aimed at analyzing patterns, trends, and disparities in credit card interest rates charged by public and private banks.

The study is quantitative in nature, involving the statistical analysis of numerical data (interest rates, fees, charges) as well as qualitative insights through policy review.

2. Time frame of the Study:

The period of the analysis is from financial year 2014-15 to 2024-25 (10 years).

3. Scope of the Study:

1. Public sector banks
a. SBI Bank
2. Private sector banks
a. HDFC Bank

4. Data collection Method:

a. Secondary Data Sources:
- Annual reports of banks (2014 to 2024)
- RBI Publications: Financial stability Reports (FSRs), RBI Bulletins, Consumer Protection Framework

b. Quantitative Data Collected:
- Annual Percentage Rate (APR)
- EMI Conversion interest rate

5. Data Analysis Techniques:

Comparative line diagram with Trend analysis for ten yearly analyses, mean, standard deviation, coefficient of variation & correlation coefficient is used for the study.

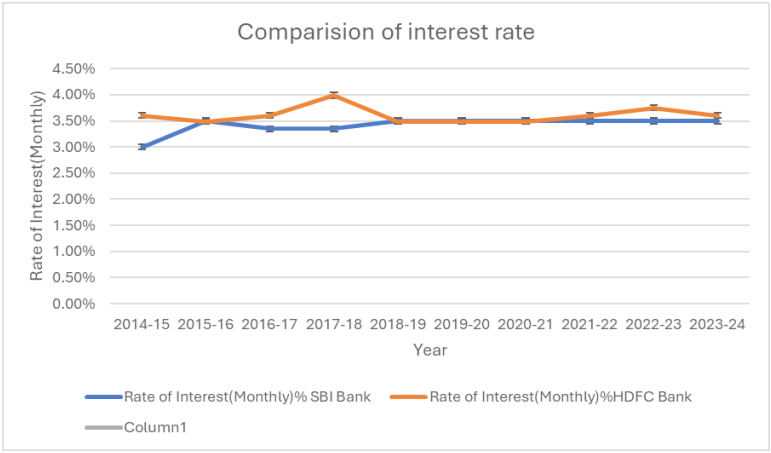
Data Analysis

Table 1: Interest Rate of Credit Card of SBI Bank & HDFC Bank (Period 1)

Year	Rate of Interest (Monthly) (%) SBI Bank	Rate of Interest (Monthly) (%) HDFC Bank
2014-15	3.0%	3.6%
2015-16	3.5%	3.49%
2016-17	3.35%	3.6%
2017-18	3.35%	3.99%

2018-19	3.5%	3.49%
2019-20	3.5%	3.49%
2020-21	3.5%	3.49%
2021-22	3.5%	3.6%
2022-23	3.5%	3.75%
2023-24	3.5%	3.6%

Source: RBI Report



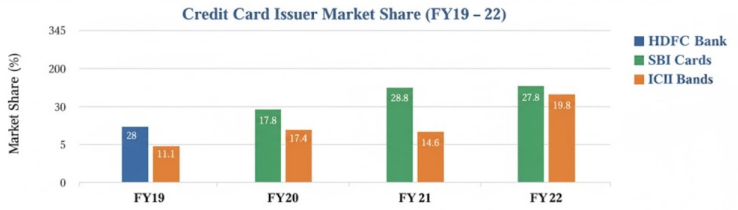
The trend analysis of credit card interest rated between public & private banks in India shows a competitive environment where both types of banks are adjusting their rates in response to the RBI's monetary policy. Private banks tend to be quicker in passing on these rate changes, compared to public banks. This difference in responsiveness highlights the increasing competitiveness within the Indian banking sector and the effectiveness of monetary policy transmission through the private banking channel.

Average monthly for private bank is 3.5% and public bank is 3.4%. In simple APR terms, that's about 42% p.a. vs 40% p.a. which shows that compounded APR are higher. Public banks show substantially higher variability because one public bank charges around 3.75% while others are lower. Many banks publish different charges for different types-premium cards sometimes have different formulas or special rates.

Table 2: Market share of large credit cards issues in spends (%)

Credit card issuers	FY19	FY 20	FY 21	FY 22
HDFC bank	28	28.8	30 .9	27.8
SBI Cards	17.1	17.8	19.4	18.8
ICICI Bank	11.1	12.2	14.6	19.5

Source: RBI, Report [26]



According to the most recent RBI data, ICICI Bank increased its market share primarily between December 2020 and June 2021 by adding more than 1.32 million cards, increasing its total number of active cards to 11.03 million from 9.71 million in November 2020.However, SBI cards climbed to 12.04 million during this time, while HDFC Banks credit cards reached 14.82 million. Even though HDFC Bank's market share in terms of outstanding cards and card spending decreased from what it was in November 2020, it still held the top spot in both categories. Notably, HDFC Banks had a market share of 27.8% in terms of spending as of June 2021, while its market share in terms of outstanding cards was 23.6%.

Table 3: Growth in the number of Credit Cards – industry grew by ~12% YoY

Growth – YoY (%)	FY18 FY21	FY19	FY20	FY21
HDFCB	25.1	16.8	16.1	3.4
SBICARD	37	32.2	27.5	12.1
ICICI	17.5	33.0	37.1	16.2

The credit card of the countries like India's credit card market is growing rapid growth, with card numbers doubling from ~54 million in 2019 to over 100 million by late 2024, driven by deeper metro penetration, digital adoption, attractive rewards/EMI options and integration with UPI for RuPays cards, projecting

strong future expansion despite relatively low overall adult penetration compared to Western countries. In the year 2019 and 2020 the financial growth of the country is surpassing the GDP due to increase in consumption but in the year 2021 the growth is very stagnant in nature due to corona virus overwhelming door. People have no money, consumption of any items. It decelerated my broke backbone and exhausted someone's strength. ICICI bank gives its highest percentage of growth strategy and 16.2 percent rather than SBIcard and HDFC bank.

Conclusion

The credit card market is expanding steadily, and this trend is predicted to continue due to rising urbanization, stable disposable incomes, lifestyle changes, change in consumer attitudes toward personal debt and an increasing proportion of young people who are working in the nation. Due to the emerging trends in E commerce, credit card usage has received a significant boost. It is anticipated that by 2024 India's E-commerce market will overtake that of the US to become the second largest market worldwide. Over the next 15-20 years, the sector has room to develop by 12% CAGR, or 7X, with a potential base of 35 crore new credit card customers that may be accessed. It is also observed that fees and high maintenance charges are levied on the customers. According to RBI data, as of March 2019, E-commerce transactions accounted for 45% of credit card spending and 39% of credit card usage. The payment infrastructure that supports digital payments is expanding rapidly. The number of POS terminals increased at a CAGR of 29% during the 2019 fiscal year, reaching 3.7 million terminals. According to the National Payments Corporation of India, at least 641 clients lost 1.3 crores in fraudulent transactions at 90 ATMs. Therefore, it is crucial that banks and NBFCs implement internal control mechanisms to combat fraud and create

regulations to thwart fraud control and enforcement procedures. To regain and maintain customers' trust in the banking system, banks urgently need to review network security. It is clear from the portfolio's ongoing expansion, the number of active cards in use, and customer transactional activity that the credit card business has steadily expanded. By 2024, experts predict that credit card spending would expand rapidly to reach 15 lakh crore, or 2.5 times what it was in 2019. When compared globally, India is still a relatively untapped Market for credit cards. The co-branding concept is increasing quickly, e-commerce is advancing, and different payment methods are interconnected, which is why the credit card business is continually growing. The sector has a tremendous opportunity to grow across lenders and penetrate farther to tap into the untapped market across the nation because credit cards are here to stay.

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CHAPTER 17

Consumer Acceptance and Market Feasibility of Electric Vehicles in Vadodara City

Charmi Kachhadiya* & Urvashi Chouhan**

Abstract

The transition toward sustainable and clean mobility has positioned Electric Vehicles (EVs) as a viable alternative to conventional fuel-based transportation. This study investigates the level of consumer acceptance, awareness, and market feasibility of EVs in Vadodara City. Based on a structured survey of 150 respondents, the findings reveal that consumers show favourable attitudes toward EV adoption, driven mainly by environmental concern, fuel cost savings, and technological advancement. However, certain constraints such as inadequate charging infrastructure, high battery replacement cost, limited driving range, and uncertainty regarding resale value continue to restrict wider adoption. The study concludes that while Vadodara demonstrates strong market potential for EV penetration, strategic expansion of charging networks, government incentives, and improved consumer education are essential for accelerating EV adoption. The overall outlook reflects a positive shift toward electric mobility, especially in the two-wheeler segment.

Keywords: *Electric Vehicles (EVs), Consumer Acceptance, Market Feasibility, Vadodara City, Charging Infrastructure, Battery Cost,*

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Environmental Awareness, Sustainable Mobility, Fuel Cost Savings, Range Anxiety.

Introduction

Electric Vehicles (EVs) have emerged as a pivotal solution to global environmental challenges, rising fuel costs, and the demand for sustainable urban mobility. The transportation sector, being one of the major contributors to greenhouse gas emissions, has prompted governments worldwide, including India, to promote electric mobility through policy incentives, subsidies, and infrastructural support. EV adoption not only reduces carbon footprint but also offers long-term economic benefits, such as lower fuel and maintenance costs.

Vadodara, a rapidly growing industrial and educational hub in Gujarat, provides an ideal context for examining consumer acceptance and market feasibility of EVs. The city's urban population demonstrates increasing environmental consciousness and willingness to adopt innovative technologies, which positions Vadodara as a potential market for electric mobility solutions. In recent years, the Gujarat government has introduced EV-friendly policies, including financial incentives, road tax exemptions, and support for charging infrastructure, aimed at accelerating the shift from conventional vehicles to electric alternatives.

Despite these conditions, EV adoption faces several challenges in Vadodara. Consumers often express concerns regarding the availability of charging stations, battery replacement costs, vehicle range, and uncertainty about resale value. Understanding consumer perception, awareness, and willingness to adopt EVs is crucial for manufacturers, policymakers, and urban planners to design effective strategies that facilitate market penetration.

This chapter explores consumer attitudes towards EVs, evaluates the current market infrastructure in Vadodara, and assesses the feasibility of wider adoption. Through primary surveys and secondary data analysis, the study aims to identify key drivers and barriers influencing EV acceptance and to provide recommendations for enhancing the city's readiness for electric mobility.

Literature Review

The adoption of Electric Vehicles (EVs) has been widely studied across various contexts, highlighting factors influencing consumer acceptance, policy support, technological barriers, and market feasibility. This literature review synthesizes key findings relevant to EV adoption in urban India, with a focus on consumer behavior and market readiness.

1. **Environmental Concern and Sustainability** Several studies emphasize that environmental awareness is a primary driver for EV adoption. Consumers with higher ecological consciousness are more likely to choose EVs due to reduced greenhouse gas emissions and lower environmental impact (Breetz et al., 2018; Rezvani et al., 2015).
2. **Cost and Economic Considerations** Purchase price, operational cost, and total cost of ownership are critical in influencing EV adoption. High upfront costs often discourage consumers, while savings in fuel and maintenance provide positive motivation (Sierzchula et al., 2014; Hall & Lutsey, 2017).
3. **Government Policy and Incentives** Government interventions, such as subsidies, tax exemptions, and infrastructure development, significantly boost consumer interest in EVs. Policy-driven incentives in India have shown measurable effects on adoption rates in urban centers (NITI Aayog, 2019).
4. **Technological Awareness and Perceived Benefits** Consumer familiarity with EV technology, performance reliability, and brand reputation play a role in adoption decisions (Jabeen et al., 2020). Awareness campaigns and test-driving experiences increase acceptance.
5. **Charging Infrastructure Availability** Limited charging stations and perceived inconvenience remain major barriers. Studies show that cities with robust EV infrastructure report higher adoption rates (Gnann et al., 2018).
6. **Battery Life and Replacement Concerns** High battery replacement cost and uncertain resale value affect purchase intention. Consumers are concerned about long-term cost-effectiveness (Li et al., 2017).

7. **Range Anxiety** Range anxiety the fear that an EV will run out of charge before reaching the destination is a psychological barrier affecting urban and semi-urban consumers (Zhang et al., 2018).
8. **Socio-demographic Factors** Age, income, education, and occupation influence EV acceptance. Younger, tech-savvy, and higher-income groups show greater openness to adoption (Lane & Potter, 2007).
9. **Urban Planning and Market Potential** Studies indicate that urban regions with planned infrastructure, road connectivity, and educational hubs are better positioned for EV penetration (Li et al., 2020).
10. **Consumer Perception of Vehicle Performance** Perceived reliability, speed, and aesthetics of EVs influence purchase decisions, highlighting the need for consumer-focused marketing (Bjerkan et al., 2016).
11. **Comparative Advantage Over ICE Vehicles** EVs are increasingly perceived as economically viable compared to traditional internal combustion engine vehicles due to lower running costs and reduced maintenance needs (Egbue & Long, 2012).
12. **Market Feasibility Studies in Indian Cities** Research in cities like Ahmedabad, Pune, and Bengaluru shows that EV adoption is feasible where public awareness, policy support, and infrastructure co-exist, which provides a benchmark for Vadodara (Shukla et al., 2021).

Research Methodology

The research methodology outlines the systematic approach employed to investigate consumer acceptance and market feasibility of Electric Vehicles (EVs) in Vadodara City. This section describes the research design, data collection methods, sample selection, and analytical tools used in the study.

Research Design

A descriptive research design was adopted to provide an in-depth understanding of consumer perceptions, preferences, and barriers regarding EV adoption. The study aimed to both describe existing awareness levels and analyze factors

influencing purchase intentions. A combination of primary and secondary data sources was used to ensure comprehensive analysis.

Area of Study

The research was conducted in Vadodara City, an industrial and educational hub in Gujarat, with a growing population, increasing vehicle ownership, and emerging interest in sustainable mobility solutions. The city provides a representative urban context for assessing the readiness of consumers to adopt EVs.

Sample Design

A convenience sampling method was employed, targeting individuals who are potential EV buyers, including working professionals, students, business owners, and urban residents. A total of 150 respondents participated in the study.

Data Collection

- Primary Data: Collected through a structured questionnaire comprising close-ended and Likert-scale questions focused on consumer awareness, acceptance, preferences, and perceived barriers related to EVs.
- **Secondary Data:** Collected from government reports, industry publications, research articles, EV market studies, and policy documents relevant to Gujarat and India.

3.5 Tools of Analysis

Data were analyzed using percentage analysis, frequency distribution, and cross-tabulation to identify trends, patterns, and relationships between demographic factors and consumer attitudes toward EV adoption. Graphs and tables were used to present the findings clearly.

Scope and Limitations

- **Scope:** Focuses on urban consumers in Vadodara and evaluates market feasibility, infrastructure readiness, and consumer perception of EVs.

- **Limitations:** The study is limited by sample size, geographical focus, and reliance on self-reported data, which may introduce respondent bias.

This methodology ensures a structured and systematic approach to understand the factors influencing EV adoption in Vadodara City.

Objectives of the Study

The primary aim of this study is to examine the consumer acceptance and market feasibility of Electric Vehicles (EVs) in Vadodara City. In line with this aim, the specific objectives are as follows:

1. **To assess the awareness level of consumers** regarding Electric Vehicles, including their features, environmental benefits, operational advantages, and government incentive schemes.
2. **To analyze consumer perception and acceptance** towards EVs, identifying key factors that motivate or hinder adoption, such as environmental concern, cost savings, technological familiarity, and brand preference.
3. **To evaluate market feasibility** by examining the readiness of Vadodara's infrastructure, including availability of charging stations, EV dealerships, and service support.
4. **To identify barriers to adoption** such as range anxiety, battery replacement costs, high upfront prices, limited charging facilities, and lack of awareness about resale value.
5. **To provide recommendations for policy makers, manufacturers, and urban planners** aimed at improving consumer acceptance, promoting EV adoption, and enhancing the overall market potential of electric mobility in Vadodara City.

Data Analysis and Results

The collected primary data from 150 respondents in Vadodara City were analyzed to assess **consumer awareness, acceptance, preferences, and market feasibility** of Electric Vehicles (EVs). The results are presented below using percentage analysis, frequency distribution, and cross-tabulation.

Awareness Level of EVs

Awareness Aspect	Respondents (n=150)	Percentage (%)
Heard about Electric Vehicles	123	82
Aware of government subsidy schemes	98	65
Know about lower operational costs	81	54

Interpretation: A majority of respondents (82%) are aware of EVs, indicating a good level of exposure. However, awareness regarding government incentives and operational cost benefits is lower, showing a need for enhanced information dissemination.

Factors Influencing EV Adoption

Factor	Respondents	Percentage (%)
Environmental concern	68	45
Fuel cost savings	57	38
Technological advancement	25	17

Interpretation: Environmental concern is the primary driver for EV adoption, followed by cost-saving considerations. Technological appeal is less influential but still contributes to consumer interest.

Barriers to EV Adoption

Barrier	Respondents	Percentage (%)
Limited charging infrastructure	72	48
High battery replacement cost	48	32
Range anxiety	23	15
Resale value uncertainty	7	5

The most significant barrier is limited charging infrastructure, followed by battery cost. These barriers highlight infrastructural and economic constraints that impact wider adoption.

Preferred EV Type

EV Type	Respondents	Percentage (%)
Two-wheeler	60	40
Four-wheeler	38	25
Undecided/Other	52	35

Interpretation: Two-wheelers are the most preferred choice among respondents, largely due to affordability and suitability for urban commuting. Four-wheelers are gaining interest but face cost-related limitations.

Summary of Results

- Awareness of EVs is reasonably high (82%), but detailed knowledge about incentives and operational advantages is moderate.
- Environmental concern and cost savings are the major motivators for adoption.
- Charging infrastructure, battery replacement cost, and range anxiety are key barriers.
- Two-wheelers show higher adoption potential compared to four-wheelers, indicating a segmented market readiness.

Findings

Based on the analysis of primary survey data and secondary research, the study reveals the following key findings regarding **consumer acceptance and market feasibility of Electric Vehicles (EVs) in Vadodara City**:

1. **High Awareness of EVs:** A significant majority of respondents (82%) have heard about EVs, indicating that the concept of electric mobility is widely recognized in Vadodara. However, detailed understanding of government incentives and operational advantages is moderate, showing the need for better information dissemination.
2. **Environmental Concern as a Primary Motivator:** Environmental consciousness emerges as the strongest driver for EV adoption, followed closely by potential fuel cost savings. This reflects a growing eco-friendly mindset among urban consumers.
3. **Economic and Technological Factors Influence Decisions:** While environmental concerns dominate, cost-effectiveness and technological advancement also influence purchase intentions. Affordability remains a key determinant in choosing between two-wheelers and four-wheelers.

4. **Infrastructural Limitations as Key Barrier:** Limited availability of charging stations (48%), high battery replacement costs (32%), and range anxiety (15%) are identified as significant barriers to EV adoption. Lack of awareness about resale value further affects consumer confidence.
5. **Segmented Market Preference:** Two-wheelers have a higher adoption potential (40%) due to lower cost, easier mobility, and suitability for urban commuting. Four-wheelers are less preferred (25%) but have potential among higher-income groups.
6. **Positive Market Feasibility:** Vadodara shows promising market feasibility for EVs. The city's growing urban infrastructure, supportive policy environment, and consumer interest provide a favorable ecosystem for electric mobility.
7. **Need for Strategic Interventions:** Expansion of public charging infrastructure, clear communication about costs and benefits, and government incentives are crucial to accelerate EV adoption in the city.

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