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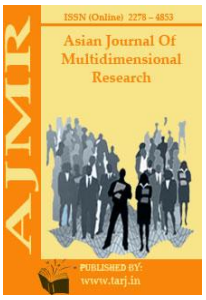

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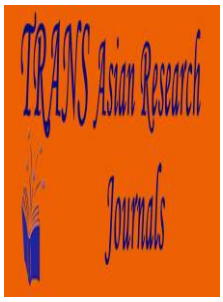

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"Revitalizing Kerala Economy: Issues and Challenges"

March 2026

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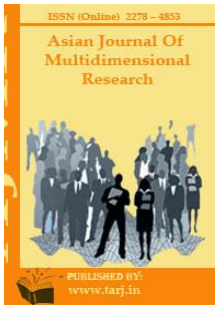

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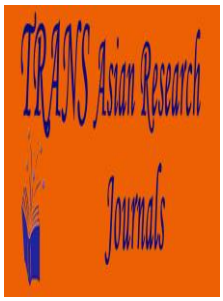

Special Issue

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ASSESSING FINANCIAL INCLUSION AND FINANCIAL LITERACY: A COMPARATIVE STUDY OF KERALA AND INDIA

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ABSTRACT

Limited financial literacy and unequal access to financial services continue to hinder inclusive and sustainable economic growth. This study provides a comprehensive analysis of the intricate link between financial literacy and financial inclusion in Kerala, a state that, despite its high general literacy, faces a significant challenge in fully realizing its economic potential. The research reveals that while a large portion of the population has access to the formal financial system, with high rates of banking access, genuine financial inclusion remains moderate. This paradox is attributed to the fact that most Keralites possess only a moderate level of financial knowledge, which prevents them from effectively engaging with the full range of available financial services. Financial literacy is higher among urban residents, males, older adults, and the highly educated while lower among rural populations, females, youth, and Scheduled Castes/Tribes. Kerala records higher levels of financial inclusion and financial literacy compared to the rest of India. Strengthening both financial literacy and inclusion is paramount for achieving socio-economic empowerment, promoting individual and household financial stability, and ensuring the state's path towards sustainable development.

KEYWORDS: *Financial Literacy, Financial Attitude, Financial Behavior, Financial Knowledge, Financial Inclusion.*

INTRODUCTION

In India, limited financial literacy and unequal access to financial services continue to hinder inclusive and sustainable economic growth. Despite advancements in digital banking and financial infrastructure, a significant portion of the population remains unfamiliar with or unable to effectively engage in the formal financial system. According to the NCFE Financial Literacy and Inclusion Survey 2019, only 27 percent of Indians are financially literate, highlighting the urgent need to improve financial awareness and expand access to financial services. Financial literacy—the ability to understand and use concepts like budgeting, saving, investment, and

credit—comprises financial knowledge, behavior, and attitude, while financial inclusion refers to ensuring that all individuals, especially those from rural or marginalized backgrounds, have access to affordable and appropriate financial services such as banking, insurance, credit, and digital finance. Kerala, though known for its high general literacy and strong human development indicators, reflects similar challenges, with a financial literacy rate of 36 percent — above the national average but still leaving the majority under-informed, particularly among women, youth, and tribal communities. The state has made commendable strides in financial inclusion through initiatives such as Kudumbashree, Jan Dhan Yojana, and Financial Literacy Centers (FLCs), which have brought many into the formal financial fold; however, gapsremain in outreach, understanding, and effective usage. Many citizens may have bank accounts but lack the necessary knowledge or confidence to use financial services responsibly and strategically. Since financial literacy and inclusion are deeply interconnected, progress in one without the other is insufficient. Access without understanding leads to underutilization, while knowledge without access limits financial action. For Kerala to achieve truly inclusive and sustainable economic development, it must simultaneously enhance financial awareness and ensure broader, more meaningful access to financial services—particularly targeting disadvantaged groups through education, digital tools, and customized outreach—to empower all citizens to make informed, responsible financial decisions and contribute to the state's overall economic growth.

1. Significance of the Study

Improving financial literacy and inclusion is critical for India's economic development, as highlighted by the World Bank's Global Findex Report 2021, which shows that financially literate individuals are more likely to save, invest wisely, and use formal financial services. Despite national efforts like Jan Dhan Yojana, low financial literacy continues to limit meaningful participation in the formal economy. In Kerala—despite high general literacy financial literacy remains moderate, especially among women, youth, and tribal communities.

This gap restricts their access to financial tools and limits economic opportunities, particularly in sectors like remittances, small businesses, and informal work. Strengthening financial literacy and inclusion in Kerala is essential not just for individual empowerment but also for achieving inclusive and sustainable economic growth. Hence, in this context, it is relevant to examine the extent of financial literacy and financial inclusion in Kerala.

2. Review of Literature

Annamaria Lusardi and Olivia S. Mitchell (2011, 2014) demonstrate that financial literacy is strongly linked to retirement security and overall financial well-being, showing that individuals with limited financial knowledge are less prepared for retirement and more financially vulnerable, while improved literacy leads to better saving and investment decisions that enhance both personal and economic stability. Similarly, Atkinson and Messy (2012) conducted a global pilot study measuring financial literacy across countries, revealing significant differences in knowledge, behavior, and attitudes, and establishing benchmarks and methodologies that continue to guide financial education policies worldwide. Abhijit V. Banerjee, Esther Duflo, and Rachel Glennerster (2018) reexamined global poverty by focusing on how poor households make economic decisions, emphasizing that financial literacy and access to financial services are crucial for empowering individuals to make informed choices, thereby supporting sustainable

poverty reduction and economic growth. Methodologically, William G. Cochran (1977) provides foundational sampling techniques that ensure financial literacy surveys accurately represent populations and generate reliable data for policy formulation, while David W. Hosmer, Stanley Lemeshow, and Rodney X. Sturdivant (2013) offer detailed guidance on logistic regression, enabling researchers to identify key determinants of financial literacy and design targeted interventions. At the policy level, the Financial Literacy Foundation (2013) outlines a national strategy to promote financial education, equipping individuals with skills in budgeting, saving, and credit management to reduce vulnerability to financial risks. In addition, the Government of India through its Viksit Bharat Vision 2047 (2023) prioritizes financial literacy and financial inclusion as central pillars of sustainable development, emphasizing expanded access to financial services and improved education—particularly for underserved populations—to achieve inclusive and long-term economic growth.

1. Objective of the Study

1. To assess the extent of financial literacy and financial inclusion in Kerala and India.

2. To compare Kerala's financial literacy levels with other states to understand its relative performance.

2. Data Source and Methods

This study is based on secondary data sourced from the NCFE (National Centre for Financial Education) Financial Literacy and Inclusion Survey conducted in 2019.The study aims to assess the financial literacy scenario in Kerala and India by examining three key components: financial attitude, financial behavior, and financial knowledge. The data was analyzed using a combination of descriptive statistics (table and percentage) and visual representation (bar diagram).

6. Discussions of the Analysis

Financial literacy is generally defined as comprising three core components: financial attitude, financial behavior, and financial knowledge. Each of these dimensions plays a distinct yet interconnected role in shaping an individual's overall financial well-being. To assess financial capability, specific threshold scores are established for each component. A score of at least 3 out of 5 indicates adequate financial attitude, 6 out of 9 reflects sufficient financial behavior, and 6 out of 8 demonstrates satisfactory financial knowledge. Overall, an individual is classified as financially literate if they achieve a minimum total score of 15 out of a possible 22 points across all three components.

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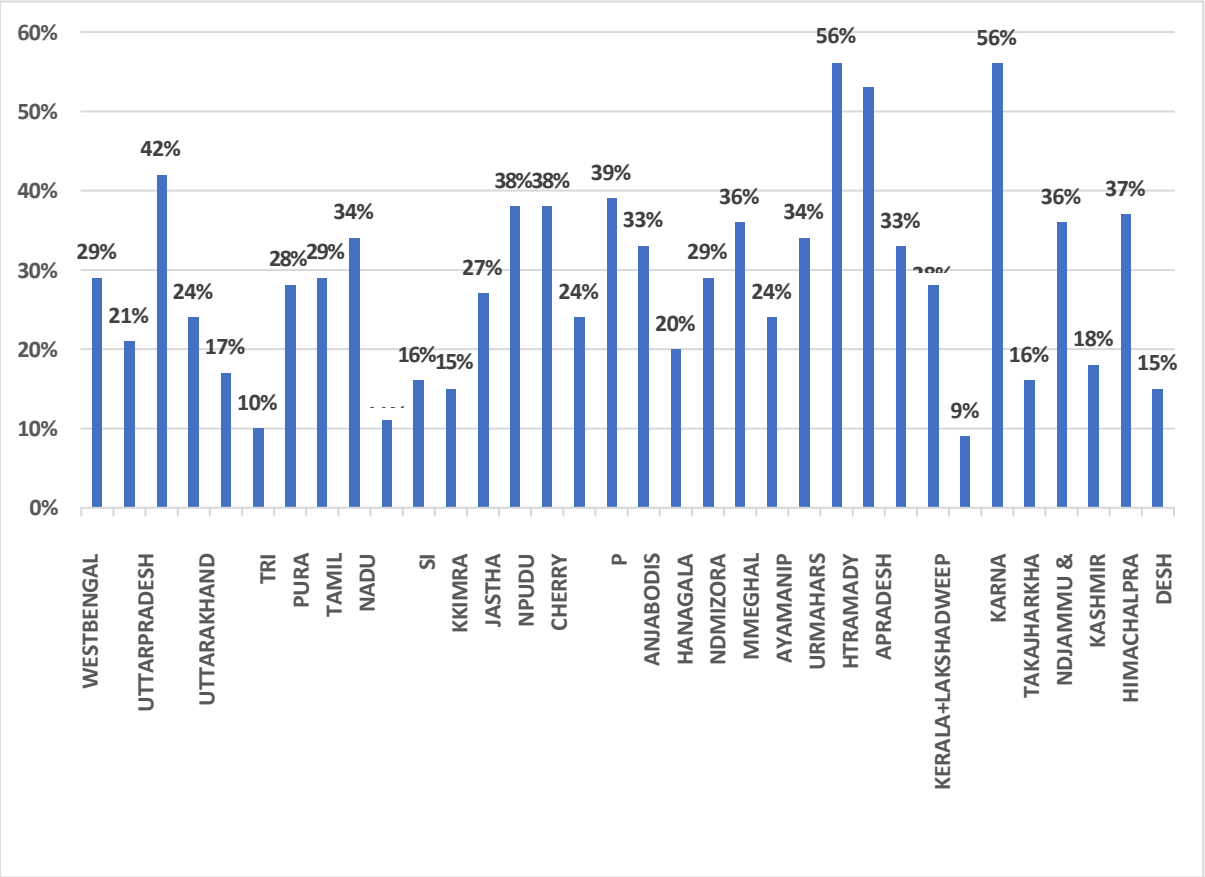
Figure 1: Distribution of Financial Literacy across Different States in India



Source: Data Compiled from the National Centre for Financial Education Report on financial Literacy, 2019.

The chart shows financial literacy rates across Indian states, revealing significant regional differences. Kerala ranks moderately at 36%, above the national average and close to Maharashtra (38%), but well above TamilNadu, which has alow rate of around 10%. Top financial literacy states include Goa, Chandigarh and Daman & Diu, each with 56%. Despite Kerala's high general literacy, its financial literacy remains moderate, highlighting a gap this study aims to address. Improving financial literacy in Kerala is essential for enhancing financial inclusion and promoting inclusive economic growth.

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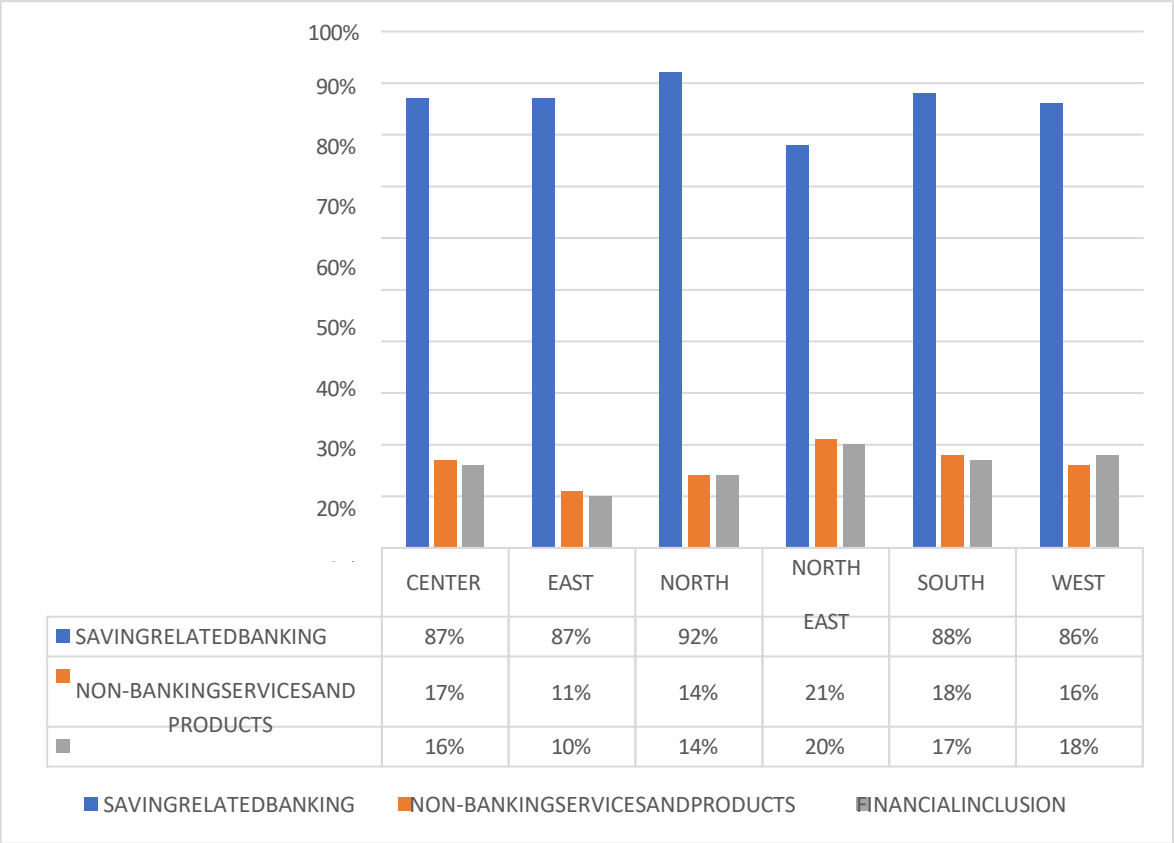
Figure2: Financial Inclusion in Different Zones in India (in percentage)



	CENTER	EAST	NORTH	NORTH EAST	SOUTH	WEST
SAVINGRELATEDBANKING	87%	87%	92%		88%	86%
NON-BANKINGSERVICESAND PRODUCTS	17%	11%	14%	21%	18%	16%
	16%	10%	14%	20%	17%	18%

Source: Data Compiled from the National Centre for Financial Education Report on financial literacy, 2019.

The chart shows that while banking access is high across regions—North (92%), South (88%), and West (86%)—overall financial inclusion remains low (10%–20%). Kerala, in the South, has 88% access but only 17% fully included, like Maharashtrain the West (86% access, 18% inclusion). Tamil Nadu, despite high general literacy, has very low financial inclusion (around 10%). The East lags with just 10% full inclusion, while the Northeast, despite lower access (78%), shows better inclusion (20%) due to higher use of non-banking services. This indicates that financial literacy—not just access—is key, especially for states like Kerala aiming for inclusive economic growth.

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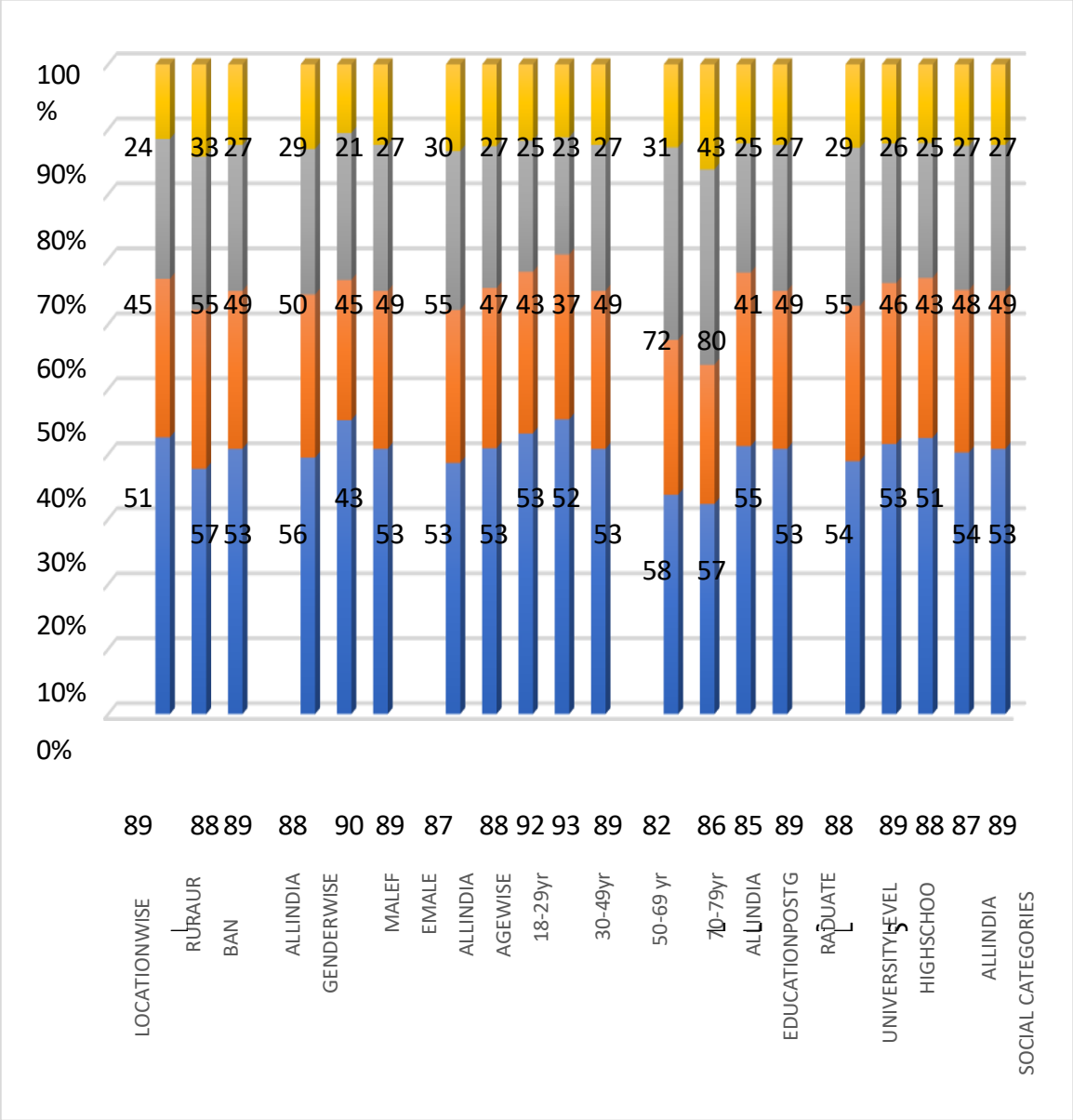
Figure 3: Financial Literacy and Its Components among Different Socio economic Groups in India.



Source: Data Compiled from the National Centre for Financial Education Report on financial literacy, 2019.

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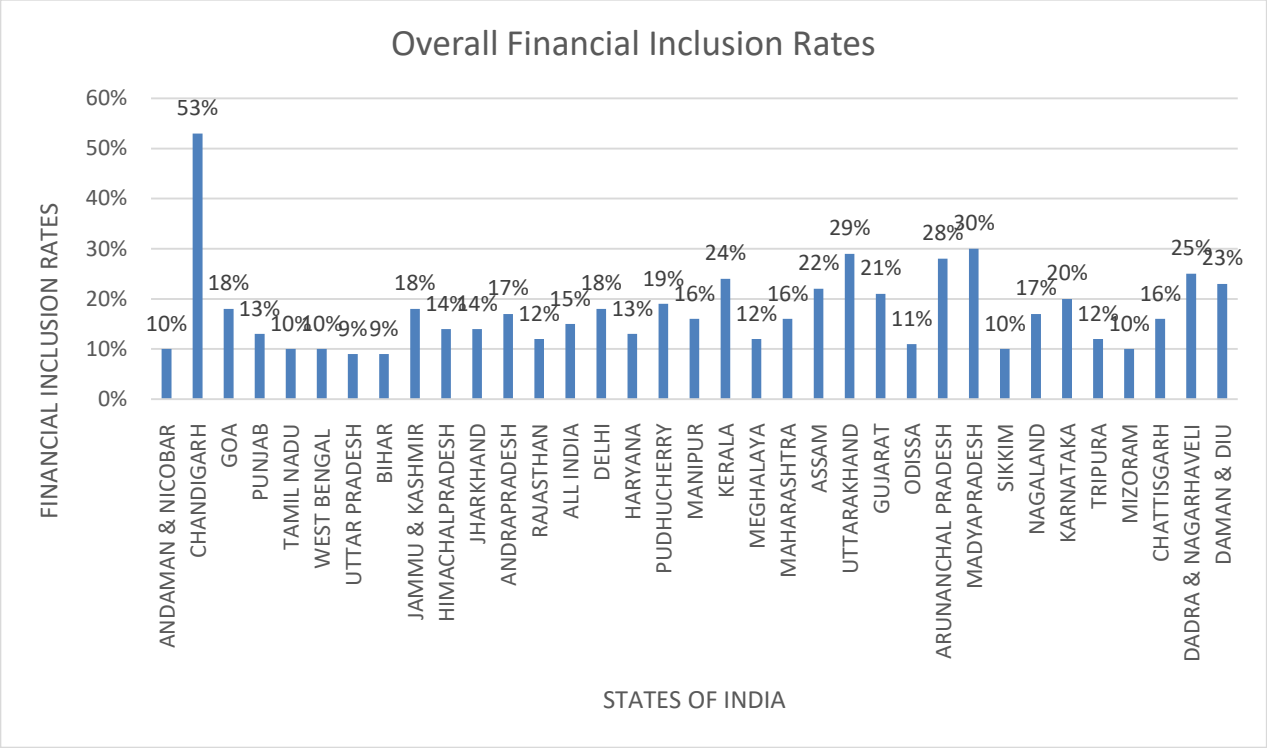
The chart shows that only 73% of Indians meet the financial literacy threshold, with notable gaps across demographics. Financial literacy is higher among urban residents (67%), males (71%), older adults (50–59 years: 77%), and the highly educated (postgraduates: 77%), while lower among rural populations (59%), females (64%), youth (18–29 years: 63%) and Scheduled Castes/Tribes (66–67%). Although knowledge levels are relatively strong, weaker financial behavior and attitudes hinder effective financial decision-making. In Kerala, despite high general literacy, financial literacy remains moderate at 36%, particularly among youth, women, and tribal communities. This limits access to formal finance, weakens financial planning, and poses challenges to Kerala's inclusive and sustainable economic growth

Figure 4: Distribution of Financial Inclusion across Different States in India



Source: Data Compiled from the National Centre for Financial Education Report on financial literacy, 2019.

The graphical view highlights wide interstate disparities in financial inclusion. Chandigarh stands out sharply at 53%, far exceeding all other states and Union Territories. A second tier of strong performers—Madhya Pradesh (30%), Uttarakhand (29%), Arunachal Pradesh (28%), Dadra & Nagar Haveli (25%), and Kerala (24%)—also lies well above the national average of 15%, indicating relatively deeper access to financial services. A broad mid-range group, including states such as Assam, Gujarat, Karnataka, Daman & Diu, Delhi, Goa, Jammu & Kashmir, Andhra Pradesh, and Maharashtra, shows moderate inclusion levels slightly above the national benchmark. In contrast, a large number of states cluster in the low-inclusion range of 9–14%, notably Uttar Pradesh, Bihar, Tamil Nadu, West Bengal, Rajasthan, Punjab, Haryana, and

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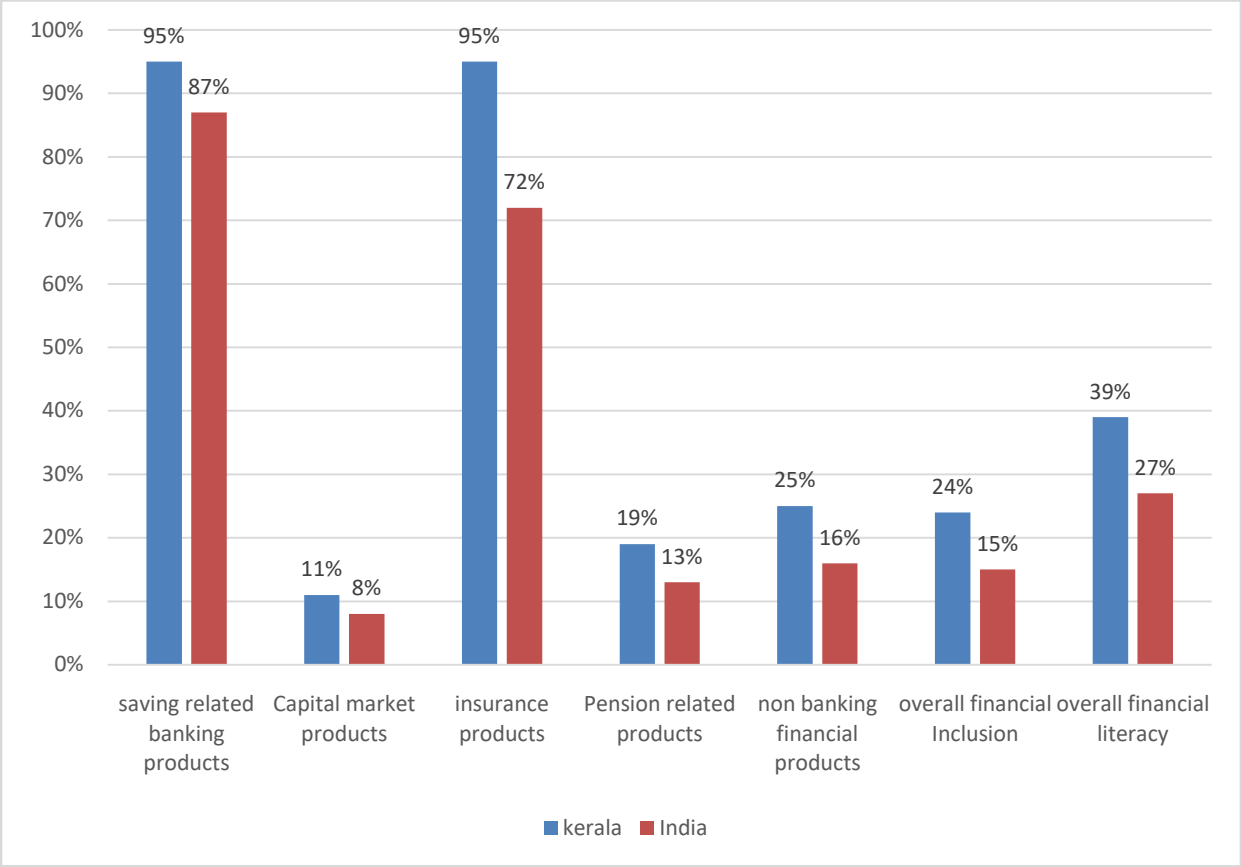
Jharkhand. Overall, the pattern suggests that Union Territories and a few central and northeastern states lead in financial inclusion, while many large, densely populated states continue to lag, pulling down the national average.

Figure 5: Financial Literacy and Financial Inclusion: Comparison between India and Kerala



Source: Data Compiled from the National Centre for Financial Education Report on financial literacy, 2019.

Table 1: Financial Literacy and Financial Inclusion: Comparison between India and Kerala

Awareness and Usage of Financial Products in Kerala and India	kerala	India
saving related banking products	95%	87%
Capital market products	11%	8%
insurance products	95%	72%
Pension related products	19%	13%
non-banking financial products	25%	16%
overall financial Inclusion	24%	15%
overall financial literacy	39%	27%

Source: Data Compiled from the National Centre for Financial Education Report on financial literacy, 2019.

The data shows that Kerala performs better than the national average in terms of financial inclusion and financial literacy. Awareness and usage of saving-related banking products are very high in both Kerala (95%) and India (87%), indicating strong access to basic banking services, with Kerala having a clear advantage. Similarly, insurance products are widely used in Kerala (95%) compared to India (72%), reflecting higher awareness of financial security measures. However, participation in advanced financial instruments remains low, as seen in capital market products (11% in Kerala and 8% in India) and pension-related products (19% in Kerala and 13% in India), suggesting limited investment and long-term financial planning. Non-banking financial products also show relatively low but higher usage in Kerala (25%) than India (16%). Overall, Kerala records higher levels of financial inclusion (24%) and financial literacy (39%) compared to India (15% and 27% respectively), indicating better financial awareness, accessibility, and utilization of financial services in the state.

7. Conclusion of the Study

The study reveals a significant gap between financial literacy and financial inclusion in Kerala, which limits the state's potential for inclusive and sustainable economic growth. Although a high percentage of the population (88%) has access to financial services, only 17% are fully financially included, largely due to moderate financial literacy levels (around 36%). The analysis highlights that access alone is insufficient; effective use of financial products require adequate knowledge, positive financial behavior, and confidence—areas where many Keralites, especially women, youth and marginalized communities, lag behind. This disparity underscores

the interconnected nature of financial literacy and inclusion: both must advance simultaneously for meaningful economic participation. The study concludes that targeted efforts to enhance

financial education, alongside expanding access, are critical to empower individuals to make informed decisions, optimize their financial resources, and contribute to Kerala's broader economic development goals. By fostering better financial behaviour and a deeper understanding of financial concepts, Kerala can ensure that its citizens are not just beneficiaries of economic growth but active and empowered participants in it. This will ultimately lead to increased savings, responsible use of credit and a more robust and inclusive economy for all.

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Special Issue

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"FINANCIAL AUTONOMY OF LOCAL GOVERNMENTS IN KERALA: A CRITICAL REVIEW OF EVIDENCE AND POLICY DESIGN."

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ABSTRACT

India's most uniform and rule-based system of intergovernmental fiscal transfers has been created under Kerala's decentralization model, which is rooted in the 73rd and 74th Constitutional Amendments. This study critically investigates the development of fiscal decentralization and financial autonomy among Kerala local governments between 1996 and 2021 based on evidence from six State Finance Commissions (SFCs), government reports, and scholarly literature. Fiscal autonomy is strongly correlated with local performance, according to empirical data, but this link is mediated by institutional capacity and digital competence. Kerala's model, which is strong in governance design but weak in local resource mobilization, thereby exemplifies procedural autonomy without complete budgetary sovereignty. According to the study's findings, Kerala's fiscal decentralization has advanced from political devolution to digital fiscal administration, but its long-term viability relies on using fiscal innovation, accountability, and resilience to turn predictable dependency into productive autonomy.

KEYWORDS: *State Finance Commission, Kerala, Local Government, Financial Autonomy, Fiscal Decentralization, Participatory Planning, and Fiscal Federalism.*

1. INTRODUCTION

A key topic in public finance and governance is the connection between local government performance and budgetary autonomy. The foundation of successful self-governance in decentralized systems is fiscal autonomy, which is described as the ability of local governments to freely raise, distribute, and manage financial resources (Oates, 1972; Oommen, 2021). However, decentralization frequently ends with administrative or political devolution in many developing economies, leaving local organizations reliant on higher tiers for financial support (Rodden, Eskeland, & Litvack, 2003).

In an attempt to rectify this structural imbalance, India's 73rd and 74th Constitutional Amendments (1992) gave Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs)

constitutional authority with precisely defined functions, funding, and functionaries—the "3Fs" of decentralization. Article 243-I required each state to create State Finance Commissions (SFCs) regularly to recommend revenue-sharing principles in order to operationalise fiscal devolution. Kerala comes out as a reliable and creative performer in institutionalizing fiscal decentralization, notwithstanding inconsistent implementation throughout India (Oommen, 2015; Singh, 2020).The People's Campaign for Decentralized Planning (1996–2001) gave Kerala's decentralization a boost by transferring approximately 35–40% of state plan funds to local self-governments, converting them from state administrative extensions to independent development agencies (Isaac & Franke, 2000).

However, Kerala's institutional depth and limited budgetary sovereignty provide an obstacle in its decentralization. Own-source revenue (OSR), which averages 12–15% of total local income, is low despite considerable administrative and functional autonomy, leaving local governments reliant on state transfers for development expenditures (Nair & Kumar, 2022; Thomas, 2016). This state, which Oommen (2015) refers to as predictable dependency, is a system that is monetarily limited yet procedurally independent.

The situation of Kerala theoretically offers an empirical setting for testing important theories of public choice theory, principal-agent theory, and fiscal federalism. While principal-agent models emphasize the trade-off between oversight and autonomy, fiscal federalism stresses allocative efficiency when choices about spending and revenue are delegated (Oates, 1972) (Shah, 2007). According to public choice theory, closeness and engagement increase responsibility, but they also need sufficient financial resources to be successful (Isaac & Franke, 2000).

In light of this, this study aims to critically evaluate how Kerala's State Finance Commissions (SFCs) have influenced the institutional and fiscal architecture of decentralization, the degree to which these reforms have advanced true financial autonomy for local self-government institutions, and the policy innovations required to maintain fiscal resilience and equity in the post-pandemic era. By analyzing these interconnected aspects, the study seeks to determine the advantages and disadvantages of Kerala's decentralized fiscal system, evaluate the level of autonomy attained by local entities, and pinpoint reform avenues that can improve inclusivity and efficiency in the larger context of India's changing federal structure.

Objectives of the Study

1. To examine the development of Kerala’s fiscal decentralisation through the six State Finance Commissions from 1996 to 2021
2. To understand the concept of financial autonomy in Kerala through theories of fiscal federalism, principal agent theory, public choice and resource dependence.
3. To assess whether Kerala LGs obtained procedural autonomy or true financial autonomy.

Methodology

The study based on secondary data and adopts a qualitative, interpretive methodology. The analysis relies on SFC’s reports, Government of Kerala reports, KILA reports, and academic literature. The approach includes documentary analysis and historical-institutional inquiry to

understand the evolution of fiscal decentralisation in Kerala and theoretical interpretation of financial autonomy in Kerala. This study tries to assess how SFC's shaped the financial autonomy and fiscal decentralisation of Kerala.

2. Conceptual and theoretical framework

2.1 Concept of Financial Autonomy

The ability of local governments to raise, distribute, and manage financial resources freely, in line with local needs and priorities, is referred to as financial autonomy. Revenue autonomy, expenditure autonomy, and fiscal accountability are its three interconnected elements (Oommen, 2021). The ability of local governments to produce their own revenue through local taxes, fees, and user charges without unduly depending on intergovernmental transfers is known as revenue autonomy. The freedom to distribute resources across different tasks and initiatives is reflected in expenditure autonomy. Through processes of transparency, audit, and citizen supervision, fiscal accountability guarantees that such autonomy is used responsibly (Nair & Kumar, 2022).

Financial autonomy is regarded as the fundamental principle of decentralisation, converting administrative and political devolution into significant self-governance. Local governments are assigned to implementing agencies of higher-tier Governments rather than independent developmental entities in the absence of enough financial space (Oates, 1972). Therefore, the actual control over financial resources is just as important to the success of decentralisation as the formal transfer of tasks. In Kerala, the ability of Panchayats and Municipalities to organise and carry out development projects in line with local priorities depends on the degree of fiscal autonomy.

2.2 Theoretical Foundations of Financial Autonomy

Many theories in public finance and governance serve as the intellectual foundation for financial autonomy.

a. Fiscal Federalism Theory

According to the Fiscal Federalism Theory, which was first put forth by Oates in 1972, the level of government closest to the people whose preferences they are intended to serve provides public goods and services most effectively. According to "Decentralization Theorem," decentralized public service delivery boosts allocative efficiency and citizen satisfaction when there are no cost disparities. This theoretical basis is reflected in Kerala through the devolution of plan funds and participatory budgeting methods. Kerala's experience, however, also highlights the practical drawbacks of fiscal federalism: even with functional decentralization, there is still a substantial financial reliance on higher tiers of Government (Thomas, 2016).

b. Principal-Agent Theory

A governance-oriented view is offered by the Principal–Agent Theory, which sees higher levels of government (the "principal") as assigning duties to local governments (the "agents"). A balance between accountability (to stop financial exploitation) and autonomy (to make decisions appropriate to the situation) is necessary for effective delegation. Unchecked autonomy runs the risk of inefficiency, whereas excessive oversight restricts creativity. Kerala's decentralization

serves as an example of this conflict: although local bodies exhibit strong accountability through Gram Sabhas and participatory audits, state-level controls over tied grants and audit procedures sometimes limit local freedom (Oommen, 2021; C&AG, 2023).

c. Public Choice and Participatory Governance Theory

Decentralization reduces bureaucratic inertia and corruption by bringing decision-making closer to citizens, which improves efficiency from the perspectives of public choice and participatory governance (Abdillahi, 2024). A prime example of these theories in action is Kerala's People's Plan Campaign, which uses public forums to decide on development projects, budgetary allocations, and service priorities. Public choice theorists caution that without robust financial autonomy and accountability mechanisms, participation by itself does not ensure economic sustainability.

d. Resource Dependence Theory

The Resource Dependency Theory, which contends that reliance on outside funding sources shapes organizational behavior, is a complementary viewpoint. According to Pfeffer and Salancik (1978), increased fiscal dependency on local governments diminishes their ability to make independent decisions and may skew local priorities to suit the objectives of higher-level authorities. This trend is demonstrated by Kerala's ongoing reliance on state and national transfers, as local administrations frequently modify development plans to accommodate budget requirements rather than community desires (Nair & Kumar, 2022).

2.3 Financial Autonomy and Local Government Performance

Financial autonomy and local government performance have an intuitive and experimentally confirmed relationship. Local governments can prioritize local needs, spend funds more responsively, and improve service delivery outcomes when they have sufficient fiscal capacity (Jin & Rider, 2022; Mohanty et al., 2024). On the other hand, insufficient ownership of development projects, inefficiency, and dependency result from a lack of financial autonomy. This connection has been partially established in Kerala. The state's decentralization efforts, particularly the People's Plan Campaign and the ensuing economic reforms, have made it possible for local organizations to take the lead in social welfare, infrastructure, and health planning. However, research indicates that the weakest link in Kerala's otherwise effective decentralization chain is still financial autonomy (Oommen, 2021; Thomas, 2016). The flexibility and durability of local governments' developmental actions are limited by their incapacity to generate enough revenue from their own sources.

Financial Autonomy → Institutional Capacity → Governance Performance, moderated by Accountability and Fiscal Transfer Design, is a conceptual representation of the relationship between financial autonomy, institutional capacity, and performance. According to this concept, robust institutions and accountability systems are necessary in addition to financial autonomy in order to transform resources into measurable outcomes.

2.4 Analytical Implications and Conceptual Gaps

Empirical observations, especially in Kerala, show partial autonomy and ongoing dependency, despite theoretical models' strong support for fiscal autonomy as a catalyst for efficiency and local empowerment. In terms of administrative devolution, planning capacity, and participatory governance, the state has made outstanding achievements. But the financial aspect falls short. municipal budgets are still dominated by state-level fiscal transfers, with own-source revenue making up a small portion of overall municipal receipts. This disparity between fiscal and functional devolution highlights the necessity of a policy design assessment that looks at whether Kerala's institutional arrangements actually provide local bodies with financial power.

As a result, this study incorporates Kerala's policy setting with conceptual insights from principal-agent relationships, fiscal federalism, and participatory government. It states that although Kerala's decentralization framework has made democratic planning possible, the state's policy structure needs to change in order to achieve more fiscal empowerment. The next sections look at this development, analyze data from official and scholarly sources, and assess how well Kerala's fiscal decentralization policies support true financial autonomy.

Section 3 Kerala's Financial Autonomy and Fiscal Decentralisation Through the Six State Finance Commissions

3.1 The constitutional and Institutional Foundations (1992-1994)

The Kerala Panchayat Raj Act, 1994 serves as the state-level implementation of the 73rd Constitutional Amendment of 1992, which established a three-tier Panchayati Raj system for rural local self-governance in India, while further strengthened by the Kerala Municipality Act, 1994 for urban areas under the 74th Amendment (Government of Kerala, 1994a, 1994b). This Act creates a structured framework for Panchayats at the village (Grama), block, and district levels, empowering the Grama Sabha—a village assembly of all voters—with key participatory roles in planning, auditing, and oversight that often exceed constitutional requirements, such as enhanced women's reservation at 50 per cent and decentralized initiatives like the People's Plan Campaign (Isaac & Franke, 2000).

It provides detailed guidelines for elections conducted by the State Election Commission, including five-year terms, member qualifications and disqualifications, and procedures for polling, nominations, electoral rolls, and dispute resolution (Government of Kerala, 1994a). In addition to financial aspects like taxation, budgeting, and the creation of a State Finance Commission to guarantee resource allocation and autonomy, the Act devolves powers, functions, and duties across 29 subjects from the Eleventh Schedule, including health, sanitation, education, and poverty alleviation (Oommen, 2015; State Finance Commission, 2021).

Although there are still obstacles to overcome in order to completely realize the "3Fs" (functions, funds, and functionaries) and achieve true financial independence, accountability is strengthened through organizations like the Tribunal for Local Self-Government Institutions and the Ombudsman for Local Governments (Singh, 2020). Despite persistent implementation shortcomings, the Kerala Panchayat Raj framework puts the state as a national leader in

democratic decentralization and participatory local governance (Oommen, 2015; Isaac & Franke, 2000).

3.2 The People's Plan Campaign (1996–2001): The Turning Point

One of the most significant efforts in participatory development in the Global South was the People's Campaign for Decentralized Planning (PCDP), which was started in 1996 by the Left Democratic Front (LDF) government in Kerala (Isaac & Franke, 2000). In order to institutionalize bottom-up development planning through widespread public engagement, this innovative effort transferred 35–40% of the State Plan funding to local self-government organizations (Panchayats and Municipalities) (Government of Kerala, 1996; Oommen, 2004).

Through a multi-phase process that included elected local councils for plan integration, sectoral task forces for project formulation, and revitalized Grama Sabhas for need identification, the campaign mobilized over three million people across 1,052 rural and urban local bodies (Isaac, 2000; Thomas, 2016). Kerala's high literacy rate, egalitarian social movements, and long-standing customs of civic engagement all contributed to the effort, which was based on the democratic decentralization framework created by the 73rd and 74th Constitutional Amendments (Oommen, 2015; Singh, 2020).

According to empirical analyses, the campaign successfully overcame bureaucratic resistance and elite capture through participatory accountability mechanisms, resulting in notable improvements in transparency, gender empowerment through 50% reservations for women, inclusion of marginalized groups, and local infrastructure creation (Isaac & Franke, 2000; Thomas, 2016; Kannan & Pillai, 2007). As a result, the PCDP changed Kerala's local government from a delegated administrative process to a citizen-driven decentralized planning model. This led to reforms in other Indian states and international recognition from development experts (Oommen, 2015; Singh, 2020).

3.3 Consolidation through State Finance Commissions (SFC I – VI)

One of India's most extensive and ongoing trials with fiscal federalism is Kerala's decentralization process. The 73rd and 74th Constitutional Amendments were operationalized by the state's approach to local governance, which established a strong three-tier system of local self-government through the Kerala Panchayat Raj Act (1994) and Kerala Municipality Act (1994). The primary mechanism for institutionalising fiscal decentralization and guaranteeing the fair distribution of resources between the State and local governments within this framework has been the periodic constitution of State Finance Commissions (SFCs) under Article 243-I (Oommen, 2015; Singh, 2020).

Kerala has proven its political and administrative commitment to rule-based devolution by completing six successive commissions since the First SFC was established in 1994, a record unmatched by any other Indian state (State Finance Commission [Kerala], 1996–2021). In addition to evaluating local bodies' financial standing, each Commission gradually broadened the conceptual and practical reach of decentralisation, from integrating performance, accountability, and digital governance to creating fiscal standards and formula-based grants (Isaac & Franke, 2000; Oommen, 2021).

The foundation, consolidation, institutional maturity, fiscal responsibility, performance focus, and resilience are the six distinct focuses that these Commissions collectively trace throughout the development of Kerala's fiscal autonomy. According to Thomas (2016) and Rajan (2021), local organisations became institutions of democratic government with significant planning, budgeting, and fiscal duties as a result of their combined influence.

Table 1 provides a comparative overview of the six State Finance Commissions, emphasizing their changing mandates, suggestions, and financial legacies. From foundation (1996) to digital resilience (2021), it visually illustrates Kerala's decentralization journey.

Table 1. Evolution of Kerala's State Finance Commissions (1994–2021)

SFC	Year of Constitution & Chairperson	Context & Key Focus	Major Fiscal Recommendations	Significance / Legacy	References
First SFC	**April 1994***Chairperson:* P. M. Abraham	First institutional mechanism to operationalise fiscal devolution under the 73rd & 74th Amendments. Addressed vertical fiscal imbalance and ad hoc transfers.	- Assigned local taxes (property, profession, entertainment). - Shared 15% of land revenue & stamp duty. - Introduced formula-based grants (population, area, backwardness). - Proposed tax effort index & presumptive income framework.	Laid foundation for rule-based fiscal transfers. Informed the *People's Campaign for Decentralised Planning (1996–2001).*	State Finance Commission (Kerala, 1996); Isaac & Franke (2000); Oommen (2015)
Second SFC	**June 1999***Chairperson:* Dr. Prabhat Patnaik	Post–People's Plan phase: aimed to consolidate participatory planning gains and integrate plan & non-plan funding.	- Introduced three-tier grant system (plan, maintenance, general-purpose). - State to fund 100% maintenance of transferred assets. - Simplified tax-sharing system; performance-linked incentives.	Transitioned from experimental to institutional decentralization. Institutionalized maintenance grants & predictable transfers.	State Finance Commission (Kerala, 2001); Oommen (2004, 2015); Thomas (2016)

SFC	Year of Constitution & Chairperson	Context & Key Focus	Major Fiscal Recommendations	Significance / Legacy	References
Third SFC	**February 2005***Chairperson:* Dr. M. A. Oommen	Strengthening fiscal accountability and linking devolution with local performance.	- 3.5% of State's own tax revenue to LSGIs. - Separate maintenance fund & asset register system. - Fiscal Performance Index to reward efficiency. - Recommended local borrowing framework.	Introduced fiscal realignment and performance-oriented accountability. Marked Kerala's phase of institutional maturity.	State Finance Commission (Kerala, 2006); Oommen (2007); Thomas (2016)
Fourth SFC	**December 2008***Chairperson:* Dr. M. A. Oommen	Period of fiscal responsibility and digital modernization. Integration with e-governance and audit reforms.	- Continued 3.5% tax devolution norm. - Performance-linked grants. - Maintenance grant based on asset value. - Introduction of Fiscal Responsibility Code for LSGIs. - Digital audit and financial management (Sulekha, SAANKHYA).	- Embedded fiscal responsibility & transparency. - Established Kerala's digital fiscal governance model.	State Finance Commission (Kerala, 2011); KILA (2012); Oommen (2011)
Fifth SFC	**November 2013***Chairperson:* Dr. K. Jayakumar	Addressed fiscal sustainability, equity, and performance-linked transfers. Alignment with 14th Finance Commission framework.	- Maintained 3.5% tax share; 5.5% of revenue receipts to LSGIs. - Introduced Composite Deprivation Index (CDI). - Expanded Performance Grant System (PLGS). - Proposed GIS-based property tax r	Shifted focus to performance, sustainability, and horizontal equity. Enhanced capacity-based fiscal management.	State Finance Commission (Kerala, 2016); KILA (2018); Oommen (2017)

SFC	Year of Constitution & Chairperson	Context & Key Focus	Major Fiscal Recommendations	Significance / Legacy	References
Sixth SFC	**July 2020***Chairperson:* Dr. K. R. Rajan	Conducted during COVID-19 crisis; emphasized fiscal resilience and data-driven governance.	- Raised tax devolution to 4% of State's tax revenue. - Established Local Resilience Fund (LRF). - Promoted untied grants & digital fiscal dashboards. - Integrated SAANKHYA, Sulekha & Treasury systems.	Advanced Kerala into the era of *resilient, digital fiscal federalism.* Linked autonomy with adaptability & data-driven policy.	State Finance Commission (Kerala, 2021); Rajan (2021); KILA (2022)

Kerala's six State Finance commissions (SFCs) contributed to the development of the state's decentralisation framework from an administrative experiment to an empirically supported system of fiscal federalism. The concepts of justice, efficiency, accountability, and autonomy were gradually strengthened by subsequent commissioners, starting with the First SFC (1996), which established the framework for rule-based resource sharing and fiscal predictability (State Finance Commission [Kerala], 1996–2021; Oommen, 2015).

Each Commission made a unique contribution to the fiscal decentralization institutional architecture. The Fourth and Fifth SFCs institutionalized digital fiscal management, maintenance grants, and performance-linked transfers, whereas the Second and Third SFCs combined participatory planning and integrated plan and non-plan spending. Adaptability and sustainability were incorporated as new aspects of local financial autonomy in the Sixth SFC (2021), which emerged within the COVID-19 crisis and signalled a shift toward resilience and data-driven fiscal governance (Rajan, 2021; KILA, 2022).

Own-source revenue (OSR) stagnation, capacity differences between rural and urban local bodies, and the narrow scope of fiscal innovation are among the issues that still exist despite these developments. However, Kerala's experience is still unparalleled in India in terms of institutional learning, consistency, and transparency. Kerala's continuous SFC cycle has established a reliable framework for intergovernmental collaboration and fiscal discourse, in contrast to many states where SFCs remain irregular or politically symbolic (Oommen, 2021; Singh, 2020).

The development of Kerala's SFCs essentially reflects the gradual realization of financial autonomy as a dynamic, multifaceted process that connects institutional capacity, fiscal transfers, and democratic accountability. These commissions have improved Kerala's fiscal

decentralization while also offering an Indian subnational governance reform model that can be replicated.

Section 4 – Review of Empirical Evidence and Policy Evaluation

Through six State Finance Commissions (SFCs) in a row, Kerala's fiscal decentralization model has developed, institutionalised a predictable and rule-based system of intergovernmental fiscal transfers. However, the impact of these institutional structures on financial autonomy, fiscal performance, and developmental outcomes must ultimately be used to evaluate their efficacy. In order to determine the degree to which fiscal decentralization in Kerala has improved local government capacity, equity, and accountability, this section examines empirical data from state-level reports, scholarly research, and independent evaluations (Oommen, 2015; Thomas, 2016; Nair & Kumar, 2022).

4.1Trends in Financial Devolution

The amount and regularity of budgetary transfers to Local Self-Government Institutions (LSGIs) have significantly increased. According to SFC data, the share of untied grants increased progressively, and overall devolution to LSGIs increased from less than 5% of state revenue in 1996–1997 to over 25% by 2020–2021 (State Finance Commission [Kerala], 1996–2021). This tendency was started by the People's Campaign for Decentralized Planning (1996–2001), which set aside 35–40% of State Plan monies for local planning (Isaac & Franke, 2000; Oommen, 2004).

This structure was reinforced by later SFCs with formula-based grants and predictable transfers. A combined devolution of 5.5% of state revenue receipts was established by the Fifth SFC (2016) and increased to 6% by the Sixth SFC (2021), which also suggested that 4% of own tax income be devolved as General-Purpose Grants (Rajan, 2021; KILA, 2022). Panchayats and municipalities were able to carry out multiyear planning and asset maintenance with more independence through these steady financial helps.

4.2 Composition of Local Finances

Kerala's local governments are still largely reliant on state transfers despite greater decentralization. Only 10–12% of rural Panchayats' entire income comes from own-source revenue (OSR); the remaining 60–70% comes from state handouts (Nair & Kumar, 2022; Thomas, 2016). Urban local bodies do marginally better, with an OSR of 15–20%, mostly from user fees, property taxes, and professional taxes (State Finance Commission [Kerala], 2021).

The most flexible and reliable local tax source is still property taxes. However, its buoyancy has been constrained by inconsistent revaluation, political opposition to rate adjustment, and administrative capacity issues. According to research conducted by KILA and the Centre for Development Studies (CDS), only thirty percent of LSGIs review their properties within the allotted five years (KILA, 2018). Furthermore, while being allowed by the Panchayat Raj and Municipality Acts, service fees and user charges are still underutilized because of lax enforcement and a societal dislike of cost recovery (Oommen, 2021).

Overall, the breakdown of municipal budgets indicates that institutional but not structural fiscal autonomy has grown. Uncertainty has been replaced with stability, but not self-sufficiency, due to the reliance on predictable but externally determined grants.

4.3 Fiscal Performance and Accountability

Fiscal responsibility and transparency tools are gradually included in Kerala's fiscal decentralization paradigm. In order to promote balanced budgets, maintenance provisioning, and enhanced reporting standards, the Fourth and Fifth SFCs proposed and implemented a Local Fiscal Responsibility Code (LFRC) (State Finance Commission [Kerala], 2011, 2016). Local financial governance has changed as a result of the use of digital financial management tools, particularly Sulekha (plan preparation), SAANKHYA (accounting), and PlanSpace (monitoring). In Kerala 98% of LSGIs currently keep real-time accounting data, allowing for ongoing fiscal monitoring, according to KILA (2022). These platforms have improved audit trails, decreased fund flow delays, and increased transparency. Although there are still differences in capacity across local organizations, the Comptroller and Auditor General's (C&AG) independent audits verify high levels of procedural compliance.

Accountability was further strengthened by the introduction of performance-linked grants following the Third SFC (2006). Additional grants were given to LSGIs that showed improved tax collection efficiency, timely reporting, and inclusive project execution (Oommen, 2015). Although this encouraged prudent financial practices, it also revealed systemic injustices, since Panchayats with limited resources or expertise found it difficult to satisfy performance standards. In order to reconcile efficiency and equity, the Fifth SFC (2016) introduced a Composite Deprivation Index (CDI) (KILA, 2018).

4.4 Financial Autonomy and Local Development Outcomes

Fiscal autonomy and developmental success are positively correlated, according to empirical research. LSGIs have been able to enhance the provision of health, sanitation, housing, and education services because of Kerala's decentralized planning system (Isaac & Franke, 2000; Oommen, 2021).Direct involvement of citizens in budget prioritization improved allocative efficiency and legitimacy, as the People's Plan Campaign showed. According to later studies by Thomas (2016) and Nair & Kumar (2022), Panchayats with greater OSR ratios typically spend more wisely on maintenance and development tasks. Those that rely significantly on tied grants, on the other hand, exhibit less adaptability and creativity.

Data from the Sixth SFC (2021) demonstrates how digital finance management can enhance local crisis response. Digitally equipped LSGIs were able to quickly reallocate funds for relief distribution and health infrastructure during the COVID-19 pandemic, demonstrating that financial autonomy now includes adaptive fiscal capacity (Rajan, 2021).

4.6 Policy Evaluation and Emerging Challenges

Despite the unprecedented longevity of Kerala's SFC-driven fiscal system, a number of policy challenges still exist:
Own-Source Revenue (OSR) Stagnation: OSR growth has not kept up with spending commitments. The First and Third SFCs' tax effort indexes have not been methodically applied,

and property tax reform is still unfinished (State Finance Commission [Kerala], 2006; Oommen, 2015).

Vertical Fiscal Dependency: Local governments lack authority in rate setting and tax diversification, even in the face of predictable transfers. To achieve true fiscal empowerment, the spectrum of assignable taxes must be expanded through legislative reform (Oommen, 2021; Thomas, 2016).

Horizontal Inequality: While rural Panchayats, particularly in underdeveloped regions, continue to rely on transfers, wealthier urban entities show greater fiscal resilience. Although this was partially addressed by the Fifth SFC's Composite Deprivation Index, discrepancies still exist (KILA, 2018).

Capacity and Human Resource Gaps: Utilization and compliance are impacted by the large variations in digital literacy and financial management among LSGIs. Although KILA and CESS training has raised standards, ongoing professional assistance is crucial (KILA, 2022). Limited Fiscal Innovation: Local governments rarely look into new sources of income like municipal bonds, environmental taxes, or congestion fees. Pilot programs were suggested by the Sixth SFC (2021), but adoption is still limited (Rajan, 2021).

4.7 Synthesis: From Fiscal Devolution to Financial Autonomy

Overall, the empirical evidence suggests that Kerala's decentralization approach has succeeded in achieving procedural autonomy but not significant fiscal independence. Although the state's LSGIs have reliable transfers, strong accountability systems, and digital transparency, they are nonetheless financially reliant. The SFC framework has been successful in creating a culture of fiscal discipline and substituting norms for discretion. However, actual sovereignty is constrained by the lack of widespread local taxes and financial innovation (Oommen, 2015; Nair & Kumar, 2022).

However, Kerala is positioned as a model for fiscal decentralization in India due to its constant use of SFCs, participatory governance, and technological integration. The ability of local governments to create, manage, and transparently maintain fiscal resources is an example of how financial autonomy is a dynamic competence rather than a static situation (Oommen, 2021; Rajan, 2021).

Section 5 Discussion and Policy Implications

With six State Finance Commissions (SFCs) and more than thirty years of decentralization, Kerala offers a remarkable example of institutional resilience, constitutional dedication, and fiscal federalism innovation. Kerala has attained a high level of devolutionary depth but only limited financial autonomy, as the previous review showed. In order to extract useful lessons for policy design, these findings are examined in this section in connection to theoretical frameworks, including fiscal federalism, principal–agent theory, and public choice theory. In order to maintain local financial equity and resilience in the post-pandemic age, the discussion also outlines new reform goals (Oommen, 2021; Nair & Kumar, 2022; Rajan, 2021).Kerala is a prime example of effective vertical fiscal coordination but inadequate horizontal efficiency from the perspective of Oates's (1972) fiscal federalism theorem. In order to eliminate allocative

inefficiencies and ensure that public goods are supplied closer to citizens, the state has institutionalized predictable, rule-based intergovernmental transfers (Oommen, 2021; State Finance Commission [Kerala], 1996–2021). However, the disparity between revenue authority and expenditure responsibility still exists.

Even after several changes, Kerala's own-source revenue (OSR) is still structurally weak, making up only 12–18% of all local revenues (Nair & Kumar, 2022). This discrepancy illustrates the soft-budget limitation discussed in the literature on fiscal federalism: subnational organizations have little motivation for local tax effort while higher-tier governments guarantee transfers (Rodden, Eskeland, & Litvack, 2003). However, things are a little different in Kerala. There is no "flypaper effect," which means funds have not discouraged local income collection, according to studies like Oommen (2015) and Mohanty, Sethi, & Mohanty (2024). Rather, limited tax resources, outdated property value, and political limitations are the main causes of low OSR. Kerala's problem is therefore structural rather than behavioural; revenue flexibility and new tools are needed for fiscal empowerment, not only incentives (Thomas, 2016).

Kerala's changing balance between oversight and autonomy can be explained by the principal-agent theory. Although the State (principal) gives LSGIs (agents) fiscal authority, it maintains responsibility through planning standards, audits, and digital monitoring (Shah, 2007; Oommen, 2021). Kerala changed from ex-ante control to ex-post responsibility as decentralization progressed; this change was in line with principal–agent efficiency principles. A paradigm changes in minimizing information asymmetry is represented by the implementation of digital audit trails via Sulekha, SAANKHYA, and Plan Space. According to KILA's empirical evaluations (2018, 2022), real-time monitoring reduced leakages and enhanced fiscal compliance. However, imbalance still exists at the capacity level: smaller Panchayats face difficulties with data management and technical literacy, which delays grant eligibility and digital reporting (Nair & Kumar, 2022).

As a result, Kerala's financial independence is now dependent on its technological capacity. This poses a crucial equity-related policy question: if digital literacy is a need for fiscal empowerment, poorer local bodies may be at a disadvantage. Future policy must address this issue by providing targeted capacity development and implementing digital inclusion initiatives (KILA, 2022).

According to public choice theory and the participatory governance model, Kerala's fiscal decentralization is still highly participative (Isaac & Franke, 2000). By coordinating budgets with local preferences, citizen forums like Ward Committees and Gram Sabhas improve allocative efficiency. Participatory planning enhances service outcomes, transparency, and citizen happiness, according to empirical data (Oommen, 2015; Thomas, 2016). However, participative intensity and fiscal performance are not necessarily correlated. Despite Kerala's early institutionalization of participatory planning, administrative capability and data quality are more important for fiscal effectiveness than participation alone. Because fiscal empowerment also requires management skills, digital integration, and outcome-based performance monitoring, participatory techniques are still essential but insufficient (KILA, 2022).

Five interconnected reform paths for strengthening local financial autonomy and resilience are revealed by combining Kerala's fiscal experience with decentralization theory.

a. Rethinking Financial Independence

Financial autonomy must encompass the ability to mobilize and manage revenue in addition to fund transfers (Oommen, 2021). GIS-based property tax revaluation, automated valuation systems, and income diversification through shared-service tariffs, congestion levies, and environmental fees are among the top measures (State Finance Commission [Kerala], 2021). Local fiscal space can be expanded without compromising equity through regular revisions to user fees and an integrated fiscal cadastre that connects Treasury, land records, and registration data (Nair & Kumar, 2022).

b. Establishing Local Financial Accountability

Kerala should implement a Local Fiscal Responsibility Code (LFRC) that is in conformity with the State's Fiscal Responsibility and Budget Management Act (2003) in order to strike a balance between autonomy and discipline. The LFRC would compel all LSGIs to have Medium-Term Fiscal Plans, cap establishment expenditures, and demand the disclosure of contingent liabilities (Oommen, 2015; Thomas, 2016). Transparency and predictability will be ingrained in all layers by such regulations.

c. Using Dynamic Transfer Formulas to Deepen Equity

The population is overemphasized in current devolution models. To lessen horizontal gaps, future models must incorporate fiscal capacity, deprivation, and cost disabilities. Although it offers a helpful template, the Fifth SFC's Composite Deprivation Index (CDI) has to be updated on a regular basis with current fiscal data (KILA, 2018; Oommen, 2015). Efficiency and fiscal justice are complemented by dynamic equalization.

d. Connecting Capacity Building to Performance

Performance-linked awards should change from being punitive tools to developmental incentives that combine capacity support with assessment. In order to ensure that weak LSGIs are strengthened rather than penalized, the Sixth SFC's plan for a State Fiscal Council for Local Governments can combine performance evaluation with training through KILA and CESS (Rajan, 2021; KILA, 2022).

e. Encouraging Resilience-Oriented and Digital Governance

Resilience finance needs to be institutionalized in post-pandemic fiscal policy. The Sixth SFC's suggested Local Resilience Fund (LRF) need to be a permanent window for health and disaster emergencies. Concurrently, open-data portals and AI-assisted fiscal dashboards can democratize financial data, strengthening citizen monitoring and flexible governance (Rajan, 2021; Oommen, 2021).

Section 6 Conclusion and Future Directions

Through six State Finance Commissions (SFCs), this study investigated the development of fiscal decentralization and financial autonomy of local governments in Kerala (1996–2021). Based on constitutional legitimacy, participatory governance, and digital transparency, Kerala

has developed one of India's most reliable and rule-based fiscal devolution systems over the course of three decades (Oommen, 2015; KILA, 2022).
The analysis shows that institutional consistency, not budgetary independence, is the key to Kerala's success. Each SFC strengthened accountability procedures, increased transfer predictability, and broadened the extent of fiscal devolution. Participatory planning bolstered local legitimacy, while digital platforms like Sulekha, SAANKHYA, and PlanSpace improved transparency (Isaac & Franke, 2000; State Finance Commission [Kerala], 2021).

Fiscal autonomy is still restricted, though. Rarely does own-source revenue (OSR) surpass 15% of overall receipts, resulting in a foreseeable reliance situation (Oommen, 2015). Kerala's local governments rely largely on intergovernmental transfers for development expenditures, while having functional authority but little funding (Nair & Kumar, 2022).One distinctive and reproducible example of fiscal federalism in India is Kerala's decentralization. The establishment of citizen-centric fiscal accountability, the continuation of SFC cycles, and the integration of digital and participatory procedures are among its major accomplishments (Oommen, 2021; KILA, 2022).
Kerala shows that consistent institutional design improves efficiency and democratic legitimacy, while other states exhibit erratic or politically motivated devolution (Isaac & Franke, 2000). However, the model also demonstrates that fiscal innovation cannot be replaced by institutional depth; local taxes and fiscal restraint are still necessary to maintain long-term decentralization (Oommen, 2015; Nair & Kumar, 2022).From political empowerment in the 1990s to digital fiscal resilience in the 2020s, Kerala's fiscal decentralization has changed with time. Its experience demonstrates that sustainable local governance requires the coexistence of autonomy, responsibility, and adaptability (Rajan, 2021; KILA, 2022).However, converting predictable dependency into productive autonomy continues to be the fundamental obstacle. In order to ensure that financial power actually resides where democracy is most vibrant—at the local level—the next stage of Kerala's decentralization must concentrate on fiscal innovation, responsibility, and resilience (Oommen, 2021).

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FROM DREAMS TO REALITIES: UNDERSTANDING THE SOCIOECONOMIC DYNAMICS OF KERALA'S GULF MIGRATION

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ABSTRACT

Kerala's migration to the Gulf region has been one of the most significant socio-economic phenomena in the state since the 1970s. Large-scale emigration, driven by limited local employment opportunities and attractive prospects abroad, has generated substantial remittances that transformed Kerala's economy. These inflows have improved household incomes, financed education and healthcare, reduced poverty, and contributed to the state's overall human development indicators. Migration has also influenced Kerala's social fabric by altering consumption patterns, reshaping aspirations, and strengthening diaspora networks. However, the process has created challenges, including labour market imbalances, a rising dependency on foreign economies, and social issues such as family separation and intergenerational gaps. This dual impact highlights the complexity of Gulf migration: while it has acted as a key driver of prosperity and modernization, it has also reinforced structural vulnerabilities. Understanding these socio-economic dynamics is essential for framing sustainable policies that both protect migrants and channel their contributions toward Kerala's long-term development.

KEYWORDS: *Kerala, Gulf Migration, Remittance, Socioeconomic Impacts.*

INTRODUCTION

Keralites have been migrating to other States in India and to other countries for several decades in search of employment. There are over 20 million emigrants around the world; India is the biggest NRI community and largest recipient of international remittances in the world (World Bank 2015), among the Indian States, Kerala rank first in terms of both. Remittance behaviour is affected by multiple interlocking factors including age, education, duration of stay, wages, migrant status, working/living conditions, motive for remitting, size of household etc. During the last decade, India has emerged as the single largest recipient of private remittances from abroad. The state of Kerala has been a star performer in this followed by Punjab and Gujarat. The role of foreign remittances in the economy of the state of Kerala in the form of money sent by its workers is now widely acknowledged.

Kerala's migration to the Gulf region has been one of the most significant socio-economic phenomena in the state since the 1970s. Large-scale emigration, driven by limited local employment opportunities and attractive prospects abroad, has generated substantial remittances that transformed Kerala's economy. As of KMS 2023, about 2.2 million Keralites live abroad,

majority in GCC states. Six countries in the Arabian Peninsula, called Gulf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates), accounted for 96.8% of the total emigrants in 1998; it came down to 89.4% in 2018 (Sunny et al. 2020: 21). Kannan & Hari 2020.

Objectives of the Study

The paper presents the trend and pattern of Gulf Migration from Kerala and analyze the socioeconomic dynamics of Kerala's gulf migration. This paper is mainly based on the data given in Kerala Migration Surveys conducted by Center for Development Studies, Thiruvananthapuram from 1998 onwards. The KMS 2023 was conducted by the Gulati Institute of Finance Taxation (GIFT) with technical support from the International Institute of Migration and Development (IIMAD). Migration has influenced Kerala's social fabric by altering consumption patterns, reshaping aspirations, and strengthening diaspora networks. Hence it is very essential to understand the socioeconomic dynamics of Kerala's migration trends. Various literatures are available regarding different aspects of gulf migration from Kerala but none of the studies concentrated on the socio-economic dynamics occurred in destination, demography, regional, educational, labour and remittances. We have used graphs, percentages and compound annual growth rate for the analysis.

TREND AND PATTERN OF GULF MIGRATION FROM KERALA

Trends in Emigration from Kerala

Within the Gulf region itself, the UAE have always been a favourite destination for Keralites. During the 70' and the 80', the country represented the first place of emigration with 40 to 50 % of the migrants working in the GCC countries. During the second wave, this percentage came to a relative stagnation whereas Saudi Arabia became the first destination for Keralites. The following table illustrates the trend of migrant's destination countries from 1998 to 2023.

Table 1 Country of Residence of Emigrants, 1998-2023(percent)

Destination Countries	2023	2018	2016	2013	2011	2008	2003	1998
UAE	38.6	39.1	41.5	37.5	38.7	41.9	36.5	31.0
Saudi Arabia	16.9	23.0	22.5	21.8	25.2	23	26.7	37.5
Oman	6.4	8.6	7.6	7.9	8.6	7.6	8.3	10.2
Kuwait	5.8	6.0	5.5	7.6	5.6	5.9	6.2	5.0
Bahrain	3.7	3.8	3.8	6.2	4.5	4.6	5.9	5.5
Qatar	9.1	8.7	8.4	4.4	6.5	5.5	5.4	4.6
Other West Asia	0.0	0.0	0.3	0.9	0.3	0.0	0.1	0.0
Sub-Total	80.5	89.2	89.6	86.3	89.4	88.5	89.0	93.9
USA	2.2	2.2	3.8	2.9	3.0	4.7	5.3	2.2
Canada	2.5	0.7	1.2	0.5	0.4	0.6	0.3	0.0
United Kingdom	6.0	1.8	1.5	1.6	2.0	1.8	1.2	0.0
Other Europe	0.0	0.0	0.4	0.8	0.5	0.4	0.8	0.0
Africa	0.5	0.3	0.5	0.6	0.6	0.6	0.9	0.0
Singapore	0.5	0.6	0.5	0.4	0.5	0.5	0.8	0.0
Maldives	0.2	0.3	0.2	0.1	0.3	0.3	0.7	0.0

Malaysia	0,4	0.5	0.3	0.4	0.6	0.5	0.3	0.0
Other SE Asia	0.0	0.0	0.6	2.2	0.7	0.4	0.4	0.0
Australia/New Zealand	1.5	1.4	0.7	1.6	1.1	1.0	0.3	0.0
Other Countries	1.5	1.2	0.7	2.6	1.1	0.6	0.0	4.0
Total	100	100	100	100	100	100	100	100

The KMS 2023 reveals the distribution of emigrants from Kerala across different countries of residence categorized by gender. Among the GCC countries, the United Arab Emirates (UAE) stood out with the highest percentage of emigrants among both males (40.2 percent) and females (31.6 percent), totaling 38.6 (table 1& 2).

Table 2: Country of Residence of Emigrants (Percent), 2023

Country	Male	Female	Total
United Arab Emirates(UAE)	40.2	31.6	38.6
Saudi Arabia	18.8	8.8	16.9
Oman	6.7	4.9	6.4
Qatar	9.9	5.2	9.1
Kuwait	5.8	5.9	5.8
Bahrain	3.9	3.1	3.7
GCC Countries	85.4	59.5	80.5
Europe(excluding United Kingdom)	2.4	5.3	3.1
United Kingdom	4.0	14.7	6.0
United States of America	1.6	4.6	2.2
Canada	2.0	4.6	2.5
Australia	1.2	3.0	1.5
New Zealand	0.5	1.9	0.8
Russia	0.1	0.6	0.2
Malaysia	0.4	0.2	0.4
South Africa	0.5	0.1	0.4
Singapore	0.3	1.2	0.5
Israel	0.0	1.2	0.2
China	0.1	0.2	0.2
Maldives	0.2	0.2	0.2
Other Countries	1.3	2.4	1.5
Non-GCC Countries	14.6	40.5	19.5
Total	100.0	100.0	100.0

Saudi Arabia followed with 18.8 percent of male emigrants and 8.8 percent of female emigrants, contributing to a total of 16.9 percent. Among the non-GCC countries, the United Kingdom attracted 4.0 percent of male emigrants and 14.7 percent of female emigrants, constituting about 6.0 percent of the emigrants from Kerala. The United States of America, Canada, and Australia closely followed, hosting 2.2 percent, 2.5 percent and 1.5 percent of the emigrants from Kerala respectively. Overall, GCC countries accounted for 80.5 percent of emigrants and non-GCC countries accommodated 19.5 percent of emigrants in 2023.

Table 3: Country of Residence of Emigrants, 1998-2023

Year	GCC Countries (percent)	Non-GCC Countries (percent)
1998	93.8	6.2
2003	89.0	11.0
2008	88.6	11.4
2011	89.3	10.7
2013	86.3	13.7
2016	89.6	10.4
2018	89.2	10.8
2023	80.5	19.5

The KMS 2023 illustrates the evolving trends in emigrants' choice of residence countries, specifically regarding GCC and non-GCC countries over the last two decades. Table 3 reveals a gradual decline in the percentage of emigrants residing in GCC Countries, dropping from 93.8 percent in 1998 to 80.5 percent in 2023. In contrast, the percentage of emigrants opting for non-GCC countries has shown a corresponding increase, climbing from 6.2 percent in 1998 to 19.5 percent in 2023. This data emphasizes a notable shift in emigrants' preferences towards non-GCC countries due to the large-scale migration of students.

There are 21,21,887 emigrants from Kerala across the world. It is 1.49 lakhs lesser than the 2016 KMS and 2.78 lesser than 2013 KMS data. Furthermore, there is a reduction in emigration from the last ten years and 2018 isn't any different. The figure shows that the rate of growth of emigration has been continuously decreasing since 2008. Although a negative trend in migration is observed since 2008, it can also be noted that there was a growth in some years particularly in the year 2011 and 2013. It has shown 87000 people emigrated more in the period 2008 to 2011 and 1.1 lakhs more in the period 2011 to 2013. (Table 4)

The inter-survey growth rate since 1998 has dropped. The inter survey differences vary from one interval to another from 4.7 lakhs to minus 1.4 lakhs. It has shown positive growth for the first four periods and negative growth for the last periods. Besides this, it is clear from the Table that the inter-survey difference is reducing by the time from 1998 to 2018 except in the year 2013. We can see the highest growth rate at the initial phase (1998-2001) and the lowest growth rate at the recent phase (2018-2016), where the base year had 1.3 million and 2.1 million populations at the end. The first two periods which had five-year interval also granted for high growth rate (Fig.1& table 4) (Rajan2019**)**.

Table 4: Number of emigrants from Kerala to the Gulf, 1998 to 2023

year	**Migrants**	**Percent increase or decrease**
1998	1361919	
2003	1838478	35
2008	2193412	19.3
2013	2400375	9.4
2018	2121888	-11.6
2023	2154275	1.5

Source: KMS2023

Figure 1: Trends in Emigration, 1998-2023

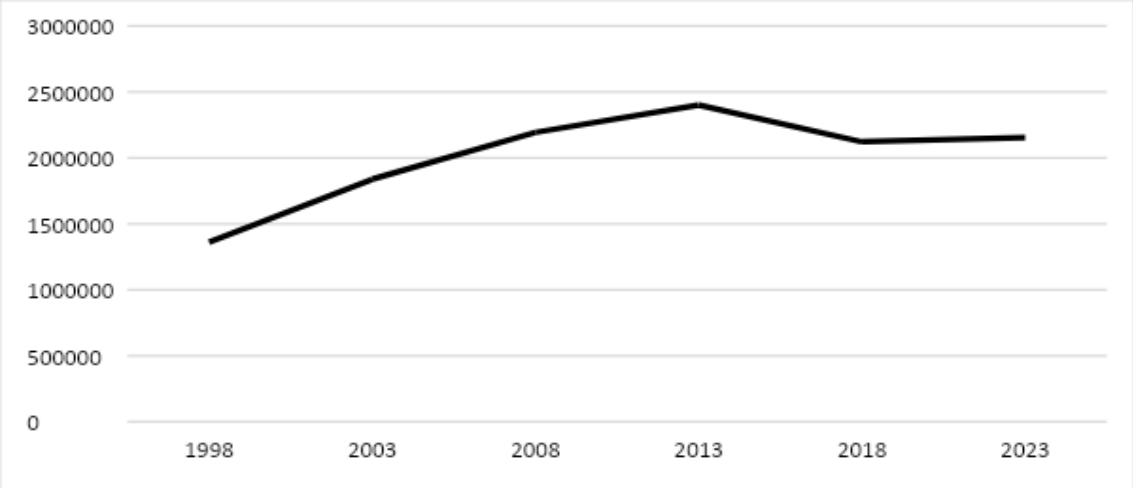

Table 5: Emigrants by Districts

Districts	2023	2018	2013	2011	2008	2003	1998
Thiruvananthapuram	5.0	6.46	10.07	10.07	14.06	9.59	9.14
Kollam	9.08	11.34	8.33	7.34	9.46	7.56	8.07
Pathanamthitta	4.6	5.18	5.89	4.01	5.52	7.15	7.27
Alappuzha	5.1	6.45	3.88	6.33	6.01	4.61	4.08
Kottayam	6.2	7.85	4.50	5.15	4.07	2.60	5.80
Idukki	.01	1.55	1.00	0.34	0.26	0.54	0.43
Ernakulam	8.67	2.52	7.97	5.97	5.52	7.61	6.59
Thrissur	10.82	11.36	9.59	8.70	12.95	11.82	9.73
Palakkad	0.57	4.20	2.94	6.23	8.65	8.51	9.68
Malappuram	17.53	19.14	18.98	17.93	15.25	21.78	14.78
Kozhikode	8.99	7.57	9.44	9.06	9.08	8.51	9.11
Wayanad	1.50	1.44	0.94	1.18	0.64	0.33	0.42
Kannur	9.85	11.77	12.14	12.41	5.43	6.46	11.01
Kasaragod	3.96	3.17	4.35	5.28	3.09	2.84	3.89
Total	100.00	100.00	100.00	100.00	100.00	100	100.00

KMS

Malappuram has been the highest migrant sending district. The district also has the maximum number of emigrant population with nearly one-fifth of the total population. The second top district, Kannur also has a good number of emigrants from last one decade followed by Thrissur (11.4); Kollam (11.3). The percentage growth of the district emigrants has increased rapidly since 2008. The districts from the bottom list, Idukki and Wayanad are continuing the same but also showing slight growth in percentage share from the total emigrant population. The top emigration is the Gulf region with 89.2 percent of the total migration. Remaining 10 percent of

the emigrants is concentrated in other countries like the USA, UK, and Australia, etc. There is a slight decrease from 2016 to 2018 for the Gulf with a small decline for UAE; in contrast, the slender growth of other Gulf counties compensates not to reduce much in the total Gulf number. But compared to the last five, the emigrant population is showing a significant decline. There is no doubt UAE is the favourite destination for Keralites from the beginning and in 2018 also not different from that. About 1.89 million emigrants are residing in the Gulf countries (KMS 2018)

Regional Distribution of Emigrants

In 2023, the regional distribution of emigrants revealed that the North region had the largest share of emigrants, constituting 41.8 percent of the total emigrants. This was followed by the Central region contributing 33.1 percent, and the South region making 25 percent (Table 6). The 2023 KMS findings reinstate the North region (Kannur and Calicut airports) as the primary hub for emigration, followed by the Central (Kochi airport) and South region (Thiruvananthapuram airport) providing valuable insights into migration trends within Kerala.

Table 6: Regional Distribution of Emigrants, 2023

Region	No of Emigrants	Percent
South	539472	25.0
Central	713537	33.1
North	901266	41.8
Total	2154275	100.0

Note: South regions: Thiruvananthapuram, Kollam, Pathanamthitta and Alappuzha
Central regions: Palakkad, Thrissur, Ernakulam, Idukki, Kottayam
North regions: Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram

Table7: Emigrants by religious groups, 2023

Religion	**Percent of emigrant population**	**Percent of total population**
Hindu	35.2	53.2
Christian	22.3	16.9
Muslim	41.9	29 .3
Others	0.6	0.6
Total	100.0	100.0

Table 7 shows the distribution of emigrants across different religious groups. Most of the emigrants from Kerala are Muslims at 41.9 percent, followed by Hindus at 35.2 percent. Christians make up 22.3 percent of the emigrants. The substantial migration rate among Muslims is highlighted by the fact that they constitute 41.9 percent of the emigrant population, despite comprising only 29.3 percent of Kerala's overall population. Similarly, Christians constitute 22.3 percent of the emigrant population, despite accounting for only 16.9 percent of Kerala's total population.

Table 8 reveals that Kollam, Kannur and Malappuram had a sharp fall in the number of emigrants per 100 households in 2023 with 24.9,29.4 and 33.8 emigrants respectively as compared to 32.8,38. 8 and 42.1 emigrants per 100 households in 2018.Thiruvananthapuram,

Pathanamthitta, Alappuzha, Kottayam, Idukki and Thrissur also experienced a significant decrease from the levels seen in 2018.

Table 8: Emigrants per Household, 1998-2023

Districts	EMI per100 Household						Percent					
	2023	2018	2013	2008	2003	1998	2023	2018	2013	2008	2003	1998
Thiruvananthapuram	11.3	15.2	28.1	35.6	21.5	19.9	5.0	6.5	10.1	14.1	9.1	9.6
Kollam	24.9	32.8	28.9	30.8	24.4	18.4	9.1	11.3	8.3	9.5	8.1	7.6
Pathanamthitta	28.0	31.9	42.8	37.4	44.3	33.1	4.7	5.2	5.9	5.5	7.3	7.2
Alappuzha	21.8	23.6	16.9	24.2	15.2	13.2	6.2	6.4	3.9	6.0	4.1	4.6
Kottayam	25.3	31.3	21.5	18.2	24.0	9.1	6.7	7.9	4.5	4.1	5.8	2.6
Idukki	8.4	11.3	8.4	2.0	2.9	2.9	1.2	1.6	1.0	0.3	0.4	0.5
Ernakulam	18.6	5.8	22.5	15.1	16.9	17.0	8.7	2.5	8.0	5.5	6.6	7.6
Thrissur	24.4	27.9	28.9	38.9	27.2	30.4	10.8	11.4	9.6	13.0	9.7	11.8
Palakkad	15.3	12.2	10.5	32.1	32.6	18.3	5.8	4.2	2.9	8.7	9.7	8.5
Malappuram	33.8	42.1	53.7	53.4	45.0	49.2	17.5	19.1	19.0	15.3	14.8	21.8
Kozhikode	21.0	19.7	30.7	30.4	28.6	22.0	9.0	7.6	9.4	9.1	9.1	8.5
Wayanad	14.2	14.5	11.4	7.4	4.4	2.9	1.5	1.4	0.9	0.6	0.4	0.3
Kannur	29.4	38.8	49.9	22.6	43.2	19.0	9.9	11.8	12.1	5.4	11.0	6.5
Kasaragod	24.3	21.3	36.2	26.3	30.6	19.1	4.0	3.2	4.3	3.1	3.9	2.8
Kerala	22.2	24.0	29.3	29.0	26.7	21.4	100.0	100.0	100.0	100.0	100.0	100.0

Emigrants by Sex, District-wise, 2023

Figure 2 breaks down the number of emigrants by sex in all the districts of Kerala. For Kerala as a whole, only 19.1 percent of emigrants are females compared to 80.9 percent of male emigrants. The gap between male and female migrants is narrowest in Kottayam districts and widest in Malappuram.

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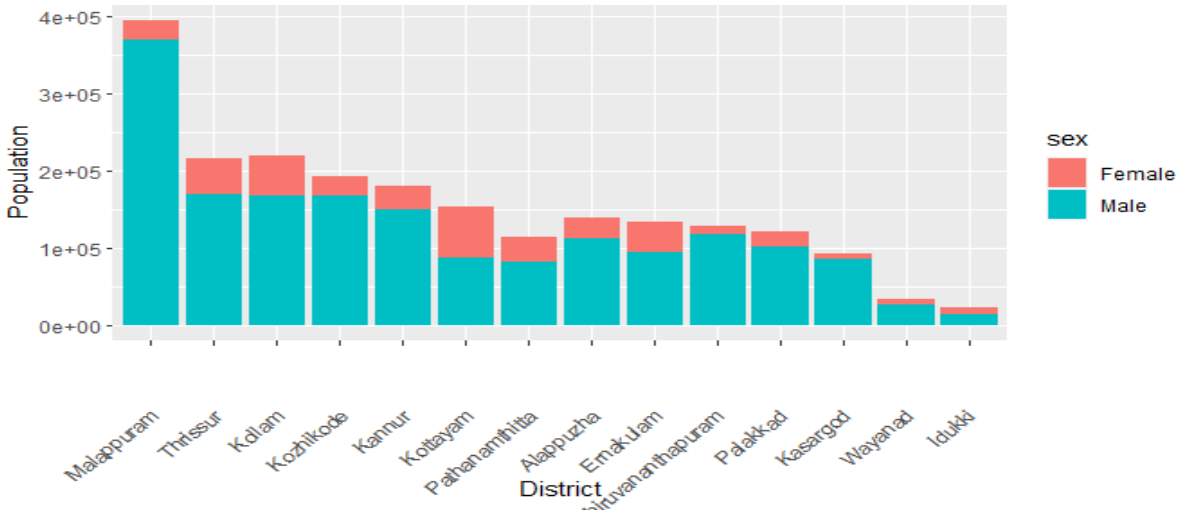
Figure 2: Emigrants by Sex, District-wise, 2023



International migration is dominated by males in all the districts of Kerala.

Table 9: Marital Status of Emigrants by Sex, 2023

Marital Status	Male	Female	Total Emigrants
Never married	28.7	36.8	30.3
Married	70.6	61.5	68.9
Widow/ Widower	0.3	1.4	0.5
Divorced	0.3	0.0	0.3
Separated	0.1	0.2	0.2
Total	100.0	100.0	100.0

Table 9 shows that percent of the emigrants have never married and 68.9 percent are married. Less than 1 percent of emigrants were classified as widow/widower, divorced or separated. About 28.7 percent of male emigrants and 36.8 percent of female emigrants had never married. Most male emigrants (70.6 percent) and female emigrants (61.5 percent) were married. It is evident from that data that there are more unmarried female migrants when compared to their male counterparts. However, with regard to married individuals, there are more married males than married female emigrants.

Table 10 shows that 41.4 percent emigrants had completed their degree, where as 26.7 percent and 17.7 percent of emigrants had only completed their primary and secondary education respectively. Among female emigrants, 71.5 percent of them had completed their degrees and 12.3 percent had completed their primary education. Similarly, 34.7 percent of male emigrants had completed their degrees, and 29.8 percent had completed their primary education. Among degree holders who are migrants, females account for 71.5 percent compared to 24.7 percent among males – almost double than males.

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Table 10: Education Status of Emigrants by Sex, 2023

Education Status	Male	Female	Total
Illiterate	0.0	0.1	0.0
Less than Primary	1.2	3.5	1.6
Primary to Secondary	29.8	12.3	26.7
Higher Secondary	19.9	7.4	17.7
Diploma	14.3	5.2	12.7
Degree and above	34.7	71.5	41.4
Total	100.0	100.0	100.0

Table 11 highlights the economic activity of emigrants by sex in 2023. It indicates that out of the total male emigrants, most of them (84.1 percent) were labour emigrants while 7.7 percent of them were students and only 3 percent were unemployed. In the case of females, 46.7 percent of female emigrants were employed in the labour force and 26.6 percent of them were student emigrants. A higher proportion of female emigrants were students (26.6 percent) compared to male emigrants (7.7percent).Further, 21.5 percent of females reported not being in the labour force. Although student emigrants covered 11.3 percent of total emigrants, the labour migrants constituted the majority with 76.9 percent.

Table 11: Economic Activity of Emigrants by Sex, 2023

	Male	Female	Total
Labour Force	84.1	46.7	76.9
Student	7.7	26.6	11.3
Unemployed	3.0	5.2	3.4
Not in Labour Force	5.2	21.5	8.3
Total	100.0	100.0	100.0

Table 12: Occupation of Emigrants by Sex, 2023

Occupation	Male	Occupation	Female
Salesperson	12.9	Nurse and Nursing assistant	51.6
Car/Taxi driver	11.0	Engineer	4.3
Engineer	7.2	Teacher	3.6
Cashier, ticket clerks, clerks, accountant	4.8	Cashier, ticket clerks, clerks, accountant	2.9
Electrician	3.8	Household worker/Maid/Servant (full-time)	2.8
Mechanic	3.6	Chartered Accountant/Cost Accountant	2.7
Manager	2.8	Doctor	2.2
Construction worker	2.7	Salesperson	1.9
Hotel administration related staff	2.2	Pharmacist	1.4
Storekeeper	2.1	Childcare worker	1.2
Machinery repair worker/ Welder	1.8	Cook	1.1
Cook	1.7	Data entry operator	1.1

Chartered Accountant/Cost Accountant	1.7	Laboratory/X-ray Technician	1.0
Computer Programmer	1.6	Computer Programmer	1.0
Others	40.1	Others	21.2
Total	100.0	Total	100.0

Table 12 captures the major occupations of emigrants by Sex. Most males were engaged as salespersons at 12.9 percent, followed by car/ taxi drivers at 11 percent. Regarding female emigrants, an overwhelming 51.6 percent of them were working as a nurse or nursing assistant. Occupations among men are more evenly distributed compared to female emigrants.

Trend and Growth of Remittances

According to KMS 2023, the total remittances to Kerala saw a significant surge after the pandemic. Total remittances reached Rs 216,893 crores in 2023 from Rs 85,092 crores in 2018, marking a154.9 per cent increase. The total remittances of Rs 216,893 crores imply a remittance of Rs 61,118 per capita for a population of 3,549 crores. A similar trend of increased remittances to households is also captured by KMS 2023, wherein the remittances sent by the emigrants to Kerala households amounted to Rs 37,058 crores, reflecting a 20.6 per cent increase from the 2018 figures. According to the Kerala Migration Report 2014, remittances to Kerala have continued to grow ever since Keralites started migrating to the Gulf region. Total remittances to Kerala during the 12-month period ending on March 1, 2014, were Rs 72,680 crores. This amount is about 46 percent higher than the remittances in 2011. These numbers indicate that the rate of growth of remittances has accelerated in recent years in spite of the slowing down of the annual increase of emigration from the state since 2008.Global remittances are projected to decline sharply by about 20 per cent in 2020 due to the economic crisis persuaded by the COVID-19 pandemic and shutdown • An estimate shows the low- and middle-income economies to fall by 19.7 per cent to $445 billion, constitute a loss of a crucial financing lifeline for many vulnerable households (Economic Review2021)The total remittances to Kerala in 2014 are estimated to be Rs.71,142 crores. It was Rs 49,695 in 2011, and Rs.43,288 crores in2008.Remittances per household were Rs 86,843 in 2014 compared with Rs. 63,315 per household in 2011 and Rs. 57,227per household in2008. (KMS 2014). According to the KMS 2023, the number of emigrants from Kerala is estimated to be 2.2 million, closely aligning with the 2.1 million recorded in the KMS 2018.

Table 13: Total Remittances to Kerala. 2000-2023

	Non-Resident Indian Deposits			**Rs (Crores)**	
Year	**India**	**Kerala**	**Ratio**		
	Crores Rs	Crores Rs	Kerala/ India	Remittance to India	Remittance to Kerala
2000-2001	94544	18724	0.1980	58855	11712
2001-2002	107686	21431	0.1990	68071	13601
2002-2003	122772	24534	0.1998	76155	16053
2003-2004	136088	28696	0.2109	96494	19299
2004-2005	150444	30100	0.2001	84247	17001

2005-2006	144282	29121	0.2018	97955	18562
2006-2007	161834	30671	0.1895	128310	23763
2007-2008	179788	33304	0.1852	149403	25578
2008-2009	174623	29889	0.1712	229479	40411
2009-2010	210118	37019	0.1762	234560	38093
2010-2011	227078	36886	0.1624	246274	40217
2011-2012	230812	37690	0.1633	301967	48798
2012-2013	299840	48454	0.1616	396600	64090
2013-2014	385202	66190	0.1718	412360	70857
2014-2015	624101	93883	0.1504	436418	65650
2015-2016	720997	109603	0.1520	440950	67031
2016-2017	841956	135609	0.1611	429453	69170
2017-2018	757751	152349	0.1900	447850	85092
2018-2019	820737	169944	0.2071	553000	114506
2019-2020	941002	190055	0.2020	601241	121433
2020-2021	970347	208698	0.2151	617882	132891
2021-2022	1070598	229636	0.2145	674336	144640
2022-2023	1134698	238409	0.2101	907792	190734
2023-2024	1154084	240975	0.2088	1038750	216893

Statistics on the Indian Economy, RBI, 2023-24 Non-Resident Deposits; State Level Banker's Committee, 2023 (RBI survey of inward remittances for 2023- 2024). The data on total remittances, calculated from the RBI on NRI deposits, from 1998 to 2023 reveals a consistent upward trend, with remittances increasing significantly from ₹13,652 crores in 1998 to ₹216,893 crores in 2023 (Table13). While the growth rates have varied over the years, the highest percentage increase was seen between 2018 and 2023 due to the resilience of migrants. This growth is mirrored in the rise of remittances per household from ₹96,185 in 2018 to 223,729 in 2023, indicating a substantial increase in the average remittance amount received per household (table 14).

Table 14: Trends in Total Remittances. 1998-2023

Year	Remittances (crores)	Percent Increase	Remittances Per Household (Rupees)
1998	13652	--	21,469
2003	18465	35.3	24,444
2008	43288	134.4	57,215
2011	49695	14.8	63,315
2013	71142	43.2	86,843
2018	85092	19.6	96,185
2023	216893	154.9	223,729

Table 15 provides a comparative analysis of remittances across various districts in Kerala during the years 2018 and 2023. In 2023, the total remittances to Kerala amounted to ₹216,893 crores, a significant increase from ₹85,092 crores in 2018. Kollam had the highest share, receiving

₹38,530 crores (17.8 percent of the total) in 2023, up from ₹12,748 crores (15.0 percent) in 2018, with per household remittances rising from ₹173,816 to ₹490,091. Thiruvananthapuram also saw a substantial increase in both total remittances (from ₹8,045 crores to ₹23,016 crores) and per household remittances (from ₹89,263 to ₹241,870).

Table15: Total Remittances by Districts, (cores) 2023

Districts	CAGR	1998	2003	2008	2011	2013	2018	2023
Thiruvananthapuram	**45.7**	339	831	1388	1443	1847	2904	23016
Kollam	**62.48**	286	782	1294	1346	2168	4602	38530
Pathanamthitta	**53.9**	233	412	639	633	1478	2220	9367
Alappuzha	**51.7**	217	578	570	699	2065	1795	12189
Kottayam	**53.3**	101	250	656	737	699	1062	11283
Idukki	**130.1**	4	17	45	55	228	277	1521
Ernakulam	**18.2**	408	654	862	1865	3210	435	17803
Thrissur	**36.6**	510	1395	1723	1307	2527	3350	19650
Palakkad	**28.3**	339	495	997	1003	1009	1270	6593
Malappuram	**54.08**	616	1248	1874	2752	3510	6326	35203
Kozhikode	**58.7**	218	585	1153	1189	1967	2662	17752
Wayanad	**125.7**	6	29	164	176	303	432	6363
Kannur	**64.7**	203	421	809	1566	1976	2320	14055
Kasaragod	**76.32**	52	269	337	358	1294	1061	3567
Total	**50.73**	3530	7965	12511	15129	24374	30717	216893

Table 16 provides a comparative analysis of remittances across various districts in Kerala during the years 2018 and 2023. In 2023, the total remittances to Kerala amounted to ₹216,893 crores, a significant increase from ₹85,092 crores in 2018. Kollam had the highest share, receiving ₹38,530 crores (17.8 percent of the total) in 2023, up from ₹12,748 crores (15.0 percent) in 2018, with per household remittances rising from ₹173,816 to ₹490,091. Thiruvananthapuram also saw a substantial increase in both total remittances (from ₹8,045 crores to ₹23,016 crores) and per household remittances (from ₹89,263 to ₹241,870).

Table 16: Total Remittances by Districts, 2023

Districts	Remittances (in Crores)		Percentto Total		PerHH(Rs)	
	2023	2018	2023	2018	2023	2018
Thiruvananthapuram	23016	8045	10.6	9.5	241870	89263
Kollam	38530	12748	17.8	15.0	490091	173816
Pathanamthitta	9367	6150	4.3	7.2	257818	178375
Alappuzha	12189	4972	5.6	5.8	198380	85848
Kottayam	11283	2942	5.2	3.5	198497	55323

Idukki	1521	767	0.7	0.9	50475	26300
Ernakulam	17803	1205	8.2	1.4	177255	13130
Thrissur	19650	9280	9.1	10.9	205871	107350
Palakkad	6593	3518	3.0	4.1	81261	48105
Malappuram	35203	17524	16.2	20.6	315460	181781
Kozhikode	17752	7374	8.2	8.7	192769	90317
Wayanad	6363	1197	2.9	1.4	279983	56729
Kannur	14055	6427	6.5	7.6	194399	99857
Kasaragod	3567	2939	1.6	3.5	101411	93078
Kerala	216893	85092	100.0	100.0	223729	96185

Conversely, Pathanamthitta's share of total remittances decreased from 7.2 percent to 4.3 percent, despite an increase in absolute remittances. Other districts such as Ernakulam, Wayanad, and Kottayam experienced a notable increase in remittances and per household figures. Overall, the data indicates a significant rise in remittances and per household remittance amounts across Kerala.

From 1998 to 2023, household remittances to Kerala showed a consistent and substantial increase (Table17). Starting at ₹3,530 crores in1998, remittances more than doubled to ₹7,965 crores by 2003 (an increase in 125.6 percent). The upward trend continued, with remittances reaching₹12,511 crores in 2008 (57.1 percent), ₹24,374 crores in 2013 (61.1 percent), ₹30,717 crores in 2018 (26.0 percent) and ₹37,058 crores in 2023 (20.6 percent). Overall, the total household remittances amounted to ₹37,058 crores in 2023, underscoring the crucial role of remittances in the state's economy and its overall development.

Table17: Trend in Household Remittances to Kerala. 1998- 2023

Years	**Remittances(crores)**	**PercentIncrease**
1998	3,530	--
2003	7,965	125.6
2008	12,511	57.1
2011	15,129	20.9
2013	24,374	61.1
2018	30,717	26.0
2023	37,058	20.6

The data on household remittances across various districts of Kerala reveals significant economic contributions from migrants (Table 18). Kollam recorded the highest remittances with ₹6,583 crores, followed by Malappuram with ₹6,015 crores. Thiruvananthapuram (₹3,933 crores), Thrissur (₹3,357 crores), and Ernakulam (₹3,042 crores) also show high remittance levels, highlighting their sizable migrant communities. In contrast, Idukki (₹260 crores) and Kasargod (₹610 crores) reported the lowest figures, possibly due to fewer migrants.

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Table 18: Household Remittances by Districts, 2023

Districts	HH Remittances in Crores
Thiruvananthapuram	3933
Kollam	6583
Pathanamthitta	1600
Alappuzha	2083
Kottayam	1928
Idukki	260
Ernakulam	3042
Thrissur	3357
Palakkad	1127
Malappuram	6015
Kozhikode	3033
Wayanad	1087
Kannur	2401
Kasaragod	610
Total	37058

Asseen from Figure3, average household remittances in 2023 have increased from 2018 in all the districts except Pathanamthitta, Palakkad, Kasargod and Malappuram.

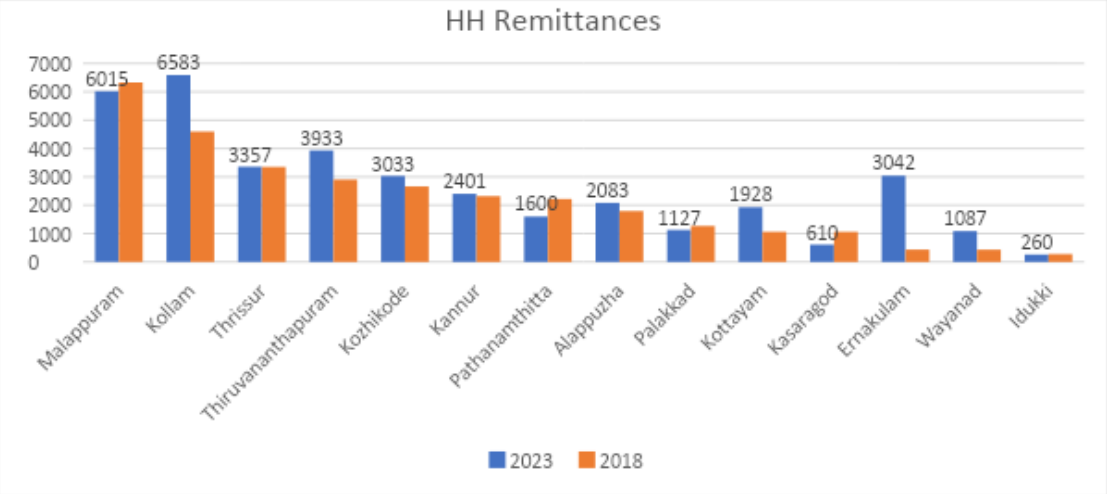

Figure 3: Distribution of Household Remittances by District, 2018 and 2023

Table 19 shows that the Muslim community continues to be the highest recipient of remittances, followed closely by the Hindu and then the Christian communities. The gap in remittances between Hindu and Muslim communities has reduced over the last decade. However, the

Christian community has shown an increase in the proportion of remittances received from 7.7 percent in 2018-2013 to 23.1 percent in 2018-2023. Both Muslim and Hindu communities have experienced a decline in growth of the proportion of remittances received in recent years with 30.7 percent in 2018-2013 to 26.7 percent in 2023-2018 in the case of Hindu communities, and 32.17 percent in 2018-2013 to 14.1 percent in 2023-2018in the case of Muslim communities.

Table 19: Household Remittances by Religion, 2023

	HH Remittances			Per cent Increase		Percent		
	2023	2018	2013	2023-2018	2018-2013	2023	2018	2013
Hindus	14490	11431	8745	26.8	30.7	39.1	37.2	35.9
Christians	7698	6252	5806	23.1	7.7	20.8	20.4	23.8
Muslims	14870	13034	9823	14.1	32.7	40.1	42.4	40.3
Total	37058	30717	24374	20.6	26.0	100.0	100.0	100.0

Distribution of use of Remittances

Table 20&21 analyses the usage pattern of remittances among migrant households. The key areas of the investment of migrant households include the renovation of houses/shops (15.8 percent), paying off loans from banks (14 percent), educational expenses (10 percent) and saving as cash in hand (9.9 percent). The largest median amount was spent on paying off debts (₹ 60,000 in the last fifteen years) followed by a median amount of ₹ 50,000 (spent in the last five years) for savings and investment in immovable properties like land. Other than expenditure (median of ₹ 25,000 per month), the largest investment appeared to be in education with a median spend of ₹10,000 per month. This highlights the importance accorded to human development by Kerala's migrants

Table 20 Median Amount to use of remittances

Particulars	Median (Amount in Rs)
Day today expenses (Food/Clothing/drinks/tobacco)	7000
Education(Monthly)	10000
Health & medical (Monthly)	5000
Investment(Immovable)	50000
Expenditure(Monthly)	25000
Debt	60000
Savings	50000
Total Money value of goods received as gifts(in Rs.)	20000

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Table 21: Percentage Distribution of use of Remittances

Particulars	Percent
Day-to-day expenses(Food/Clothing/drinks/tobacco)	6.9
Education	10.0
Health & medical	7.7
Purchase/Improve land	5.6
Renovation of house/shop	15.8
Pay loans from bank	14.0
Savings as cash in hand	9.9
Purchase of apartment/shop/House	5.3
Purchase of Car/Bikeetc	4.7
Savings and fixed deposits in banks/post office/chitfunds	4.3
Special Occasions (Eg: Weddings/Funerals)	3.6
Pay others/loans from informal credit sources	2.8
Purchase of jewellery/gold	2.4
Purchase of Households Goods(TV, sofa, etc)	2.2
Life Insurance	1.9
Donations	0.7
Insurance (Systematic Investment Plan/anyother)	0.2
Financing migration of other family members	0.6
Total Money value of goods received as gifts (in Rs.)	1.3
Total	100.0

Macroeconomic Impact of Remittances on Kerala's Economy, 1998-2023

From 1998 to 2023, Kerala's remittances and their steady increase have both contributed to and coincided with the state's substantial economic growth, as indicated by the continued rise in the Net State Domestic Product (NSDP) (Table 5.2). Kerala's per capita income has also grown substantially over the years, reaching ₹2,63,945 in 2023. Government revenue receipts have steadily increased from ₹7,198 crores to ₹1,32,724 crores.

Remittances contributed to approximately a fourth of the state's NSDP until 2008, after which there was a slight decline to 19.2% in 2013 and 13.5% in 2018. In recent years, remittances have returned to being a significant contributor to the state's NSDP at 23.2%. Remittances as a ratio of revenue receipts have consistently hovered above the one-point mark, reflecting a steady relationship between these variables. Overall, the data highlights Kerala's increasing reliance on remittances and significant economic advancements over the past 25 years.

Table 22 Macroeconomic Impact of Remittances on Kerala's Economy, 1998-2023

	1998	2003	2008	2013	2018	2023
Total Remittances to Kerala (in crores)	13652	18465	43288	71142	85092	216893
NSDP (in crores)	53552	83783	140889	371384	632093	933564
Per Capital Income (inRs.)	16062	25764	41814	110314	179523	263945
Revenue Receipt of Government (in Crores)	7198	10634	24936	49,177	83020	132724
Remittances as percent of NSDP	25.5	22	30.7	19.2	13.5	23.2
Remittances as ratio of Revenue Receipt	1.9	1.7	1.7	1.4	1	1.6

Note: Calculated by using the figures from various Kerala Economic Reviews

Impact of Migration on Consumption Pattern of Kerala

Consumption is a distinctive factor which stands out among the several socio economic and demographic characteristics that make the state of Kerala distinct in all aspects compared to other states of India. Keralais considered to be a Consumer state. Statistical evidence has shown that Keralites, who form just three percent of India's population are said to consume fifteen percent of consumer goods manufactured in the country. There is also a significant increase in the level of consumption of both food and non- food items. The people of Kerala are more fascinated towards durable electronic goods like mobile phones, Television, Laptops, High priced premium cars etc. Moreover, Kerala exhibits the features of high mass consumption stage which are similar to a developed country.

Another peculiarity of Keralites' consumption is that they purchase goods not only for their practical use but also as a status symbol and to keep up with the Joneses. Demonstration is the hallmark of Keralites particularly in Urban area. The liberalization policies adopted by India in 1991 provided a large variety of multi branded electronic goods at cheap cost. Along with this the effect of foreign remittances accentuated the demand for consumer durables in Kerala. The migrants disseminated new electronic goods to the people of their home country. This in turn affects the demand for such products among non-migrants to keep up with neighbours or persons with whom they associate. The attitude of the people towards the possession of durable goods and wealth also accentuated the consumption scenario of Kerala. Kerala is reported to be the surest market for goods produced anywhere. Liberal Credit policies of the banks contributed to the increase in demand for durable goods. The facilities like loans, credit cards, exchange offers etc leads to the instant gratification of wants and perpetuated the imprudent consumer behaviour. This type of dynamic consumer behaviour can be seen more among Gulf migrants. The development experience of Kerala is directly linked with gulf migration.

Positives of Kerala's Gulf Migration

1. **Economic Growth through Remittances**

- Kerala receives one of the highest shares of remittances in India, boosting GDP and household incomes.
- Remittances finance education, housing, healthcare, and consumer spending.

2. **Poverty Reduction & Social Mobility**

- Migration helped many families escape poverty and join the middle class.
- Upward mobility visible in lifestyle changes, better nutrition, and higher literacy.

3. **Infrastructure Development**

- Gulf money drives real estate, transport, and service sector growth.
- Schools, hospitals, and banks expanded with remittance inflows.

4. **Cultural Exchange & Global Exposure**

- Gulf migrants bring back new skills, ideas, and global outlooks.
- Strengthened diaspora networks.

Negatives of Kerala's Gulf Migration

1. **Overdependence on Remittances**

- Kerala's economy became highly dependent on Gulf money.
- Fluctuations in oil prices or Gulf policies directly affect Kerala.

2. **Labor Shortages at Home**

- Large-scale male migration created shortages in agriculture, construction, and traditional industries.
- Rise of *inter-state migrant workers* from other Indian states to fill the gap.

3. **Social Costs**

- Family separation leading to emotional strain, "Gulf wives," and children growing up without fathers.
- Elderly individuals left behind when younger family members migrated get affected
- Many of the emigrant houses have remained locked due to the migration of entire families.

4. **Vulnerability of Migrants**

- Many Gulf jobs are low-skilled and insecure, with poor labour protections.
- Harsh working conditions limited legal recourse, and dependence on sponsors (*kafala system*).

5. Unequal Development

- Gulf migration benefits mainly certain communities/districts (e.g., Malappuram, Kozhikode, Thrissur), creating regional imbalance.
- Not everyone has equal access to migration opportunities.

6. Rehabilitation of return migrants

The nature of migration to GCC countries is often temporary due to the strict restrictions on gaining citizenship and asset accumulation. Only 13.4 percent of REM is from non-GCC countries. Among GCC countries, the majority have returned from UAE (36 percent) followed by Saudi Arabia at 30.1 percent. Nationalization policies in Saudi Arabia could explain the high proportion of REM (30.1 percent) while the total share of emigrants in Saudi Arabia is only16.9 percent**.**

Emerging Trends in Migration

- **Dominance of GCC:** Even in 2023, **80.5%** of Kerala's emigrants are still in the Gulf (UAE, Saudi Arabia, Qatar, Kuwait, Oman, Bahrain).
- **Shifting Destinations:** GCC share is slowly falling (from **89.2% in 2018** to 80.5% in 2023), as more Keralites—especially students and women—move to **Western countries** like Canada, UK, Australia, and Germany.
- **Gender:** Female migration rose from **15.8% in 2018 to 19.1% in 2023**; many women work as nurses or students abroad.
- Family migration is increasing nowadays despite of high consumption expenditure
- **Education: 71.5% of female emigrants hold degrees** (vs 34.7% for men), showing higher qualifications among women.
- **Students:** Student migration nearly doubled—from **1.3 lakh in 2018** to **2.5 lakh in 2023**, now making up over **11% of all emigrants**.
- **Religion:** Muslims form the largest share (41.9%), followed by Hindus (35.2%) and Christians (22.3%).
- **Saturation** of low-skilled Gulf migration: Decline in new workers heading to GCC, partly replaced by inter-state migrants filling Kerala's local labour shortages.
- **Rise of skilled/student migration to the West:** Younger, highly educated migrants prefer OECD countries for better wages, stability, and citizenship pathways.
- **Return migration:** Growing share of returnees, accelerated by the pandemic, creating challenges of reintegration and productive investment of savings.

CONCLUSION

Emigration and emigrant's remittances continue to sustain much of the Kerala economy. The remittances had given the biggest push to the poor and industrially backward economy of Kerala

since the mid 170's. It also accelerated a process of tertiary pattern of development. But the migrants are not utilising the remittances properly. Migrants seem more likely to spend their excess income on payment of credits, lavish hospitality, conspicuous consumption, and the building of large, showy houses. We must channelize the remittances for productive purposes and thereby stimulate economic development of our country. Kerala's Gulf migration has been a defining force in reshaping the state's socio-economic landscape. While remittances have boosted household incomes, improved living standards, and supported infrastructure and social development, dependence on migration has also created challenges such as labour shortages, social costs of family separation, and economic vulnerability to fluctuations in Gulf economies. Kerala's Gulf migration is still massive and central to its economy, but **patterns are shifting**—from low-skilled, male-dominated GCC flows toward more **female, student, and Western-bound migration**, while Gulf dependence remains strong. The future of Kerala's development lies in balancing these gains with sustainable policies—by strengthening migration governance, diversifying economic opportunities at home, and engaging the diaspora more effectively. In doing so, Kerala can continue to harness the transformative potential of migration while reducing its inherent risks. However, the process has created challenges, including labour market imbalances, a rising dependency on foreign economies, and social issues such as family separation and intergenerational gaps. This dual impact highlights the complexity of Gulf migration: while it has acted as a key driver of prosperity and modernization, it has also reinforced structural vulnerabilities. Understanding these socio-economic dynamics is essential for framing sustainable policies that both protect migrants and channel their contributions toward Kerala's long-term development.

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A COMPREHENSIVE COVERAGE OF AYUSH IN TAMILNADU AND KERALA

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ABSTRACT

The Service of Ayush has denoted a huge achievement in the year 2023 by reaffirming the execution of its vision and targets on Public and Worldwide levels. The global acceptance of Indian traditional medicine culture has increased this year. Ayush has achieved a new level of international recognition and left a number of successful footprints that will never fade. Ayush's efforts in the areas of healthcare infrastructure development, research collaborations, export promotion mechanisms, educational reforms, global expansion of the Indian traditional medicine system, and more were well supported and guided by Prime Minister Shri Narendra Modi. The AyurTech center will open in May 2023 thanks to funding from the Ministry of Ayush's Centre of Excellence (CoE) program. The Centre of Excellence in AI-based Precision Healthcare at IIT Jodhpur's School of Artificial Intelligence and Data Science (AIDE) includes the CoE AyurTech. An AI-driven integrative framework for population and individual risk stratification and early actionable precision health interventions is the goal of this center. An attempt has been made to investigate the expansion of AYUSH courses for students in Kerala and Tamil Nadu in this article.

KEYWORDS: *Healthcare, Educational Reforms, Collaborations, Traditional.*

INTRODUCTION

As per the World Wellbeing Association, wellbeing is a condition of complete physical, mental, and social prosperity, in addition to the shortfall of illness or sickness. It is a resource that enables people to function in society and is a positive idea that places an emphasis not only on physical abilities but also on personal and social resources. An existence without great wellbeing resembles a military without troopers and chocolate without cocoa. Wellbeing means quite a bit to make every second count. A healthy way of life keeps the body healthy and keeps the mind active and fresh.

Diseases emerge as a result of changes in diet and lifestyle, and the treatment for each type of infection varies. Herbs and shrubs have long been used as useful medicines. The development in clinical area bring about drug organizations and they took endeavors to figure out the speedy alleviation to the illness by utilizing compound situated medication. Consequently, many diseases are treated, but side effects occur. At this crossroads, AYUSH appeared. AYUSH is an abbreviation for the clinical frameworks rehearsed in India, including Ayurveda, Yoga and

Naturopathy, Unani, Siddha, and Homeopathy. The Ayush area is developing quickly, with its worldwide impression extending to more than 150 countries and an extended development to $10 billion in the following ten years.

SIGNIFICANCE OF THE STUDY

The Indian government recognized the significance of boosting the immune system's capacity for disease prevention. Service of AYUSH had sent off a three-month crusade called "AYUSH for Resistance" that meant to increment mindfulness among the majority, in regard to the compelling home consideration arrangements and suggested AYUSH rehearses, to assist them with improving their invulnerability. Several events, including social media contests, online discussions, and virtual seminars, were held throughout the campaign, extending the Ministry of AYUSH's reach to a wider range of Indian and international society.

The "National Clinical Management Protocol based on Ayurveda and Yoga" has been published by the Ministry of AYUSH. It was developed by a national task force with consensus from expert committees from the following national research organizations: the All India Institute of Ayurveda (AIIA), Delhi; the Institute of Post Graduate Training and Research in Ayurved (IPGTRA), Jamnagar; the National Institute of Ayurveda (NIA), Jaipur;

This protocol is based on:

I. Experience gained through clinical practice and reading about Ayurveda

II. Experimental confirmations and Natural believability

III. Recent developments in clinical research

SCOPE OF THE STUDY

The current review centers around making sense of the nature and qualities of Ayurveda, Natropathy, Unani, Siddha and Hemopathy medication framework. Additionally, it focuses on the number of students enrolled in AYUSH courses in Kerala and Tamil Nadu. According to AYUSH records, Kerala is the first state to take AYUSH courses, followed by Tamilnadu.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To know about the nature of AYUSH medicinal system values
2. To analyse the number of students studying AYUSH programmes in Tamilnadu and Kerala

RESEARCH METHODOLOGY

The present study is descriptive in nature. The study is based on secondary data. The secondary data has been gathered from annual records of AYUSH and Government academic records of Tamilnadu and Kerala. The secondary data has been analysed by using Kruskal Wallis test and descriptive statistics tools such as mean, standard deviation, co-efficient of variation, linear regression slope and Compound growth rate. Kruskal Wallis test has been used to compare the two elements. The formula used is as follows:

$$12/n\ (n+1)\ (\sum Ri2/nj) - 3\ (n+1)$$

N – Number of ranks

Ri – Rank of the ith element

nj – number of elements in jth group

AYURVEDA

One of the oldest and most comprehensive approaches to health care is Ayurveda, or the science of life. The quest for longevity and health is probably as old as humanity itself. Health is a prerequisite for pursuing materialistic, social, and spiritual advancement, according to Indian philosophy. Ayurveda is thought to have been first preached by Lord Brahma, the creator of the universe.

In Ayurveda, there were two main schools of thought:

The medical school Punarvasu Atreya and the surgical school Divodasa Dhanvantari Punarvasu Atreya, a medical pioneer, and Divodasa Dhanvantari, a surgeon, are both mentioned.

Each school's disciples made a significant contribution to the formation of its traditions. It is believed that six Atreya students wrote their own compendia based on their Guru's teachings; however, only the Bhela Samhita in its original form and the Agnivesa tantra, which was edited by Caraka and Dridhabala, are currently available.

In 1827, the Government Sanskrit College in Calcutta offered the first Ayurveda course in India. Numerous Ayurveda colleges were established in India by the beginning of the 20th century under the patronage of provincial rulers. Ayurveda acquired ground starting from the 1970, as a continuous acknowledgment of the worth of Ayurveda resuscitated. During the 20th century, a lot of academic work was done, many books were written, and seminars and symposia were held.

In India, Ayurveda education is currently well-regulated at the undergraduate, graduate, and doctoral levels. There is a commendable network of manufacturers and practitioners. Both the private and public sectors have improved their infrastructure development, which is commendable.

NATUROPATHY

Naturopathy is a non-pharmacological treatment for health care and healthy living that uses natural materials at a low cost. It is based on the theories of vitality, increasing the body's capacity for self-healing and healthy living principles. Naturopathy is both a natural treatment method and a way of life that is widely used, recognized, and accepted all over the world for maintaining health and treating illnesses. On the physical, mental, social, and spiritual levels, naturopathy advocates living in harmony with natural principles. It has incredible promotive, preventive, healing as well as supportive possibilities.

In naturopathy, health is equated with a person's capacity to restore the inner balance or vitality of the body—the life force that is present and is responsible for all body functions. It is believed that diminished vitality is the root cause of all human diseases. Regaining this essential ability to fight diseases is the goal of all naturopathic therapeutic modalities. Violations of nature's law, or

"natural hygiene," which includes getting enough sleep, eating well, getting enough exercise, praying, and fasting, have an effect on vitality. As a result, naturopathic treatments are close to nature and make use of natural substances that can boost energy. Therefore, the focus of natural therapies is conserving or optimizing vitality.

Naturopathy mixes exceptionally old information on normal treatments with current advances in the comprehension of wellbeing and human frameworks. As a result, the term "naturopathy" can be used to encompass all natural health treatments. Natural treatments like fasting, mud therapy, hydrotherapy, acupuncture, massage therapy; dietary supplements, nutrition, herbal medicine, physical manipulation, colonic irrigation, magneto therapy, chromo therapy, and ozone therapy are all part of the naturopathic approach to health promotion. As a result, it helps the body get rid of toxins, which are the root cause of disease; by getting rid of things the body doesn't need or want in order to treat diseases.

UNANI

The Unani Arrangement of Medication spearheaded in Greece and was formed by Bedouins into an intricate clinical science in light of the structure of the educating of Buqrat (Hippocrates) and Jalinoos (Galen). Greco-Arab medicine has replaced Unani medicine ever since. The three pillars of Hippocratic medicine—observation, experience, and rational principles—are still relevant today in the medical and scientific fields. The Hippocratic theory of the four humours, namely: blood, phlegm, yellow and black bile, and the four bodily states of heat, cold, moisture, and dryness.

Human health is influenced by the environment and ecological conditions, according to Unani medicine. Unani Medicine places a strong emphasis on disease prevention and health promotion in addition to treating diseases. Unani prescribes a lifestyle, diet, and environment that are appropriate for a person's temperament in a completely healthy person. On the other hand, for people who have become more susceptible to disease, special diets, nondrug manipulations or regimens, and even drugs are prescribed to maintain health and prevent disease.

The cutting-edge type of Unani medication that we see today is a consequence of an extensive stretch of development which happened through trade of information between different nations, locales and networks. The framework is yet expanding its aspects and extension by consolidating the contemporary logical information and the most up to date of innovations. The scientific community and the public are becoming increasingly aware of the intrinsic value of our traditional medical systems. As a result, the Unani system of medicine has entered mainstream medicine to complement conventional medicine.

SIDDHA

In India, Siddha is one of the oldest comprehensive medical systems. "Siddha medicine" is the highly systematized technology that the Siddhars used to reveal the Healing Dimension. The Siddha system is thought to have developed between 10,000 and 4,000 B.C. With a holistic approach, the Siddha system provides health care for prevention, promotion, treatment, rejuvenation, and rehabilitation.

The Siddha demonstrative procedure depends on the clinical assessment by the doctor and these analytic devices are vital on the grounds that they aid finding and anticipation of illnesses. Siddha doctors base their conclusion on three Humors (Mukkuttram) and eight fundamental tests (EnnvagaiThervu). The Siddha system of treatment aims to maintain the seven body Thathus and maintain equilibrium between the three essential life factors. Exceptional treatments/outside treatment strategies like Tension Control Treatment (Varmam), Actual Control Treatment (Thokkanam), Bone setting (OtivuMurivuMaruthuvam), Siddhar Yogam are qualities of Siddha framework.

HOMOEOPATHY

Around 1810 A.D., European missionaries brought homoeopathy to India. In 1948, the Constituent Assembly and then the Parliament gave it official recognition through a Resolution. According to the first principle of homoeopathy, "Similia Similibus Curentur," a medicine that can cause a set of symptoms in healthy people can also treat the same set of symptoms in people who have the disease. According to the second principle of "Single Medicine," a single medication should only be given to one patient at a time during treatment. According to the third principle of "Minimum Dose," a drug should be administered at the absolute minimum dose that will result in a curative effect without any side effects. Homeopathy depends on the hypothesis that the causation of an illness chiefly relies on the defenselessness or inclination of a person to the frequency of the sickness notwithstanding the activity of outside specialists like microorganisms, infections and so on.

Homoeopathy is the practice of using drugs that have been shown through experiments to be able to produce similar symptoms in healthy people to treat diseases. Treatment in Homeopathy, which is comprehensive in nature, centers around a singular's reaction to a particular climate. Most homoeopathic medicines are made from natural ingredients like minerals, plant products, and animal products like nosodes, sarcodes, and so on. There are no toxic, poisonous, or adverse effects associated with homoeopathic treatments. Additionally, homoeopathic treatment is cost-effective and widely accepted by the general public.Number of Students Studying Ayush Programmes in Tamilnadu and Kerala

Table 1 exhibits the number of students studying Ayush Programmes in Tamilnadu and Kerala.

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Table 1 Number of Students Studying Ayush Programmes in Tamilnadu and Kerala

Year	No. of Students Studying AYUSH Programmes	
	Kerala (in lakhs)	Tamilnadu (in lakhs)
2014-2015	3401	956
2015-2016	4217	1014
2016-2017	4105	835
2017-2018	3954	904
2018-2019	4397	978
2019-2020	4593	1028
2020-2021	5067	1143
2021-2022	5460	1290
2022-2023	5205	1458
2023-2024	5167	1944
Mean	4556.6	1155
Standard deviation	625.6402	317.0237
co-efficient of variation	7.2831	3.643261
Regression Slope	Y=200.73X + 3452.6	Y=91.16X+653.6
Compound Growth Rate	31.93	20.584

Source: Secondary Data

The mean and standard deviation of the number of students studying AYUSH courses in Kerala are 4556.6 and 625.6402. Its co-efficient of variation is 7.2831. The regression slope is Y=200.73X + 3452.6 which is positive and significant at 5 per cent level. The compound growth rate is 31.93 which is also positive.

The mean and standard deviation of number of students studying AYUSH courses in Tamilnadu are 1155 and 317.0237. Its co-efficient of variation is 3.643261. The regression slope is Y=91.16X+653.6 which is positive and significant at 5 per cent level. The compound growth rate is 20.584 which is also positive.

Less the co-efficient of variation, more the stability of data series. By comparing the two results, even though the number of students studying in AYUSH programmes are less in number it has more stability.

Kruskal Wallis test has been used to analyse the number of students studying Ayush Programmes in Tamilnadu and Kerala. The null hypothesis framed is that there is no significant different in the number of students studying Ayush Programmes in Tamilnadu and Kerala.

Table 2 Number of Students Studying Ayush Programmes in Tamilnadu and Kerala

	Mean rank	K value	DF	p value
Tamilnadu	188.46	6.897	9	0.000
Kerala	259.05	11.935	9	0.000

Source: Secondary data

The calculated value of Kruskal Wallis test regarding Tamilnadu and Kerala data is 6.897 and 11.935 respectively. As the calculated value of Kruskal Wallis test is significant (p value less

than 0.05), the null hypothesis is rejected. There is a significant different in the number of students studying Ayush Programmes in Tamilnadu and Kerala. The mean rank is higher in Kerala when compared to Tamilnadu.

RECOMMENDATIONS

The Government has to stress the importance of AYUSH programme in the school education. It has to organise more number of certificate, diploma and advanced diploma courses related to AYUSH. It has to increase employment opportunities in the field of AYUSH. By doing this, awareness about AYUSH developed in the minds of the public.

CONCLUSION

AYUSH is among the top five exporters of health services from India. He AYUSH drugs classification is developing quick, and incorporates conventional and restrictive items and dietary enhancements. Hospitals, clinics, and wellness retreats all provide AYUSH services, which cover curative, preventative, and uplifting aspects of health. Over the next ten years, Ayush's course promises to have a significant impact on the Indian economy and have a transformative effect on global healthcare.

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Special Issue

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STUDENTS' INTEREST IN LEARNING THROUGH THE ICT METHOD OF TEACHING AT THE COLLEGIATE LEVEL

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ABSTRACT

"ICT stand for information and communication technologies and is defined, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information". This paper is based on an empirical research conducted to explorethe Students' interest in learning through the ICT method of teaching atthe collegiate level. For this study Convenience sampling method was adopted. The primary data was collected from the under graduate students studying in an arts and science college in Thrissur District, Kerala, during the academic year 2025-26*with the help of a pre-tested questionnaire administrated via Google form through online mode. The study reveals that students are highly interested in ICT related teaching-learning method for their collegiate level education and students perceived that all benefits enjoyed by them are equal.*

KEYWORDS: *Information and Communication Technologies, ICT Method Of Teaching.*

INTRODUCTION

Over the past two decades, Information Technology (IT) has broadened to become Information and Communication Technology (ICT), and has become better established within schools and colleges (Abbott, 2001). Information technology has heightened the importance of computer technology and made it possible to work, more efficiently and more speedily. It is because of computer and information technology the teaching-learning methods became more efficient and effective. Information and communication technology become the need of the hour, enabling the learner to learn anytime, anywhere. (Kaware & Sain, 2015).ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment.

The concept of learning through ICT method of teaching

Information and Communication Technology (ICT) in education is the mode of education that uses information and communications technology to support, enhance, and optimize the delivery of information.

Problem discussion and research questions

Several studies have found that the use of new technologies in education is indispensable in today's information age. The incorporation of information and communication technology (ICT) in teaching and learning offers immense opportunities for teachers and students to work better (Salehi & Salehi, 2012). ICT helps teachers to interact with students. It helps them in preparing for their teaching and providing feedback. ICT also helps teachers to get access with institutions and Universities. It also helps in effective use of ICT software and hardware for teaching – learning process. Worldwide research has shown that ICT can lead to an improved student learning and better teaching methods.

In this context, the researcher wants to explore the students' interest towards learning through ICT method of teaching in collegiate level. This research problem addressed to answer the following research questions

1. What is the students' interest towards learning through ICT method of teaching in collegiate level?
2. What is the extent of students' interest towards learning through ICT method of teaching in collegiate level?

Objectives of the study

1. To investigate the students' interest towards learning through ICT method of teaching in collegiate level
2. To measure the extent of students' interest towards learning through ICT method of teaching in collegiate level

Significance of the Study

ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio etc. This study aimed to find out the extent of students' interest towards learning through ICT method of teaching in collegiate level. It brings a new knowledge related with students' interest towards learning through ICT method of teaching in collegiate level and it can be applied for the improvement of the ICT based teaching-learning methods

Scope of the Study

The study was conducted among the under graduate students studying at an arts and science college in Thrissur District, Kerala, during the academic year 2025-26, Mainly five variables are covered in this study for measuring the students' interest towards learning through ICT method of teaching that I like teachers to use ICT in the subjects, ICT help me to resolve my doubts, ICT enable the teacher to pay more attention to us and ICT help to generate a pleasant atmosphere in the classroom.

METHODOLOGY

Secondary Data

The secondary data is collected from review of existing literatures and published sources such as journals, articles, websites etc.

Primary Data

The primary data for this study was collected from the under graduate students studying at an arts and science college in Thrissur District, Kerala, during the academic year 2025-26, with the help of a pre-tested questionnaire administrated via Google form through online mode.

Research design and Sampling method

The study carried out with descriptive type of research. The survey conducted among the under graduate students studying at an arts and science college in Thrissur District, Kerala, during the academic year 2025-26,Likert scale was adopted to measure the questions. The questionnaire has been designed on 5-point scale (Strongly Agree to Strongly Disagree). Convenience sampling method was adopted for sampling procedures. 60 respondents are participated in this survey. Therefore, sample size was 60 for this study.

Tool used for data analysis

1. To investigate the students' interest towards learning through ICT method of teaching in collegiate level, percentage analyses are used
2. To find out the extent of students' interest towards learning through ICT method of teaching in collegiate level, quartile deviation, percentage analysis and chi-square test are employed.

Limitation of the study

Data collected for this study was through online mode of survey using Google forms. Sampling method adopted for this study is convenience sampling method. These two things make certain inherited limitations in this study.

ANALYSIS OF THE DATA

Table 1: Students' interest towards learning through ICT method of teaching in collegiate level- percentage analyses

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Teachers use of ICT	0%	0%	20%	66.7%	13.3%	100%
Helps in solving doubts	0%	3.3%	10%	80%	6.7%	100%
Teachers pay more attention	0%	6.7%	16.7%	63.3%	13.3%	100%
Helps to follow course	0%	6.7%	16.7%	60%	16.7%	100%
Gives pleasant atmosphere	0%	13.3	23.3	43.3%	20%	100%

From the above table, it clear that all variables are comes under the 'Agree' level in the scales. So, it can be concluded that collegiate level students are interested towards learning through ICT method of teaching for their study.

Table 2: Extent of Students' interest towards various parameters of learning through ICT method of teaching

parameters of learning through ICT method of teaching	Mean rank	Proportion of interviews in which so cited
Teachers use of ICT	3.07	
Helps in solving doubts	3.05	
Teachers pay more attention	2.87	2.51*
Helps to follow course	3.12	(0.642)**
Gives pleasant atmosphere	2.90	

*** indicates Chi-square value, * shows P Value*

The above table indicates that mean ranks of different parameters of learning through ICT method of teaching are different in its values. But chi-square test shows that it is not statistically significant. Therefore, it can be concluded that students have same interest in all benefits gained from learning through ICT method of teaching in their college level education.

FINDINGS, SUGGESTIONS AND CONCLUSIONS

Findings

1. Students are highly interested in ICT related teaching-learning method for their collegiate level education
2. Students perceived that all benefits of ICT teaching-learning enjoyed by them are equal.

CONCLUSION

This paper discussed the Students' interest towards learning through ICT method of teaching in collegiate level. Convenience sampling method was adopted. Data were collected from the under graduate students with the help of a pre-tested questionnaire administrated via Google form through online mode. The study reveals that Students are highly interested in ICT related teaching-learning method for their collegiate level education and students perceived that all benefits enjoyed by them are equal.

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ANALYSIS OF OUTSTANDING GUARANTEES OF THE THREE SELECTED STATES- KERALA, KARNATAKA AND ORISSA

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1.1 INTRODUCTION

The fiscal scenario of the any country is determined by the fiscal expenditure and revenue position. In most of the cases public expenditure is far greater than the revenue. To tackle the increased expenditure states resort to debt. Debt as such is not good as it displaces capital. A debt which is too high is unsafe for the economy like in some countries like Latin America and so and the economy become prone to risk. At this juncture the concept of risk sharing could advisable to certain countries where government could issue bonds to other countries and so could share their risk. Issuing guarantees is also one such way to tide of difficult situations. These are called off budget borrowings to remain within the rules of Fiscal responsibility rules.

In recent years the contingent liabilities have gained much importance in the finance of a country. This is mainly because it could harm the sustainability of the finance. In several cases the lack of disclosure and the preparation for these risks has caused large increase in debt and led to fiscal crises (Cebotari 2008, IMF 2012[1]). These contingent liabilities realisation along with the volatility of the exchange rate have led to unexpected rise in Debt-GDP figures over the last 15 year (IMF 2003, Cebotari et. al. 2009[2]). These being contingent often incurs as surprise on the exchequer. This liabilities being implicit are taken up at times of distress and are called “hidden deficits" and increases debt Kharas and Mishra (2001). This contingent liability is attractive to politicians who resort to these in short term when the budget is limited. There are also good source to surpass scrutiny for them (as they are not recorded in budget) apart from direct budget support like grants, subsidies direct lending. Under cash budgeting there are no costs and no scrutiny involved for the guarantees. These also have moral hazard which has to be solved differently else would cause huge expense to government (Kunt and Detragiache, 1998). It could be seen clearly after the 2007 financial crises. Such moral hazard could undermine the effect of intervention in reducing financial stability(Allen et al,2015) .The Asian and Latin American crisis show that these fiscal cost amounted to 50 percent of Gross domestic Product (GDP) (Honohan and Klingebiel,2000[3]). Even contingent liability due to natural disasters has a fiscal cost of almost 10 percent (Freeman and others 2003). The global financial crisis has seen that the

contingent liability have a huge effect on fiscal cost by the financial sector (Amglobelli et al., 2015 and IMF 2015)

According to the study of Fiscal Affairs Department (FAD), 2016 the global average of cost of the realised contingent liabilities between the year 1994 and 2014 was 6 percent of GDP with the maximum 57 percent of GDP (IMF 2016b[4])

The adoption of planning and with emphasis of decentralised fiscal activities and the quasi federal structure has led to increase in the local social economic needs. Over the years with the increasing functions of the Government the revenue is never adequate. The major cause is due to the higher expenditure obligation on the government. This is seen not only in the developing but also in the developed economies.

The Indian public expenditure also witnesses the same due to the huge lot of welfare obligations for its 136.64 crore of population (World Bank, 2022). The expenditure is very much relied on the government and thus leading to the crowding out of the private especially in case of utilities. The Central and State government have a lot of commitments and duties to perform and these are not limited to the revenue received and the allocated budget funds i.e the non debt finance.

In developing countries like India, the private sector savings are quite less so fiscal policy has key role to mobilise resources by increasing the revenue. The impact of government spending on human development depends on how efficiently these are spent and how it is targeted at the poor and if it leads to cumulated growth of various sectors indirectly. So these should be intended on areas where there is highest social return and should be supplemented with private sector. The investments of public sector are mostly in areas where private investments are shying ,where there is a market failure and its mainly of long term nature. Debt is unavoidable, as was put forth in the Maastricht treaty 1991; It is better that debt should be kept within limits rather than removing at any cost. The government policies and incentives determine the design and the implementation of economic policies. A check on these policies can be done by delegating works to independent agencies for the government failures. There are experiences where countries have independent fiscal authorities (IFAs) which would imitate the fiscal side independent to central banks and fiscal councils (FCs). Such agencies would help in reducing the deficit imperfections and improve the policies. There are measures to implement such agencies with different mandates for long term fiscal objectives and annual targets for a balanced budget. This would bring about impartiality in the fiscal rule (Debru et al 2007[5]). The various competent authorities like the Comptroller and Auditor General of India (CAG), Finance Commission (FC), Reserve Bank of India(RBI) have taken steps and reports on the unsound financial practices of governments (Rajaraman et al. 2005)[6] in the case of India.

Indian Context

Guarantees gained prominence after 1997. There was an increase in the amount of guarantees. This created an awareness on the potential impact of the Guarantees on the state budget. A committee called the Technical Committee on November 8, 1997 set up to look into the state guarantees. It stressed on the states and centre to have their own targets. Some states had already taken steps regarding this. It was in 1999 that the report was submitted which highlighted issues on the need for transparency, ceiling, charging of guarantee fee, monitoring and honouring of guarantees. The State Finance secretaries recognized a ceiling on guarantees. States like Karnataka and Rajasthan (1999), Assam (2000), West Bengal (2001) introduced ceiling on the guarantees (Table 4.1)

In 1998, the banks were advised by the RBI to consider a credit risk of 20 percent to those guarantees which were outside the market borrowings of the state Governments. If the bond of certain entities was at default and the loan was invoked such guarantees would have credit risk of 100 percent. After 2000 those guarantees which were invoked and had remained in default for more than two quarters were to be considered as doubtful assets. There was advance provisioning done for the state guarantee which was invoked as on 31st March 2000. This was to be done in a phased manner of 25 percent every year from 2000-01 to 2002-2003. RBI advised the financing of infrastructure and special purpose vehicles with the guarantees. The banks and financial intermediaries were free to sanction the amounts to the private and public undertakings after looking into the financial technical viability and income generating capacity of the projects.

The report on Fiscal risk assessment of Government (RBI, 2002) guarantees puts for that states should report the guarantees issued and also be to classify them a high, medium and low risk. It brought forth that the risks associated is different and so the probability of their impact on fiscal structure is different. In the Eighth Conference of the Finance Secretaries of State Governments with RBI on May 26, 2001, it was decided that each state should have a ceiling on the guarantees on the risk of guarantee. The provisioning of guarantees was different in each state. This group highlighted that the guarantees grew at an average of about 16 percent in 1992-2001. It was the power sector which had a composition of 44.6 percent of outstanding liabilities.

1.2 State wise guarantees

To meet the needs of infrastructure and to make funds available for capital expenditure the states guarantees for the loans to public sector entities. The implementation of UDAY

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Table 1.2: Guarantees issued by State Governments

Year (End March)	Guarantees outstanding	
	Rs.lakh crore	Percent of GDP
2014	3.79	3.4
2015	4.28	3.4
2016	3.64	2.6
2017	3.12	2.0
2018	4.30	2.5
2019	5.38	2.8
2020	5.94	2..9

Source :RBI State Finances: A Study of Budgets of 2020-21

Schemes[7] helped the states to lower their outstanding guarantees to 2 percent of GDP IN 2016-17 as in the table above. The guarantees have increased in the recent years to 2.9 percent of GDP in 2020 (Table 1.2).In the initial period, Madhya Pradesh registered the highest percentage increase of guarantees. Though this is not the trend when we look at the latest figures after the FRBM regulations were implemented in 2002-03. This State does not feature as the topmost states. The State with highest guarantees was Uttar Pradesh, followed by Andhra Pradesh Rajasthan, Tamil Nadu, Kerala, Karnataka and others.

4.3 Guarantee Redemption Fund (GRF)

RBI (2001) as per the recommendations of the 12th Finance commission puts forth that the state should keep a fund for redemption of guarantees and other obligations with regard to it. This is operated outside the state budget and is administered by RBI. The state governments are required to keep a minimum annual contribution of 0.5 percent of the outstanding guarantee at the of the year. The proceeds of the fund are invested in securities and it does not form a part of cash balance. Orissa was the first to set up Guarantee Reserve fund as early as 1969. In 2002-03 the guarantee Redemption fund had an amount of rupees 20 crores.

Table 1.3 State Wise Guarantees Issued (Outstanding as at end March) (Rs. Crore)

State/UT	2008	2020	Increase
1. Andhra Pradesh	14668.7	77782.8	63114.1
2. Arunachal Pradesh	1.0	1.1	0.1
3. Assam	951.3	83.4	-867.9
4. Bihar	556.2	5379.6	4823.4
5. Chhattisgarh	480.6	18459.4	17978.8
6. Goa	–	–	-
7. Gujarat	11317.6	4494.0	-6823.6
8. Haryana	4401.8	20737.6	16335.8
9. Himachal Pradesh	2632.1	1880.0	-752.1
10. Jharkhand	–	–	-
11. Karnataka	10786.4	26830.0	16043.6
12. Kerala	8317.3	27757.0	19439.7
13. Madhya Pradesh	855.7		-855.7
14. Maharashtra	58275.6	41179.1	-17096.5

15. Manipur	211.0	411.6	200.6
16. Meghalaya	750.6	1120.1	369.5
17. Mizoram	152.6	0.8	-151.8
18. Nagaland	–	250.6	-
19. Orissa	2168.4	3532.5	1364.1
20. Punjab	11014.4	22251.5	11237.1
21. Rajasthan	19769.7	80631.3	60861.6
22. Sikkim	75.0	3749.3	3674.3
23. Tamil Nadu	5409.9	47318.9	41909.0
24. Telangana	–	89600.8	-
25. Tripura	35.6	734.6	699.0
26. Uttar Pradesh	13360.0	113818.2	100458.2
27. Uttarakhand	1676.6	582.4	-1094.2
28. West Bengal	13680.0	–	-
29. Jammu and Kashmir	2806.6	5351.0	2544.4
30. NCT Delhi	–	–	-
31. Puducherry	–	44.3	-
All States and UTs	184355.0	593981.7	409626.7
Per cent of GDP	3.8	2.9	-0.9

Source: State Finances: Study of Budgets, RBI 2020

Gujarat had a provisioning of Rs 25 crore in Risk Guarantee Fund. These funds are amounts apart from the commission received. Andra Pradesh had rupees 12.1 crore in this fund in 2001. Even the states of Karnataka and Rajasthan have set up the same. With regard to the Kerala Ceiling on Guarantees Act 2003 the guarantee commissions are to be transferred to the public account annually and these will form the part of Guarantee Redemption Fund (GRF) and under public account of state.

1.3.1 Guarantee Fee

The fees varied from state to state. The figures internationally show that the fees have no relation to the risks associated with guarantee. The guarantee leads to obligation on the future generation and it leads to greater risk on the future tax payers. There is a need to structure the guarantees and this would help in increase even the private incentives. Klein (1997) has put forth the establishment of an agency to increase the barriers. It would ensure less risky guarantees and reduce the need to need for state and municipalities to issue the guarantees. Thus tax payers could have a transparent atmosphere. In usual structure there is no relation between risk and the fees charged for the guarantees. The Government of India in 1992 considered the fee structure for guarantees. Market borrowing rate for borrowings was 0.25 percent per annum of the guaranteed amount, while for the government guarantees of the public sector had a fee of 1 percent. While for the other guarantees it was fixed at2 percent.

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Table 1.4: Structure of Guarantee Fee/Commission in Some Indian States: March 2001 (per cent of guaranteed amount)

	States	Structure of Guarantee Fee
1	Andhra Pradesh	0.5% to 2%
2	Karnataka	A floor fee of 1 per cent
3	Rajasthan	0.1 to 1 per cent
4	Orissa	0.02% - 0.5% for Cooperative institutions, housing, local bodies and state PSEs1% for other guarantees and bonds; NABARD and other agriculture related guarantees are exempted
5	Gujarat	1%, some state PSEs are exempt while 0.25% is charged for open market borrowing that forms part of the state annual plan.
6	West Bengal	A floor of 1 % is kept, but rises with greater default perception of the project
7	Kerala	0.75 per cent
8	Mizoram	No Guarantee fee is charged
9	Punjab	2 per cent for term loans, 1/8% for procurement agencies

Source: Report of the Group to Assess the Fiscal Risk of State Government Guarantees, RBI July,2002

In India it is seen the rate varies from 0.1 to 2 percent. Kerala has standard rate of 0.75 for all types of guarantees. While for Orissa has a varied structure with three rates of 0.2 to 0.5 percent for cooperatives institutions, housing, local bodies and state PSE's. One percent for other guarantees and bonds while the guarantees for NABARD and agriculture was exempted. Karnataka has a rate of 1 percent finance for the viable projects.

1.4 Sector wise Guarantees-All India

The sector wise guarantee distribution show that power sector had 44.6 percent as outstanding guarantees as on 31st March, 2001. Banks comprised of 15 percent and all India Financial Institutions with 5 percent, Guarantee statement of 9 and 20 in the CAG report deals with guarantees.

As per the Kerala Government Guarantees Act (2003) amended by the Kerala Finance No. 2 Act, 2018, the total outstanding liabilities has to be 5 percent of the Gross State Domestic Product (GSDP) for the particular financial year. It stipulated that if a minimum of 0.75 percent of the government guarantee is outstanding of any entity, it would have to give guarantee commissions.

This would never be waived. In 2018 the total outstanding Government Guarantees was less than 5 percent of the state GDP i.e. Rs.26834.65 crore and GSDP was Rs.7,74995 crore. The state received a guarantee commission of Rs.124.30 crore rupees in 2018-19. The commission received from various entities till 31st March 2019 was Rs.228.38 crore.

Table 1.5: Sectoral Distribution of Guaranteed lending by Banks and All -India Financial Institutions as on March 31, 2001

Sector	Share of Outstanding Guarantees	Share of Defaults	Default Ratio (Default / Outstanding Guarantees Sector Wise)
Power	34.18	52.80	15.09
Industry	7.33	26.42	39.19
Housing	2.28	0.18	0.88
Agriculture and Cooperative	41.69	11.08	2.89
Others *	10.56	9.50	9.79
Total	100	100	3.65

*includes Infrastructure and Welfare Services (Road, Water, Urban Development)

Source: State Finances: Study of Budgets, RBI 2020

The Financial Restructuring Plan (FRP) announced by the Ministry of Power in September 2012 had important implications for the growing Guarantees of the states. The FRP was a bailout package for the huge debts mounted by the state electricity distribution companies (DISCOMs). The combined debt of the eight largest debt ridden states (Tamil Nadu, Uttar Pradesh, Rajasthan, Haryana, Jharkhand, Bihar, Andhra Pradesh and Telangana) was approximately Rs 200,000 crore. Combined debt of the state electricity boards during that period was approximately Rs 2.5 Trillion. FRP required the state governments to absorb 50 precent of the loans of DISCOMs and convert them to equities backed by state government guarantees (Bhaskar, 2014). In November 2015 Ujwal DISCOM Assurance Yojana (UDAY) was announced by the Central Government. Under the new scheme the states were required to absorb 75 percent of the DISCOM debts in 2015, 50 percent in 2015-16 and 25 percent in 2016-17. By the time UDAY was announced the debt of the distribution companies had risen to approximately Rs 4 lakh crore. Under the UDAY scheme 15 states governments took over their DISCOM debts. State governments guarantee loans taken by their Public Sector Undertakings. Most of the liabilities of the DISCOMs are hence contingent liabilities of the state governments. A takeover of these liabilities of the DISCOMs to the state government will increase their overall outstanding debt. (Salient Features, Ministry of Power). These debts are guaranteed by the respective state governments and therefore will add to contingent liabilities of the states (RBI, 1999) Guarantees are contingent liabilities (Ministry of Finance, 2010).

1.5 Comparison of Guarantees of the Selected States of Kerala, Karnataka and Orissa

A comparison of outstanding guarantees for the three states of Karnataka, Kerala and Orissa is seen in table 1.7. Kerala and Karnataka are states in the south of India while Orissa is located in the east. Kerala lies in the category of states with highest amount of guarantees issued, while Karnataka lies in the medium and in the lowest category is that state of Orissa. The table shows the absolute figures of Outstanding Guarantees and simple descriptive statistics is used to understand the key years where significant figures can be observed. We notice from the above table that outstanding guarantees show varied trends across the three selected states.

In absolute terms these amounts in (Rs Crore) seems to be relatively high for Karnataka and Kerala when compared to the eastern state of Orissa. To make specific comparison we have calculated the mean, standard deviation and coefficient of variation for the three states as shown in Table 1.7.It shows the comparison of outstanding guarantees across the three states using simple descriptive statistics. The table shows that Karnataka has a higher mean compared to the three states. The lowest mean value is for Orissa.

Table 1.6 Outstanding Guarantees of Kerala, Karnataka and Orissa for the period 2002-03 to 2018-19

State/UT	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Kerala	12,620.0	14,010.0	12,320.0	11,940.0	9,405.3	8,317.3	7,603.3	7,495.0	7,425.8	8,277.4	9,099.5	9,763.4	11,126.9	12,438.5	16,245.6	17356.5	26834.7
Karnataka	13,310.0	14,180.0	17,450.0	8,880.0	9,879.5	10,786.4	8,693.0	7,203.1	6,617.7	6,639.5	6,687.8	7,782.7	11,032.8	13,324.4	15,392.4	18415.6	24091.4
Orissa	5,500.0	5,180.0	3,820.0	3,500.0	2,647.6	2,168.4	1,386.4	1,026.9	2,066.2	2,510.4	2,251.2	1,705.3	1,671.8	1,290.3	2,256.1	1710.5	4169.1

Source: State Finances: Study of Budgets, RBI 2020

Comparing across Kerala and Karnataka, there seems to be no substantial difference in the average value of Contingent Guarantees. The difference between the mean value seems to be not very significant. It might be due to specific outliers which we will examine below. However, what is of significance is that Karnataka has a higher standard deviation and coefficient of variation of 3911 and .4 values when compared to Kerala. This shows the variability in the dependence on guarantees. This points towards the fact that Kerala on an average has maintained a greater stability in terms of borrowing through guarantees. The state had 3089.7 standard deviation and coefficient of 0.3 showing that there is more dependence on Guarantees every year when compared to the other two states. This in further indicative that contingent guarantees might be forming a fixed proportionate part of the borrowing or debt system in Kerala. While the state of Orissa has the lowest absolute value for mean, it also shows a high coefficient of variation which indicates the relative unstable nature of the state to finance itself using the tool of Guarantees.

Table 1.7 Outstanding Guarantees Compared Across the Three States

States	Average	Standard deviation	Coefficient of variation
Kerala	10,965.3	3,089.7	0.3
Karnataka	11,017.2	3,911.0	0.4
Orissa	4,069.1	1,320.4	0.5

Source: Calculations made using figures in Table 4.6

We can specifically look at the data for outliers and understand why there has been a difference in the average across the three states. Specific years in which outstanding guarantees have differed across the states might be indicative of either specific issues which have affected the states in those years or external shocks which have affected the overall performance of the economy. To understand such trends we have also take the figures for all states across the time period to be compared with these selected states. Since we are comparing the selected states for approximately 15 years, we have divided the period into two phases, the first phase covering the period from 2002-03 to 2007-08 showing a change and a break in the usual trend so we have arbitrarily divided it into two halves, which is to be further analysed in detail.

Figure 1.1 and Figure 1.2 shows the breakup of the guarantees across the three states for the two periods mentioned above. It is noticeable that the guarantee has not only been lowest for the state of Orissa but it has also been decreasing throughout the period from 2002-03 to 2007-08. However, for the states of Kerala and Karnataka there are specific trends in the movement of these figures. For the state of Kerala the only period of increase has been from 2002-03 to 2003-04, after which guarantees seems to be on a declining trend until 2007-08. However, Karnataka exhibits a specific pattern where Guarantees of the state government increase from 2002-03 to 2004-05 and peaked during the year 2004-05. Outstanding Guarantees for Karnataka seems to be the highest during the period 2004-05. During the period 2005-06, we see a substantial reduction in Guarantees across all the three states. But it is noticeable that while the states of Kerala and Orissa showed a trend decline over the next two years, Karnataka shows an increase from the period 2005-06 to 2007-08. Hence from observing the data we find that in the first phase the period 2004-05 seems to be crucial in that the state governments of Kerala and Karnataka shows significant change in attitude towards dealing with their outstanding guarantees.

Figure 1.2 shows the movement outstanding guarantees for all the selected stated for the period 2008-09 to 2016-17. Orissa does not exhibit a specific trend but moves in the form of a wave

Source: State Finances : Study of Budgets ,RBI 2020

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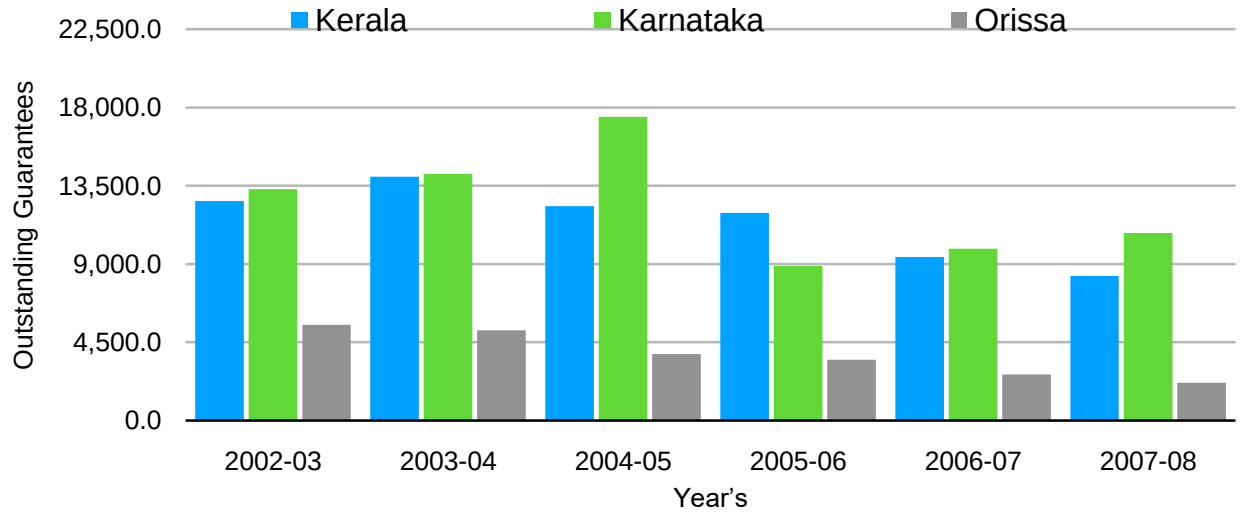
Figure 1.1: Comparison Across Selected States from 2002-03 to 2007-08



with spouts of increase and decrease over the period. 2009-10 exhibits one of the lowest figures for Orissa during the period and 2011-12 shows one of the highest figures for the state. However comparing it with the states of Karnataka and Kerala, the figures of Orissa seems to be insignificant. For the period 2008-09 to 2016-17, we note specific trends in Karnataka and Kerala. Ever since 2007-08, Kerala seems to have an increasing Outstanding Guarantees. The figures seem to be on a rising trend. It is also seen that since the year 2009-10 until 2014-15 Outstanding Guarantees of the state of Kerala has been higher than that of Karnataka. It is only during the year 2015-16 that Karnataka has shown a higher figure compared to Kerala during this phase. Orissa during the period and 2011-12 shows one of the highest figures for the state. However comparing it with the states of Karnataka and Kerala, the figures of Orissa seems to be insignificant. For the period 2008-09 to 2016-17, we note specific trends in Karnataka and Kerala. Ever since 2007-08, Kerala seems to have an increasing Outstanding Guarantees. The figures seems to be on a rising trend. It is also seen that since the year 2009-10 until 2014-15 Outstanding Guarantees of the state of Kerala has been higher than that of Karnataka. It is only during the year 2015-16 that Karnataka has shown a higher figure compared to Kerala during this phase. However, Kerala's Outstanding Guarantees were significantly higher and much above the two other selected states during the year 2016-17.

We notice from the above analysis that outstanding guarantees for the state of Kerala has resurfaced as a significant part of the policy makers strategy since 2007-08. In the first phase while the figures were necessarily much higher there was a declining trend over time. However, this declining trend seems to have halted in the second phase where policy options seems to have shifted towards taking higher guarantees. It is also seen that it is only twice that the state of Kerala has breeched the 13,500 crore mark during the entire period: the first in 2003-04 and the second in 2016-17. These years require further examination to understand the significantly high guarantees reported to by the state. This figure of 13,500 crore seems to be a kind of benchmark set by these states. Karnataka has crossed this figure on three occasions: 2003-04, 2004-05 and

2016-17. Two of these years coincide with Kerala. These give us substantial evidence to reexamine these years for their importance. However, it is necessary to understand the southern region as well as the trend across the nation to see if these figures years are significant.

1.6 The Case of Orissa Compared to Kerala and Karnataka

The total outstanding guarantees for the state Orissa is very low when compared with the southern states. Orissa is also an aberration when compared with the general all India pattern. Orissa witnessed a decline in Outstanding Guarantees during the period 2002 to 2009-10 to the tune of approximately 81 percent. The years 2010-11 and 2011-12 witnessed an increase in the amount of Outstanding Guarantees. There was a further decline over the years till 2015-16. However, compared to the earlier trend this decline was only 23 percent. The next two years witnessed a decline followed by an increase. So we see that like the other states of Karnataka and Kerala, Orissa also witnessed an increase in outstanding guarantees in the year 2016-17. But the amount declined in the next year 2017-18 while the other two states registered an increase. The state shows a different pattern with only 3 years of increase in outstanding guarantees during the period 2010-11, 2011-12 and 2016-17. This could be due to state specific reasons or national aspects which needs further examination. Figure below which compares the amount of Outstanding Guarantees of the three states during the period 2002-03 to 2017-18. The figure brings out that state Orissa has the lowest amount of outstanding guarantees in comparison to Kerala and Karnataka. Over the period from 2002-03 to 2017-18 it has the lowest outstanding guarantees of rupees 1026.9 crores in 2009-10 while lowest figure Karnataka and Kerala was 6617.7 and 7425.8 respectively. The the maximum value was of rupees 5500 crores in 2002-03.This is even lower than the minimum value of the other two states. The pattern of growth of the outstanding guarantee of Orissa with respect to the overall outstanding guarantees of India highlights that the state of Orissa stands out from the rest of India. The amount of outstanding guarantees has been declining. This could be indicative that the state has adhered to the fiscal responsibility legislation and does not depend on the guarantees to source the revenue. This state has one of the lowest figures for total outstanding liabilities of Rs 40691.1 crores for the period 2002-03 to 2017-18 when compared to all India. The other states at the all India level which have lower outstanding guarantees are Chhattisgarh, Bihar, Uttarakhand, Meghalaya, Assam, Manipur, Sikkim, Tripura, Mizoram, Jharkhand, Goa ,Nagaland, Arunachal Pradesh, and

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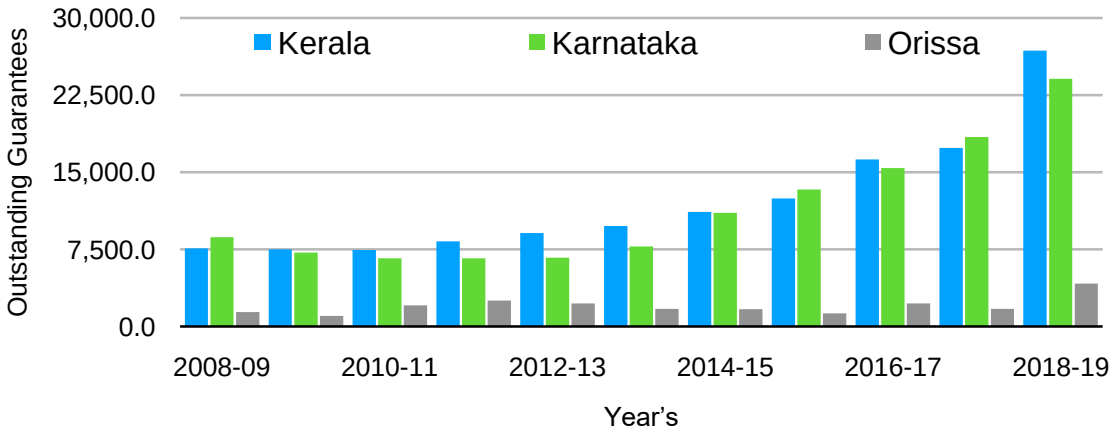
Figure 1.2: Comparison Across Selected States from 2008-09 to 2018-19



Puducherry. This shows the need to see the ways in which the states manages its revenue without much dependence on outstanding guarantees. When we compare the state Karnantaka and Kerala with Orissa we see that the both state has erratic increase decrease in outstanding liabilities. These states have similar maximum amount of outstanding liabilities in the year 2017-18 while Tamil Nadu has maximum amount in the year 2014-15.

Figure 1.3 shows Outstanding Guarantees of India. It can be compared with the selected states of Kerala, Karnataka and Orissa to see how the states perform compared to the whole of India. Outstanding Guarantees for all states and union territories of India is shown in the figure 4.3. The numbers can be compared with Kerala and Karnataka. The all India pattern of growth of contingent guarantees shows a similarity with that of Kerala. It is apparent that Kerala's

Source: State Finances: Study of Budgets, RBI 2020 growth of Guarantees is in accordance with the growth of guarantees of other states. This might be indicative of the fact that Kerala adheres to the fiscal policy initiatives consistent with the rest of India. For instance we observe that the initial period from 2002-03 we see that for India as well as for Kerala there is a similar rise in Guarantees until 2003-04. From then on until 2008-09 we see a decline in guarantees for both Kerala as well as India. Sine 2008-09, we see that

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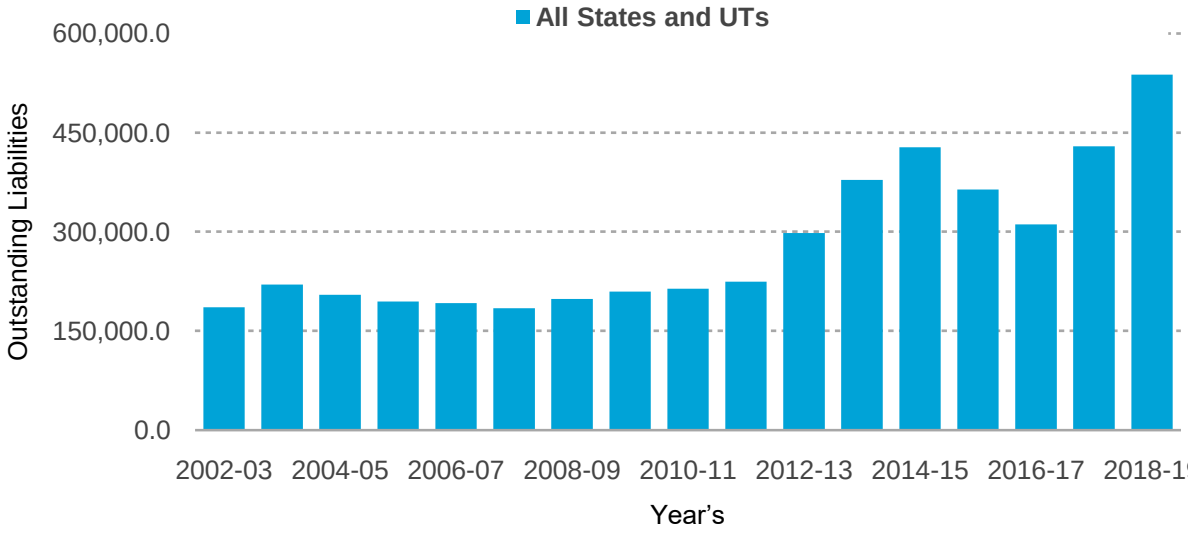
Figure 1.3: Outstanding Guarantees of India



Guarantees have been on the rise for both Kerala and India. While Kerala shows a continuously increasing trend since then and until 2017-18, the all India figures show that Guarantees increased until 2014-15 and then decreased for the two years. Thereafter for the year 2017-18, there has been a sharp spike in the all India figure. In the case of Karnataka we see that the trend is not similar. We see that compared to India during the first phase, Karnataka showed and increase and then a sharp decrease during 2004-05 followed by a steady rise in contingent guarantees. From 2008-09 to 2012-13 there has been a decrease in Guarantees for Karnataka followed by a rise sine then. The value seems to peak during the period 2017-18.

Do defaults occur?

Comptroller and Auditor General (CAG) report 2018 for Kerala shows the following. Guarantees issued by the government of Kerala during the financial years 2015-16, 2016-17 and 2017-18 were approximately 4989.66 crores (for 9 PSUs), 6150.72 crores (for 8 PSUs) and 7341.17 crores (for 11 PSUs) respectively. As of March 2018, the guarantees as per the finance account of the government of Kerala was approximately Rs 10,367.57 crore. However, the PSUs have recorded only Rs 9513.05 crore. The difference of Rs 854.49 crore is yet to be reconciled. The report notes that this difference between the finance account and the PSU records is noted for 110 PSUs out of the audited 133 PSUs. These amounts are financial assistances for the PSUs from banks and financial institutions and guaranteed by the State under the Kerala Ceilings of Government Guarantee Act (2003). In addition the state government charges a 0.75 percent commission on these guarantees from the PSUs. Not all the PSUs have paid this commission to the State. Outstanding amount to the tune of Rs 15.95 crore is yet to be received from 12 PSUs. The Kerala State Electronics Development Corporation, Kerala State Road Transport Corporation and The Kerala State Cashew Development Corporation are the major defaulters in this commission payment.

Figure 1.3: Outstanding Guarantees of India

There could also be cases where PSUs could manipulate law. For instance the case of Kerala State Financial Enterprise (KSFE) is a point in this context. CAG (2018) identifies that KSFEs have raised public deposits much above the guaranteed limits of the government. "In order to ensure that State Public Sector Undertakings adhered to the provisions of the Companies Act on the finalisation of the annual financial statements, the Finance Department, Government of Kerala issued (September 2015) directions to Administrative Departments of the PSUs to withhold 10 to 15 per cent of budget allocation of defaulting PSUs. Further, no fresh Government guarantee was to be provided to defaulting PSUs to obtain loan.

During 2015-16 to 2017-18, the Administrative Departments, however, released budget allocation of ₹218.63 crore (2015-16), ₹415.27 crore (2016-17) and ₹317.10 crore (2017-18) in full respectively to 23, 24 and 30 PSUs whose accounts were in arrears. Furthermore, six PSUs were given Government guarantee of ₹567.86 crore during 2016-17 for availing loans. During 2017-18 also, nine PSUs with accounts in arrears were given Government guarantee to the tune of ₹1,055.37 crore." (CAG, 2018, pp97). Outstanding guarantees of the State government at the end of 2014-15 financial year as per the CAG (2014) was 11126.87 crore. This was within the limits prescribed by the Kerala Ceilings on Government Guarantees Act 2003.

CONCLUSION

The guarantee from the states is used as a strategy to minimise risks. However, forecasting risks and the attempts to mitigate it is not an easy process. There is also a looming question as to whether the government should bear these risks at all. The government of any State bears risks when they expect the returns from risk to outweigh all costs. The returns from risks for any government would not only mean economic profits from developing infrastructure but also from political mileage that could be gained in the process (Timothy,2007) Guarantees as a means to sponsor government activities is as old as history of powerful states. Shortages of food, failing prospects to tax, wars, natural disasters etc were the common periods when powerful governments borrowed from private individuals and resorted to guaranteeing these finances (Irwin, 2007). Apart from the risks involved government guarantees could be market distorting (RBI,1999).

The history of guarantees by States across the world indicates the predominance of such guarantees in developing infrastructure. Several examples can be noted in the case of the US, France and Canada where such guarantees were used to finance infrastructure development (Irwin, 2001, 13-17). The type of guarantees differed across countries and sometimes there were also contentions on whether such guarantees were beneficial or not. The report on State Finances : A Study of Budgets 2020-21 supports are earlier analysis. Debt decomposition study by the RBI revealed that the debt of the states have declined over the period from 2004-05 to 2009-10 and 2010-11 to 2014-15. However there was an increase of it by 4.3 percent in 2015-16 to 2019-20. The study reveals that 'r' minus 'g' nominal interest minus nominal income has lowered the stock of debt accumulation. The primary deficits in raising the debt gas been increasing .The report says the elimination of these two factors the stock flow concept other than above factors has increased throughout. Stock flow adjustments depends on capital injections to public companies, debt forgiveness, fiscal cost in relation to banking crises and other contingent liabilities with less transparent activities (Bouabdullah, 2017; Weber, 2012). In case of India the

increasing guarantees in this period could be a reason for such discrepancies (Weber, 2012 , Mishra et al, 2021).

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Special Issue

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MIGRATION TRENDS IN KERALA AND GOVERNMENT POLICIES TO ADDRESS UNEMPLOYMENT AND MIGRATION: AN INTEGRATED ANALYSIS (1998–2023)

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ABSTRACT

Migration has long been a defining feature of Kerala's socio-economic landscape, influencing household livelihoods, regional economies, and the state's developmental trajectory. Over the last quarter century, patterns of emigration from Kerala have evolved in response to global labour market dynamics, domestic economic conditions and government policy interventions. This paper presents a comprehensive analysis of Kerala's migration trends from 1998 to 2023 and examines state-level policies designed to address unemployment and related push factors. Drawing upon official migration statistics and government policy documents, it traces the his- torical trajectory of emigration, explores demographic and geographic variations, assesses the socio-economic impacts of remittances and return migration and critically evaluates policy measures such as the Yuva Kerala Mission, the Entrepreneur Support Scheme, and the MSME Scale-Up Mission. The findings highlight both synergies and gaps between observed migration realities and state policy objectives with particular emphasis on the need for targeted reintegration strategies, regionalized employment planning, and mechanisms to capitalize on the skills of returnees and student migrants.

KEYWORDS: *Emigration, Critically, Variations, Migration, Strategies.*

1. INTRODUCTION

Kerala occupies a distinctive position in India's migration landscape. Unlike most Indian states, where internal migration for work predominates, Kerala has maintained a strong tradition of long-term international labour migration, particularly to the Gulf Cooperation Council (GCC) countries. This international orientation has had far-reaching consequences for the state's economy and society, shaping consumption patterns, investment flows, demographic trends, and cultural practices.

The roots of Kerala's modern migration story can be traced to the oil boom of the 1970s, when rapid economic expansion in Gulf economies created an unprecedented demand for labour. Kerala's relatively high literacy rate, well-established recruitment networks, and English language proficiency positioned it as a major source of skilled and semi-skilled workers. Over the following decades, international migration became deeply embedded in the socio-economic fabric of the state. By the 1990s, it had evolved from a temporary coping mechanism for unemployment into a long-term household livelihood stratey. The state's dependence on migration has produced both benefits and vulner- abilities. Remittances have played a critical role in boosting household incomes, funding education, improving housing, and financing small-scale businesses. At the macroeconomic level, they have contributed significantly to Kerala's gross state domestic product (GSDP). However, heavy reliance on overseas employment exposes the state to global economic shocks, shifts in immigration policy, and fluctuations in oil prices. The COVID-19 pandemic starkly demonstrated these risks, triggering mass return migration and disrupting remittance flows. Against this backdrop, the Government of Kerala has implemented a range of programmes aimed at generating local employment, enhancing skill development, and encouraging entrepreneurship. These measures seek to reduce unemployment and mitigate the economic push factors that drive emigration. The central question addressed in this paper is the extent to which such policies align with the realities of migration trends and labour market dynamics in Kerala.

2. Methodology and Data Sources

This paper relies exclusively on two categories of official data. First, it uses a comprehensive statistical report on migration in Kerala covering the years 1998 to 2023, which provides information on emigrant numbers, return migration, demo- graphic characteristics, and district-level patterns. Second, it draws upon official government policy documents out lining major employment and enterprise schemes implemented in recent years, specifically the Yuva Kerala Mission the Entrepreneur Support Scheme, and the MSME Scale-Up Mission.

The analysis proceeds in three stages. The first is a chronological examination of migration trends over the 25-year period. The second is at hematic analysis of demographic, geographic, and economic aspects of migration. The third is a policy review assessing the design, scope, and implementation of key government initiatives, followed by an evaluation of their alignment with migration realities.

3. Historical Migration Trends (1998–2023)

3.1. 1998–2008: The Expansion Era

The decade from 1998 to 2008 marked an era of rapid expansion in emigration from Kerala. This was driven by sustained labour demand in GCC countries, particu- larly in construction, infrastructure development, domestic services and healthcare. The international recruitment industry was well-established, with licensed agencies and informal networks facilitating the placement of workers abroad. At the same time, limited job creation within Kerala created strong push factors, especially for educated youth facing underemployment.

Migration during this phase was largely dominated by male workers, particularly from northern districts such as Malappuram, Kozhikode, and Thrissur. Remittance in flows increased steadily, fuelling local economic activity and triggering visible changes in the built environment, such as the proliferation of modern houses, educational institutions, and commercial establishments.

3.2. 2008–2013: Peak Migration

By 2013, the number of emigrants reached an unprecedented 2.4 million. Migration had become a multigenerational phenomenon, with younger members of migrant families following established pathways to the Gulf. The global financial crisis of 2008 had only a limited short-term impact on Kerala's migration flows, as GCC economies undertook large-scale infrastructure spending to stimulate growth. However, structural changes in destination countries were beginning to emerge including localization policies designed to increase employment for citizens. These policies would later contribute to a decrease in the number of migrants.

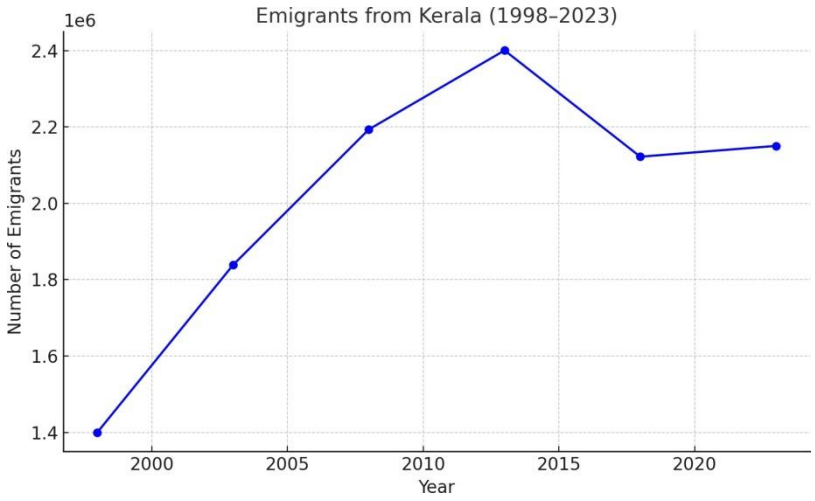

Figure 1: Kerala Migration Trend.

3.3. 2013–2018: Decline

The years from 2013 to 2018 witnessed the first significant decline in Kerala's emigrant population in decades, with a reduction of over 278,000 migrants. Contributing factors included stricter visa requirements, saturation in certain low-skilled job categories and increased competition from migrant-sending countries in South Asia and Africa. This decline also coincided with a gradual diversification of migration destinations, with some Keralites seeking employment in East Asia, Europe, and North America.

3.4. 2018–2023: Partial Recovery and Pandemic Disruption

The period after 2018 showed signs of partial recovery in migration numbers, al- though the growth was modest and uneven across districts. The outbreak of COVID-19 in 2020 caused

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a sharp, temporary reversal, as lockdowns, travel restrictions, and economic contractions in destination countries led to large-scale return migration. By 2023, numbers had stabilised somewhat, but the composition of migrants had shifted, with a higher proportion of women and student migrants.

4. District-Level Variations

Migration patterns are not uniform across Kerala. Malappuram consistently recorded the highest number of emigrants, rising from 444,325 in 2018 to 469,241 in 2023. This reflects the district's deep-rooted migration culture, strong overseas networks, and high reliance on remittances. In contrast, Thiruvananthapuram saw a decline from 154,081 emigrants in 2018 to 135,408 in 2023, suggesting either reduced demand for migrants from the district or a shift toward internal or alternative forms of migration.

These differences underline the importance of regional approaches to employment generation and migration management. Policies designed at the state level must be adaptable to the specific conditions and labour market profiles of different districts.

5. Demographic Patterns in Migration

Over the past 25 years, migration from Kerala has undergone notable demographic shifts. Although men still constitute the majority of emigrants, the proportion of women has steadily increased from 10.8 percent in 1998 to 16.6 percent in 2023. This change reflects growing employment opportunities in sectors such as nursing, care giving, and domestic work abroad.

Student migration has emerged as a significant trend, rising from18,195 in 2018 to 33,414 in 2023.The primary destinations for these students include the United Kingdom, Canada, and Australia. This form of migration is often linked to pathways for permanent residency, but it also creates opportunities for skills acquisition that could benefit Kerala's economy, provided adequate reintegration mechanisms exist.

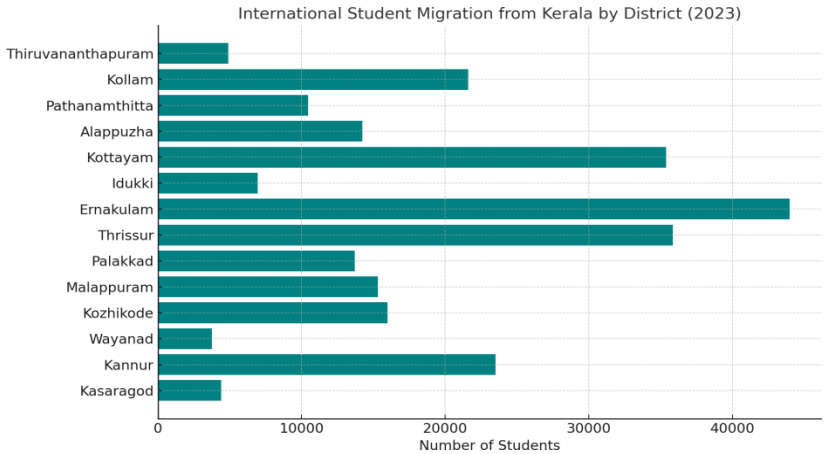

Figure 2: International Student Migration from Kerala.

6. Return Migration and the COVID-19 Impact

Return migration is a continuous feature of Kerala's migration system. While some returnees come back voluntarily after contract completion, others are compelled to return due to job loss, health issues, or family obligations. The COVID-19 pandemic produced an extraordinary wave of return migration, placing significant pressure on the local labour market and on state-level welfare systems. Although emergency support measures were implemented, including financial assistance and reintegration programmes, many returnees struggled to find suitable employment matching their overseas experience.

7. Economic Impact of Remittances

Remittances have long been a cornerstone of Kerala's economy with inflows reaching Rs. 2,08,890 crore in 2023. These funds are used primarily for household consumption, education, real estate investment, and small business development. The economic multiplier effect of remittances has contributed to Kerala's relatively high standard of living compared to other Indian states. However, this dependence creates structural vulnerability, as fluctuations in migrant numbers or earnings abroad can have direct and immediate impacts on both household welfare and state revenue.

District	% of foreign remittances
Kollam	17.8
Malappuram	16.2
Thiruvananthapuram	10.6
Thrissur	9.1
Kozhikode	8.2
Ernakulam	8.2
Kannur	6.5
Alappuzha	5.6
Kottayam	5.2
Pathanamthitta	4.3
Palakkad	3.0
Wayanad	2.9
Kasaragod	1.6
Idukki	0.7

Figure 3: Percentage of Foreign Remittances.

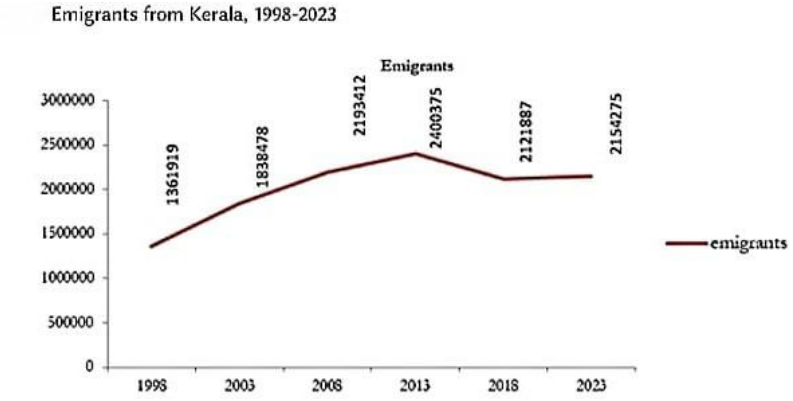

Figure 4: Emigrants from Kerala (1998-2023).

8. Government Policy Responses to Unemployment and Migration

The Government of Kerala has recognized the intertwined nature of unemployment and migration, implementing a range of programmes designed to create local employment opportunities, promote entrepreneurship, and develop industry. Among these, three flagship initiatives stand out: the Yuva Kerala Mission, the Entrepreneur Support Scheme and the MSME Scale-Up Mission.

8.1. Yuva Kerala Mission

The Yuva Kerala Mission targets unemployed youth aged 15 to 35, offering an integrated approach to skill development, career counseling, and entrepreneurship promotion. The programme begins with skill mapping to identify gaps between job seekers' qualifications and industry requirements. Training modules are developed incollaboration with industry partners, ensuring alignment with sectors experiencing growth, such as information technology, tourism, healthcare, and renewable energy Counselling services guide participants toward viable career paths, while entrepreneurship training provides the knowledge and resources needed to establish small enterprises. Job fairs and district-level recruitment drives facilitate direct connections between trained candidates and employers.

8.2. Entrepreneur Support Scheme

The Entrepreneur Support Scheme focuses on fostering manufacturing enterprises by providing capital subsidies for start-up, expansion, and technology upgradation. By reducing financial barriers the scheme encourages local industrial development, which in turn generates employment and reduces reliance on overseas jobs. The ESS also has the potential to support return migrants with technical skills and savings, enabling them to establish businesses that contribute to local economic growth.

8.3. MSME Scale-Up Mission

The MSME Scale-Up Mission addresses the critical role of micro, small and medium enterprises in Kerala's economy. It seeks to expand access to finance, create domestic and international market linkages, and provide shared infrastructure facilities. Capacity building

initiatives train business owners in quality management, export compliance, and digital marketing. By strengthening MSMEs, the Mission creates sustainable employment opportunities that can compete with the allure of overseas work.

8.4. Policy Integration and Gaps

While these programmes address key aspects of unemployment and enterprise development, they lack explicit frameworks for reintegrating return migrants and lever- aging the skills of student migrants. There is considerable potential for integrating the three schemes into a coherent pathway from skill development to enterprise creation and expansion. However, this will require intentional coordination and the incorporation of migration-specific strategies.

9. Comparative Analysis of Trends and Policies

The migration trends observed from 1998 to 2023 reveal both alignment and divergence with state policy objectives. On one hand, the emphasis on skill development and entrepreneurship aligns with the need to create viable alternatives to migration. On the other, the absence of targeted reintegration measures represents a missed opportunity to harness the skills and experience of returnees. Moreover, regional disparities in migration patterns suggest that a uniform, state-wide approach may be less effective than regionally tailored interventions.

10. Conclusion and Policy Recommendations

Kerala's migration experience over the past quarter century illustrates the complex interplay between global labour market dynamics, domestic economic conditions, and public policy. While migration has delivered substantial economic benefits through remittances, it has also created vulnerabilities linked to external shocks and changing immigration policies in destination countries.

To address these challenges, state policy should move toward an integrated migration management frame work that incorporates:

- Targeted reintegration programmes for return migrants, including recognition of overseas skills, job placement services, and business incubation support.
- Regionalised employment strategies that account for district-level differences in migration patterns and economic structures.
- Linkages between student migration and local innovation ecosystems, enabling graduates to apply their international education in Kerala.
- Coordinated implementation of existing schemes, ensuring that skill development leads seamlessly to enterprise creation and expansion.
- Ata-driven monitoring and evaluation, incorporating migration statistics into labour market planning.

By aligning its employment and enterprise policies more closely with migration realities, Kerala can reduce its vulnerability to external shocks while maximizing the developmental benefits of its global connections.

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SUSTAINABILITY AWARENESS AND GREEN CONSUMPTION BEHAVIOUR AMONG DEGREE STUDENTS: EVIDENCE FROM SELECTED WOMEN'S COLLEGES IN THRISSUR DISTRICT

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ABSTRACT

Sustainable development has become a central concern in addressing global challenges such as environmental degradation, climate change, and resource depletion. Students, as future decision-makers and consumers, play a vital role in promoting sustainable practices, making it important to assess their sustainability awareness and consumption behaviour. This study examines green consumption behaviour among degree students, with a particular focus on female students, and investigates how sustainability awareness relates to responsible consumption practices.

KEYWORDS: *Sustainability Awareness, Green Consumption Behaviour, Environment, Students.*

1. INTRODUCTION

Sustainable development has emerged as one of the most widely discussed concepts in contemporary discourse due to its crucial role in addressing pressing global challenges such as environmental degradation, climate change, and resource depletion. As future decision-makers and consumers, students play a significant role in shaping sustainable practices within society. Therefore, assessing the level of sustainability awareness among students becomes highly relevant.

While sustainable development encompasses multiple dimensions, measuring every aspect of it is complex. Among its various components, consumption patterns represent a critical area where the principles of sustainable development must be actively practiced. Responsible and environmentally conscious consumption is essential for ensuring long-term ecological balance and social well-being. However, awareness alone does not automatically translate into responsible behaviour. Several behavioural studies suggest the existence of a gap between

knowledge and actual practice, often referred to as the "awareness–behaviour gap." While students may possess adequate knowledge about sustainability issues, their consumption choices may not always reflect environmentally responsible actions. Therefore, it becomes essential to examine whether sustainability awareness meaningfully influences green consumption behaviour in practice.

Against this backdrop, the present study attempts to examine green consumption behaviour among degree students, with particular focus on their sustainability awareness and its influence on responsible consumption practices

2. Significance of the Study

The study of sustainability awareness and green consumption behaviour among college students is highly significant, as today's students represent the decision-makers and consumers of tomorrow. Their attitudes and behavioural patterns will play a crucial role in shaping future environmental outcomes. Understanding the level of awareness and the extent to which it translates into responsible consumption practices is therefore essential.

A clear assessment of these aspects can assist policymakers and educational institutions in designing targeted sustainability policies, awareness programmes, and behavioural interventions within academic settings. Educational institutions, in particular, serve as important platforms for fostering environmentally responsible values and practices among young individuals.

In the absence of sustainable development practices, long-term economic and social progress becomes increasingly difficult. Therefore, enhancing students' understanding of sustainability and encouraging responsible consumption behaviour is not merely desirable but necessary in the present context

3. Objectives

- To assess the level of sustainability awareness among degree students in selected women's colleges in Thrissur district.
- To analyse the green consumption behaviour of degree students in selected women's colleges in Thrissur district.
- To examine the relationship between sustainability awareness and green consumption behaviour among degree students.

4. Hypothesis

H_0: There is no significant relationship between sustainability awareness and green consumption behaviour among degree students in selected women's colleges in Thrissur district

5. Research Methodology

5.1.Research Design

The study adopts a quantitative research design to examine the relationship between sustainability awareness and green consumption behaviour among degree students, with a particular focus on female students.

5.2. Sampling and Data Collection

Data were collected from two leading women's colleges in Thrissur District. A structured questionnaire was administered via Google Forms to degree students. A total of 400 responses were targeted, and only valid responses were considered for analysis. The questionnaire included items measuring sustainability awareness and green consumption behaviour, structured using a Likert-scale format to capture the degree of agreement of the respondents. The reliability of the measurement scales was assessed using Cronbach's Alpha. The Sustainability Awareness scale demonstrated excellent internal consistency ($\alpha = 0.952$, 13 items), while the Green Consumption Behaviour scale also showed strong reliability ($\alpha = 0.917$, 13 items), indicating that both instruments were highly consistent for capturing the intended constructs**.**

5.3. Data Analysis

Data were analysed using Jamovi statistical software. Descriptive statistics were used to assess the levels of sustainability awareness and green consumption behaviour, while Pearson's correlation examined the relationship between the two variables. Regression analysis was employed to explore predictive relationships, and ANOVA and independent samples t-tests were conducted to investigate differences based on demographic variables. The hypothesis of the study was tested at a 5% level of significance, providing insights into both the levels of awareness and behaviour and their association with demographic characteristics.

6. Review of Literature

Green Consumerism Awareness and Practices among Women in Mangalore City (Manjula Mallya, 2018) This study examines women consumers' awareness of green products and the factors influencing their green purchasing behaviour in Mangaluru, Karnataka. It explores how environmental concerns, awareness of eco-friendly products, and perceptions of price and brand image shape purchasing decisions. The findings indicate that even among an educated consumer segment, the willingness to pay a premium for green products is limited, suggesting the need for cost-reduction strategies in production. The study emphasizes that raising consumer awareness about the environmental impact of their choices can promote greener consumption behaviours and support sustainable practices.

Positive Emotions on Green Purchase Behaviour: An Analysis of College Students in Kerala(Bharathan Syam, Thahasin NP, Deepa KA & K. Salini , 2024) This study investigates the influence of positive emotions on college students' green purchasing behaviour in Kerala. Using a random sample of students and data collected via questionnaires, the analysis (Jamovi and Amos) revealed that positive emotions significantly enhance green purchase behaviour, while gender does not have a significant effect. The findings suggest that fostering positive emotional engagement can be an effective strategy for promoting sustainable consumption among students.

Environmental Awareness & Sustainable Practices among College Students, Chennai (Yogalakshmi, 2025) Explored how **demographics and awareness drivers** influence sustainable practices in college students; highlighted the importance of experiential learning for promoting responsible behaviour.

Environmental Awareness & Green Consumption Behaviour – Bibliometric Review (Gahlawat, Dadhich & Reddy, 2025) Mapped the **relationship between environmental awareness and sustainable consumption** over a decade, identifying trends, drivers, and gaps in consumer behaviour literature.

Consumer Attitude, Awareness and Satisfaction towards Green Products – Kannur District, Kerala (Karunakaran, Sindhu & Anusha, 2025) Examined **awareness, attitudes, and satisfaction** regarding green products, highlighting constraints in eco-friendly consumption in a regional Indian context.

Consumer Awareness towards Green Marketing – Kozhikode District, Kerala (Mol & Kiruthika, 2025) Investigated **environmental consciousness, perception of green products, and willingness to pay a premium**, adding regional consumer behaviour insights.

6.1. Research Gap

Despite the growing research on sustainability awareness and green consumption, studies specifically focusing on women graduates in Thrissur remain scarce. Additionally, there is a lack of empirical investigation into the relationship between sustainability awareness and green consumption behaviour among this group. Most existing research examines general student populations or regional consumer awareness without directly linking awareness to actual sustainable consumption practices. Furthermore, the combined influence of demographic factors and awareness on responsible consumption among women students has received limited attention.

7. Data Analysis and Results

➢ Descriptive Statistics

The analysis of the data indicates a high level of sustainability awareness among students, with a mean score of 3.81 on a 5-point Likert scale, exceeding the midpoint of 3. The standard deviation (0.799) suggests that responses are reasonably consistent, reflecting moderate variation. Similarly, the mean score for green consumption behaviour is 3.67, also above the midpoint, indicating a moderately high to high level of engagement in eco-friendly practices. Interestingly, the mean awareness score is slightly higher than the behaviour score, suggesting that while students are generally knowledgeable about sustainability, their awareness does not always fully translate into action. This awareness–behaviour gap is commonly observed in sustainability research, highlighting the difference between knowledge and practical implementation of environmentally responsible practices

Table 1: Descriptive Statistics

	Awareness Mean	Behaviour Mean
Mean	3.81	3.67
Median	4.00	3.69
Standard deviation	0.799	0.793

Source: Primary Data

A Welch's one-way ANOVA was conducted to examine differences in sustainability awareness across the three streams (Arts, Commerce, and Science). The results indicated a statistically significant difference in awareness, $F(2, 208) = 10.2$, $p < 0.001$. Descriptive statistics showed that mean awareness increased from Arts ($M = 3.55$, $SD = 0.93$) to Commerce ($M = 3.77$, $SD = 0.75$) to Science ($M = 3.99$, $SD = 0.69$), with Science students demonstrating the highest awareness and Arts students the lowest. These findings suggest that at least two streams differ significantly in their sustainability awareness.

Table 2: Group Descriptives of Sustainability Awareness Across Streams

	Stream of Study	N	Mean	SD	SE
Awareness Mean	Arts	112	3.55	0.932	0.0881
	Commerce	98	3.77	0.748	0.0756
	Science	190	3.99	0.691	0.0501

Source: Primary Data

Descriptive analysis of green consumption behaviour across streams showed that mean behaviour scores increased from Arts ($M = 3.35$, $SD = 0.87$) to Commerce ($M = 3.68$, $SD = 0.71$) to Science ($M = 3.84$, $SD = 0.73$), with Science students exhibiting the highest engagement in eco-friendly practices. Overall, behaviour differed significantly across streams, with Arts students reporting the lowest levels of sustainable behaviour, Commerce students showing moderate levels, and Science students demonstrating the highest levels. These findings suggest that students' green consumption behaviour varies by academic stream, with Science students consistently displaying stronger environmentally responsible practices compared to their peers in Arts and Commerce.

- **Independent Samples T-Test**

Independent samples t-tests showed that neither awareness nor behaviour differed significantly by economic background. For awareness, APL students had a slightly higher mean than BPL students, $t(398) = 1.93$, $p = 0.054$, while for behaviour, APL students also scored slightly higher, $t(398) = 1.85$, $p = 0.066$, with Levene's test indicating unequal variances. Although both outcomes showed a trend of higher scores among APL students, the differences were not statistically significant.

Table 3: Independent Samples T-Test

		Statistic	df	p
Awareness Mean	Student's t	1.93	398	.054
Behaviour_Mean	Student's t	1.85[a]	398	.066

Source: Primary Data

➢ **Correlation Matrix**

Pearson's correlation analysis revealed a moderate positive relationship between sustainability awareness and green consumption behaviour ($r = 0.449$, $p < .001$). This indicates that higher levels of sustainability awareness are associated with increased engagement in green consumption practices among degree students. Therefore, the null hypothesis stating that there is no significant relationship between sustainability awareness and green consumption behaviour is rejected.

Table 4: Correlation Matrix

		Awareness_Mean	Behaviour_Mean
Behaviour_Mean	Pearson's r	0.449***	—
	df	398	—
	p-value	<.001	—
	95% CI Upper	0.524	—
	95% CI Lower	0.367	—
Note. * p < .05, ** p < .01, *** p < .001			

Source: Primary Data

➢ **Linear Regression**

A simple linear regression analysis was conducted to examine whether sustainability awareness predicts green consumption behaviour. The model was statistically significant ($R = 0.449$, $R^2 = 0.201$, $p < .001$), indicating that sustainability awareness explains 20.1% of the variance in green consumption behaviour. Sustainability awareness was found to be a significant predictor ($\beta = 0.449$, $p < .001$). Specifically, a one-unit increase in sustainability awareness resulted in a 0.445 increase in green consumption behaviour.

Table 5: Model Fit Measures

Model	R	R^2	Adjusted R^2
1	0.449	0.201	0.199
Note. Models estimated using sample size of N=400			

Source: Primary Data

8. Findings

Students showed a high level of sustainability awareness ($M = 3.81$) and a moderately high level of green consumption behaviour ($M = 3.67$), indicating an awareness–behaviour gap. Both awareness and behaviour differed significantly across streams, with Science students scoring the highest, Arts the lowest, and Commerce in between. Economic background (APL vs BPL) did not significantly affect awareness or behaviour. A moderate positive correlation was found between sustainability awareness and green consumption behaviour ($r = 0.449$, $p < 0.001$). Linear regression confirmed that awareness significantly predicts behaviour, explaining 20.1% of

the variance, with higher awareness associated with increased engagement in eco-friendly practices

These findings suggest that universities and policymakers should focus on enhancing sustainability awareness through targeted educational programs, workshops, and experiential learning, particularly for streams with lower engagement. Promoting practical interventions and awareness campaigns can help bridge the awareness–behaviour gap, encouraging students to adopt more consistent eco-friendly practices. Additionally, integrating sustainability concepts into curricula and campus initiatives could foster long-term behavioural change among graduates.

9. CONCLUSION

The present study highlights that women degree students in Thrissur exhibit a high level of sustainability awareness and a moderately high engagement in green consumption behaviour, although an awareness–behaviour gap persists. Awareness and behaviour differed significantly across academic streams, with Science students consistently showing higher scores, while Arts students reported the lowest. Economic background did not significantly influence either awareness or behaviour. Importantly, sustainability awareness was found to be a significant predictor of green consumption behaviour, indicating that enhancing awareness can effectively promote responsible consumption practices. These findings underscore the need for targeted educational programs, awareness campaigns, and experiential learning opportunities to bridge the gap between knowledge and practice. By fostering both awareness and actionable behaviour, universities and policymakers can contribute to sustainable development goals and cultivate environmentally responsible graduates who can influence broader societal sustainability practices.

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Special Issue

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THE IMPACT OF FINANCIAL LITERACY PROGRAMS ON THE ECONOMIC DECISION-MAKING SKILLS OF HIGHER SECONDARY SCHOOL STUDENTS IN THRISSUR DISTRICT

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ABSTRACT

This study examines the impact of financial literacy programs on the economic decision-making skills of higher secondary school students in Thrissur District, Kerala. In India, there is a growing recognition of the need for financial literacy to equip young people with the skills to make informed and responsible financial decisions. As a part of the broader educational reform in Kerala, financial literacy programs have been introduced to improve the financial capabilities of students. However, the impact of such programs on students' economic decision-making has not been extensively studied, particularly in the context of Thrissur.

This research adopts a mixed-methods approach to assess the effectiveness of these programs. A sample of 150 students from five schools in Thrissur District participated in the study. Quantitative data was collected through pre- and post-program surveys measuring knowledge of financial concepts and decision-making abilities, while qualitative insights were gathered through semi-structured interviews with students and teachers.

The findings indicate that participation in financial literacy programs significantly enhanced students' understanding of financial concepts and improved their ability to make economic decisions, including budgeting, saving, and investment planning. Furthermore, qualitative feedback suggests that while students gained valuable knowledge, they felt the need for more hands-on, real-world applications in the program. This study contributes to the limited body of research on financial literacy in India and provides valuable insights for policymakers, educators, and financial institutions aiming to improve financial literacy among young people.

KEYWORDS: *Financial Institutions, Decision-Making, Literacy, Programs, Economic.*

INTRODUCTION

Background

Financial literacy refers to the ability to understand and effectively use various financial skills, including budgeting, saving, investing, and managing debt. In today's world, these skills are essential for young people to navigate the increasingly complex financial landscape. In India, the significance of financial literacy is magnified by rapid economic growth, financial product diversification, and the increasing access to credit.

India, like many other countries, faces challenges regarding the financial literacy of its youth. According to a report by the National Centre for Financial Education (NCFE), only 27% of Indian adults were financially literate in 2019. This lack of financial literacy among adults has its roots in early education, where financial topics are often not integrated into the curriculum. Financial illiteracy at an early age can lead to poor financial decision-making in adulthood, making it crucial to introduce financial literacy programs in schools.

In Kerala, a state known for its high educational standards, financial literacy programs have been introduced in several higher secondary schools to equip students with essential economic decision-making skills. Thrissur District, with its focus on educational excellence, has also been a prominent participant in this initiative. While there are numerous studies on financial literacy in the Indian context, research specifically examining the impact of these programs on students' economic decision-making abilities remains limited.

Problem Statement

Although the introduction of financial literacy programs in higher secondary schools in Kerala has gained momentum, there is limited empirical research on how these programs affect students' economic decision-making skills. Specifically, there is no comprehensive study focused on Thrissur District, which is home to a diverse student population and has seen the integration of financial literacy into its curriculum. This research aims to fill this gap by evaluating the impact of financial literacy programs on the decision-making abilities of higher secondary school students in Thrissur.

Research Questions

The study is guided by the following research questions:

1. What is the level of financial literacy among higher secondary school students in Thrissur District before and after participating in financial literacy programs?
2. How do financial literacy programs influence the economic decision-making skills of students, specifically in areas like budgeting, saving, and investing?
3. What are the perceptions of students and teachers regarding the effectiveness of the financial literacy programs in improving students' financial decision-making?

Significance of the Study

The significance of this study lies in its potential to contribute to the growing body of research on financial literacy in India, particularly in the context of Kerala. By examining the

effectiveness of financial literacy programs, this study provides valuable insights into the role of financial education in shaping students' financial behavior. It will inform policymakers and educators about the strengths and weaknesses of current programs, offering suggestions for improvements in both content and delivery. The findings can be used to advocate for the inclusion of more comprehensive financial literacy programs in schools across India, ultimately contributing to a generation of financially informed and responsible individuals.

This study also serves to highlight the importance of financial literacy as a foundational life skill. With many young people entering adulthood without the necessary financial knowledge to make informed decisions, this research aims to raise awareness of the need for greater emphasis on financial education in the school curriculum.

Literature Review

International Perspective on Financial Literacy

Financial literacy has been the subject of numerous studies globally, with a consensus emerging about its importance for responsible economic decision-making. Lusardi and Mitchell (2011) found that financial literacy is a key predictor of individuals' ability to make informed decisions regarding retirement planning, saving, and managing debt. Their research also highlighted that people with higher levels of financial literacy tend to make better economic decisions, thus improving their overall financial well-being.

In the United States, programs like the *Jump$tart Coalition for Personal Financial Literacy* have been instrumental in raising awareness about the need for financial education in schools. A study by Atkinson and Messy (2012) reviewed financial literacy programs across various countries and found that students who participated in such programs demonstrated a better understanding of financial concepts and improved decision-making abilities in managing personal finances.

In Australia, a study by GfK (2016) found that financial literacy programs significantly influenced students' decisions regarding saving, credit, and budgeting. These findings align with the premise that financial education can improve both knowledge and behavior, leading to better financial outcomes.

Financial Literacy in India

In India, financial literacy remains a significant challenge. A report by the Reserve Bank of India (RBI) on financial literacy indicates that a large proportion of Indians, especially the youth, lack basic financial knowledge. The introduction of financial literacy programs has been seen as a way to address this gap. In Kerala, where literacy rates are high, financial education is increasingly being integrated into school curricula.

Gupta and Shetty (2015) conducted a study on the financial literacy of students in Indian universities, which revealed that while students had some basic knowledge about finances, they lacked a deeper understanding of more complex financial concepts such as investments and credit management. This suggests that financial literacy programs should go beyond basic knowledge to include practical applications of financial skills.

In Kerala, the government has partnered with financial institutions to offer financial literacy programs in schools. However, there is limited research on how these programs affect students' decision-making. The existing studies tend to focus on general knowledge improvement rather than on the practical application of financial concepts in real-life decisions.

Previous Studies on Financial Literacy and Decision-Making

Studies on the relationship between financial literacy and decision-making behavior highlight the significant influence of financial education on young people's financial habits. Jappelli and Padula (2013) demonstrated that financial literacy is closely tied to better decision-making in areas such as savings and investments. Similarly, a study by Bernheim et al. (2001) showed that students exposed to financial education were more likely to save and plan for their financial futures.

In India, a study by Banerjee and Duflo (2019) explored how financial literacy affects individuals' savings behavior, concluding that financial education can influence students to make better financial decisions. However, the research specifically targeting secondary school students remains limited, particularly with respect to long-term changes in financial behavior after the programs.

Methodology

Research Design

This study follows a mixed-methods research design, combining both quantitative and qualitative approaches to gather comprehensive data on the impact of financial literacy programs. The quantitative data is collected through pre- and post-program surveys, while qualitative insights are obtained through semi-structured interviews with students and teachers.

Population and Sample

The research focuses on higher secondary school students in Thrissur District. A total of 150 students from five schools participated in the study, all of whom had attended financial literacy programs. These schools were selected based on their active participation in such programs. A random sample of 30 students from each school was selected for the survey, and 10 students per school were chosen for the interviews.

Data Collection

- **Surveys**:
  Pre- and post-program surveys were administered to measure the students' knowledge of financial concepts and their ability to make economic decisions. The survey included questions on budgeting, saving, investing, and understanding economic concepts such as inflation and interest rates. The survey was designed with a combination of multiple-choice and Likert scale questions.
- **Interviews**:
  Semi-structured interviews were conducted with 50 students and 5 teachers to understand their perspectives on the financial literacy program and its impact on decision-making. The

interviews focused on how students applied financial concepts in their daily lives and how teachers perceived the effectiveness of the program.

Data Analysis

- **Quantitative Analysis:**

The pre- and post-program survey responses were analyzed using paired sample t-tests to assess whether there was a significant change in students' financial literacy levels.

- **Quantitative Analysis:**

The interviews were transcribed and analyzed using thematic analysis to identify key themes and patterns related to the impact of financial literacy on decision-making.

Results

Variable	Pre-Program Score (%)	Post-Program Score (%)	Change (%)
Knowledge of Budgeting	60	80	+20
Understanding of Savings	55	75	+20
Understanding of Investments	50	70	+20
Ability to Make Economic Decisions	58	78	+20

DISCUSSION

The results from the surveys indicate that the financial literacy program led to a significant improvement in students' financial knowledge and decision-making abilities. The increase in scores across budgeting, saving, and investing suggests that the program effectively improved students' understanding of fundamental financial concepts.

Impact on Knowledge and Decision-Making

The significant increase in knowledge scores post-program confirms the effectiveness of the financial literacy education. Students demonstrated a stronger grasp of basic financial concepts such as budgeting and saving, and many reported that they had started applying these concepts in their daily lives, particularly in managing personal expenses.

Qualitative Insights

The interviews provided additional insights into how students perceived the program. Many students felt more confident in their financial decision-making abilities. However, some students expressed a desire for more practical, real-world applications of financial concepts, such as hands-on budgeting exercises or real-life case studies. Teachers also noted that students showed more interest in discussions about personal finance, suggesting that the program sparked a greater awareness of financial responsibility.

Challenges and Areas for Improvement

Despite the positive impact, some students found it difficult to fully apply the concepts learned due to the abstract nature of some topics, such as investment strategies. The program could benefit from including more interactive elements, such as workshops, simulations, or practical scenarios where students can manage hypothetical financial situations.

CONCLUSION

This study provides compelling evidence that financial literacy programs significantly improve the economic decision-making skills of higher secondary school students in Thrissur District. The quantitative data shows that students' financial knowledge and decision-making abilities improved significantly after participating in the program. Qualitative feedback from students and teachers further supports the positive impact of the program, although it also highlights areas for improvement.

Recommendations

1. Financial literacy programs should incorporate more practical exercises and real-life scenarios to help students apply financial concepts effectively.
2. Schools should ensure that these programs are integrated into the curriculum in a way that fosters continuous learning and development.
3. Further research should explore the long-term effects of these programs on students' financial behavior post-graduation.

By equipping young people with the tools to make informed economic decisions, financial literacy programs have the potential to contribute to a more financially responsible generation.

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Special Issue

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KERALA'S POULTRY SECTOR BETWEEN IMPORT DEPENDENCE AND LOCAL PRODUCTION: CHALLENGES AND PROSPECTS

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ABSTRACT:

Poultry sector is a lifeline for many marginal and small-scale farmers in Kerala. During 14th Five Year Plan Period which shows a paramount diversification of poultry production systems with alternative strategies in Kerala. Non availability of chicks and feed are the results of dispersed production and marketing gaps that affect the poultry sector in Kerala. Due to the dependence on other states, the sales of our products at marginal rate could not be achieved. The availability of day-old broiler chicks and egg type day-old chicks are inadequate and not on par with the existing demand in Kerala. The production of broiler meat, table eggs, and hatching eggs are in sufficient. Lack of sufficient land for establishing large poultry farms, high labour and feed cost, declining poultry population, lack of quality backyard layer chicks, inflow of eggs at lesser price, lack of quality feed, broiler day-old-chicks at an optimal price and lack of commercial egg production are the factors which reduced the egg production in the State (Kerala State Poultry Development Corporation).By repositioning poultry sector in Kerala stimulates local production with the development of hatcheries, modern technology enhancement and various improvements will tackle the issue of import dependence of poultry items.

KEYWORDS: *Poultry Sector, Import Dependence, Local Production, Kerala Economy.*

INTRODUCTION:

Agriculture and allied activities contribute an important role in Kerala's economy for providing supplementary income and employment to small and marginal livelihoods. The livestock sector is an important part of the global food system and the economy, and it supports the livelihoods of a large population. The sector is a key component of agriculture and contributes to food security, nutrition, poverty reduction, employment, and economic growth. Livestock serve as a critical asset and safety net for the poor, particularly women and pastoral communities, and provide nutrition to billions of rural and urban households. Livestock in India are reared as an integral part of mixed farming systems. They meet their energy requirements through crop residues and by products and, in return, provide draught power and dung manure for crop production. The livestock sector also functions as an important source of credit and insurance. Livestock and livelihoods are closely linked, especially in arid and semi-arid regions. The Government

therefore allocates substantial resources to improve productivity, disease control, fodder production, value addition, and adoption of scientific breeding practice. Among the livestock subsectors, poultry farming has emerged as one of the most available and commercially viable activities due to its high demand for poultry products, low initial investment, quick returns, and high nutritional relevance. As a nutrition part eggs and meat played an integral source and their demand is increasing ion Keralawith urbanisation, population explosion and changing dietary patterns. Despite this growing demand, Kerala's poultry sector shows a structural imbalance between production and consumption. The state is considered a by high consumption of poultry products but comparatively low levels of domestic production. A significant share of eggs and broiler chicken consumed in Kerala is obtained from neighbouring states such as Tamil Nadu and Karnataka. This dependence has shaped determined supply gap and lead to in significant outflow of income from the state economy. Consequently, local farmers are unable to fully benefit from the expanding market, while consumers remain vulnerable to price fluctuations and supply disruptions. In this context, examining the poultry sector from the perspective of regional economic development becomes important. Reducing import dependence and strengthening local production can contribute not only to farmer income and rural employment but also to nutritional security and economic self-reliance. Repositioning the poultry sector as an integrated agro-business and livelihood activity therefore holds significant policy relevance for Kerala's economy. Against this background, the present study analyses the current status, constraints, and policy measures required to promote local poultry production and reduce dependence on external supply.

OBJECTIVES:

1. To examine the current status of poultry sector in Kerala.
2. To identify major constraints faced by local poultry production in Kerala.
3. To analyse policy measures required to strengthen local production and reduce import dependence.

METHODOLOGY:

The study was conducted on the basis of secondary data and major sources of data including Basic Animal Husbandry Statistics, Livestock Census, FAOSTAT database, ministry of commerce and statistics, Economic Review (state planning board) and various Government published reports.

CURRENT STATUS OF POULTRY SECTOR IN KERALA:

India has one of the largest livestock populations in the world. The total livestock population stood at 536.76 million in 2019, as per the 20th Livestock Census. This represents an increase of 4.8 per cent over the Livestock Census of 2012. Rural areas accounted for 514.11 million livestock, which is 95.78 per cent of the total, while urban areas accounted for 22.65 million livestock, or 4.22 per cent. The livestock population increased by 4.56 per cent in rural areas and by 11.19 per cent in urban areas. The livestock population of Kerala was reported as 29.09 lakh, accounting for 5.4 per cent, according to the 20th Livestock Census 2019. The poultry population in the State was 297.7 lakh, which accounted for 3.5 per cent of the total poultry

population in the country. The poultry population in Kerala grew by 22.6 per cent between the 2012 and 2019 Livestock Censuses, which was higher than the national growth rate of 16.8 per cent for total poultry population during the same period. In Kerala, the livestock sector is one of the fastest growing sectors of the rural economy. The contribution of the livestock sector in total agriculture and allied sector Gross State Value Added (GSVA) at current prices 2011-12 was 24.18 per cent (Quick estimates) (DES, 2024-25). The share in the total Gross State Value Added (GSVA) at current prices of the State was 2.6 per cent during 2023-24 (P) and 2.4 per cent during 2024-25(Q). In real terms, GSVA in the Livestock sector at current prices (2011-12) was Rs.26,74,820 lakh in 2023-24(P) and it increased to Rs.27,00,766 in 2024-25(Q) (DES, 2024-25). GSVA in the Livestock sector at constant prices (2011-12) was Rs. 11,30,619 in 2023-24(P) and it decreased to Rs.11,18,862 in 2024-25(Q) (DES, 2024-25). There was a similar decline in the production of eggs due to various disease outbreaks and the two floods of 2018 and 2019. But egg production picked up over the 14th plan period from 221 crore in 2020-21 to 251 crore in 2024-25. In the case of meat, the total production was stagnant for a prolonged period but increased from 4.6 lakh tons in 2020-21 to 5.2 lakh tons in 2024-25 (Dept. of Animal Husbandry, Gok).

EGG PRODUCTION:

Egg and meat production in India has taken a quantum leap in the last four decades, emerging from unscientific farming practices to commercial production systems with state-of-the-art technological interventions. India is a leading global egg producer, typically ranking second after China. In 2024-25, India's total egg production was 149.11 billion, showing an annual growth of 4.44 per cent over the previous year. (FAO 2025) The top five egg-producing states are Andhra Pradesh (18.37 per cent) Tamil Nadu (15.64 per cent) Telangana (12.98 per cent) West Bengal (10.72 per cent) and Karnataka (6.67 per cent) contributing over 64% of the total production. Out of the total eggs produced, commercial poultry contributed 125.8 billion eggs, accounting for 84.49 per cent national output. Backyard poultry, on the other hand produced 23.13 billion eggs representing 15.51 per cent of the total production. The per capita availability of egg is 106 eggs per annum (BAHS 2025). With lower production costs and surplus capacity, India is well-positioned as 2nd in egg production to competitively supply the international market. (FAO) Kerala is bagged 14th position in holding egg production in the country. While Kerala has a high per capita egg consumption, its domestic production is significantly lower than demand, making it a major egg importer rather than a leading producer. The production of egg increased from 22.48 crore in 2022-23 to 25.14 crore in 2024-25 (Basic Animal Husbandry Statistics, 2025). By considering demand, Kerala's egg production remains low with average per capita availability of egg is 70. However, the state has made a significant growth and registered 4.52 per cent which is above national growth rate of 4.44 per cent in 204.25 but there is a decline in the production of eggs and decline in income generated from sale of eggs in the year 2024-25 compared to 2023-24.

State wise estimate of egg production during 2018-19 to 2024-25 (fig in lakh nos)

YEAR	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
KERALA	22905.99	21845.10	22134.89	22300.80	22475.11	24052.61	25140.71

Kerala's egg production shows an increasing trend during 2018 to 2025, but there is a decline observed in 2019-20 because of market disruptions and disease outbreaks. Although the state has improved its production performance in recent years, the growth rate remains moderate when compared with the rapid rise in consumption demand. This indicates that local production is still insufficient to meet the state's requirement, thereby necessitating continued dependence on imports from neighbouring states. The trend therefore highlights the need for strengthening domestic poultry production to achieve greater self-sufficiency and price stability.

MEAT PRODUCTION:

Global meat production increased by 1.7 percent in 2024, reaching 379 million tonnes (carcass weight equivalent) according to Meat Market Review 2024, FAO, published in 2025. Kerala's contribution to the total meat production in the country was 4.98 per cent in 2024-25 (Basic Animal Husbandry Statistics 2025). Kerala ranks 8th position in meat production in the year 2024-25 (BAHS 2025). Domestic demand for meat has been growing at a faster pace. In this context, expanding the "Kerala Chicken" scheme is essential. Kerala Chicken is a project promoted by the Government of Kerala to create availability of quality broiler chicken meat at reasonable prices to consumers throughout Kerala under the brand name of Kerala Chicken. The project was started in November 2017 in association with the Animal Husbandry Department, Kerala State Poultry Development Corporation (KSPDC), Meat Products of India Limited (MPI) and Kudumbasree. Under this project, Government of Kerala envisages establishing Broiler chicken farms throughout Kerala, establishment of infrastructure viz., Breeder units, hatcheries, feed supply units, abattoirs, blast freezers, rendering plants, cold storages and marketing under the brand name "Kerala Chicken" and sales through outlets including Kudumbasree.

State wise estimate of meat production during 2023-25(fig in tonnes nos)

2023-24	14.48
2024-25	14.55

The estimated meat production indicates a declining trend from 244.44 thousand tonnes in 2023-34 to 237.41 thousand tonnes in 2024-25. This decline shows that the instability in local livestock and poultry production, this occurs because of rising feed costs, disease outbreaks, environmental and regulatory restrictions. The declining trends suggest that domestic production has not been able to keep pace with increasing demand for meat products. Kerala continues to rely on inflow of poultry meat from neighbouring states particularly from Tamil Nadu to meet the requirements of consumers. The tendency reinforces the argument that strengthening local poultry production is necessary to reduce import dependence and ensure price stability.

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MAJOR CONSTRAINTS IN POULTRY SECTOR:

The current trends in Kerala poultry were reviewed and several gaps were identified. Non availability of chicks and feed are the major constraints and dispersed production and marketing are the gaps that affect the sector. Due to the dependence on other states, the sales of our products at marginal rate could not be achieved. The availability of egg- type day -old chicks, day-old broiler chicks are inadequate and not on equal with existing demand in Kerala. The production of table eggs, hatching eggs and broiler meat is sufficient but there should be a manifold increase in hatching facility.

The production of Poultry feed within the state has to be given special emphasis. Supply of high-quality chicks and high-quality feed is to be ensured. Marginal rate to the producers shall be assured by appropriate mechanisms, and poor and marginal farmers re quire special attention. Minimum Support Price (MSP) provision is essential. Ascertaining proper marketing channels, assisted by the respective societies, shall be undertaken by appro priate functionaries (to be formulated). The postproduction activities and responsibilities shall be shared by societies and the producers may be relieved from this burden so that they can concentrate on the production process alone. A network of collection centres is an absolute necessity in this sector. Other requirements include local niche markets, nearby or distant markets, wholesale markets, and convergence with AH Department and LSGD. Feed formulation be made judiciously depending on the CP ratio requirements and seasonal requirements. The efficiency of backyard rearing can be increased by focusing on poultry biodiversity. Integrated DPR will improve proper production, processing, and marketing. To promote retail outlets, we must modernize by enhancing the quality by improving facilities and easy access. A holistic approach is needed, and laws must be strictly enforced

Interstate migration of Livestock and Products Interstate migration is a significant factor in Kerala's livestock sector, primarily through the importation of livestock and feed from other states to meet local demand. The state's own livestock production, especially of fodder and certain livestock types, has historically been insufficient to meet consumption needs, leading to a reliance on external sources.

Import of poultry birds 2024-25

Desi (Nos)	Adult	135916
	Adult	3889236
Broiler (Nos)	Chicks	210854
	Ducks (Nos)	94140

Source: Economic Review 2025

Import of livestock products 2024-25

Chicken	259390
Processed chicken	6877976
Dressed /frozen chicken	9051895
Fowl eggs	210932602
Duck eggs	19,286,750
Hatching eggs	10,599,359
Other fertilized eggs	3,874,310

Source: Animal Husbandry Statistics Kerala (Economic Review 2025)

The import statistics strongly indicates that Kerala's dependence on external sources for poultry products. There is a large number of adult broiler birds brought from outside states, instead of producing chicks and growing birds within the state, Kerala relies on neighbouring poultry-producing regions for stocking farms. This pattern indicates that Kerala lacks backward linkages in the poultry value chain. A complete poultry economy requires feed production, hatcheries, chick supply, grow-out farms, processing, and marketing. However, the data shows that the early stages of production, breeding and chick supply are located outside the state. As a result, value addition and income generation occur elsewhere while Kerala remains primarily a consumption market. This dependence increases production costs for local farmers and discourages new entrants into poultry farming. Comparing to live bird's supply, a very large number of dressed and processed chicken is brought into the state, shows that Kerala performs as a consumption market rather than production centre. Similarly, the import of more than 210 million fowl eggs and a substantial quantity of hatching eggs demonstrate inadequate domestic production capacity, particularly in breeding and hatchery infrastructure. The dependence on imported hatching eggs further suggests that not only consumption but even the production cycle of poultry farming relies on outside states. This results in income leakage, limits the growth of local farmers, and exposes the state to supply disruptions and price fluctuations. Thus, the data confirms that the core issue in Kerala's poultry sector is not lack of demand but insufficient local production and value-chain integration.

Waste management: This is a major concern in Poultry meat processing and without addressing this Poultry industry cannot move forward. There are few dry rendering plants in the State owned by private people and some government agencies. Under government agencies, MPI, BDS, KVASU have rendering plants at present. In Kerala Chicken Project there is provision for 5 more rendering plants. The Poultry waste must be collected from the source and transport ed to the rendering units and rendered so that this meal can be used as pet food and Poultry feed ingredient. A certain amount can be collected from the private chicken outlets for this purpose. Reefer vans and cold storage facilities are required for this purpose. Two rendering plants in each district may be set up initially and extended to more areas according to the necessity arising.

Broiler breeder farms in hot and humid climate like that of Kerala will lead to increase in mortality percentage, reduction in production and reproduction performance by around 20% which will make the business non-viable. This is the reason why there is no breed er farm located in the western side of the western ghats of India. A large population of (1,00,000) significant numbers of active and reserve sire and dam lines (5 each) is required for exploitation of several component traits and also to reduce the inbreeding effects, which makes it difficult for smaller breeders and governments to contribute in the broiler and layer breeding. From the above mentioned 10 lakh breeder birds, we have to get one crore accurate data for doing selection of right birds for the next generation. We have to select 10,000 females and 2000 males from the 10 lakh (one lakh from each line) pure lines and the remaining should be discarded, which will make huge loss every year. Breeder opera tion needs several acres (about 1000 acres) of land for infra-structure development. This needs several crores (INR 1000 crores) for purchase of pure lines from the breeders and also to develop infrastructure for the breeders and related activities.

There are only three broiler breeders globally, namely Cobb-Vantress (Tyson Foods), Aviagen (Erich Wesjohann group) and Venkateshwara Hatcheries group and five-layer breeders including Hendrix genetics, H & N International, Venkateshwara Hatcheries group, BÁBOLNA TETRA

Ltd. This monopoly limits our possibility of purchasing pure lines existing in the market to start our venture. Acclimatization of the pure lines purchased from temperate countries is another problem which we have to face

Presently 279 veterinary hospitals /clinics,870 veterinary dispensaries,15 veterinary aid centre,2846 AI centres under Animal husbandry departments and144 AI centres under others, 3 Semen production centres under others, 7 frozen semen banks under others exists in Kerala. Lacking of centres will result in the decline of production rates of poultry products and increase in the dependence of import products.

POLICIES RECOMMENDED BY GOVERNMENT:

Indian budget 2025-26 promotes increasing farmer's income by enhancing productivity in agricultural and allied sector Support includes entrepreneurship in the sector to facilitate job creation in Rural and Peri-urban areas, loan-linked capital subsidy support scheme for establishment of veterinary and para-vet colleges, veterinary hospitals, diagnostic laboratories and breeding facilities in the private sector**.** Kerala budget 2025-26 highlights an allocation of ₹318.46 crore is provided for the Animal Husbandry sector

The production of Poultry feed within the state has to be given special emphasis. Supply of high-quality chicks and high-quality feed is to be ensured. Marginal rate to the producers shall be assured by appropriate mechanisms, and poor and marginal farmers re quire special attention. Minimum Support Price (MSP) provision is essential. Ascertaining proper marketing channels, assisted by the respective societies, shall be undertaken by appro private functionaries (to be formulated). The postproduction activities and responsibilities shall be shared by societies and the producers may be relieved from this burden so that they can concentrate on the production process alone. A network of collection centres is an absolute necessity in this sector. Other requirements include local niche markets, nearby or distant markets, wholesale markets, and convergence with AH Department and LSGD. Feed formulation be made judiciously depending on the CP ratio requirements and seasonal requirements. The efficiency of backyard rearing can be increased by focusing on poultry biodiversity. Integrated DPR will improve proper production, processing, and marketing. To promote retail outlets, we must modernize by enhancing the quality by improving facilities and easy access. A holistic approach is needed, and laws must be strictly enforced.

Infrastructure and Investments:

- Proposed Establishment of Mega Poultry Projects and Poultry Biodiversity Centres with project estimates of Rs.50 to 100 crores in 50 to 100 acres of land, in regions like Kolahalamedu in Idukki District, Thiruvazhamkunnu in Palakkad District and Mundayad in Kannur District are discussed. Hi-tech Broiler Grand Parent Stock Research Stations for developing 'Coloured meat lines and Coloured egg producer lines are also considered under regard. Dual purpose chicken lines for development of improved layers particularly suitable

for Kerala have to be evolved. Dependency of White Broilers must be continued until Kerala specific chicken lines are developed.

- Mega hatchery Complexes with daily hatching capacity of 5000-day old chicks in the layer and broiler categories is envisaged. The Feed mill capacity in each region shall be in tune with the requirement of feed for all units in the respective Districts.
- The production, processing, and marketing (ppm) networks shall be the backbone and deciding factor in estimating the profitability.
- The mobilization of resource funding by central agencies like ICAR, CSIR, DBT, NABARD, GOI, and LSGD can be ventured. Likewise, capital infusion by NRIs and other appropriate agencies and PPP model aspirants will be convinced of the technical merits and viability of the projects.
- Support from NRKs in the Veterinary and AH sector may be sought for developing Kerala Poultry Linkages. Such possibilities shall be explored.
- The investors are permitted to start components like tourism-oriented projects, emu, ostrich farms, tur key, duck, goose, guinea fowl production centres and /or its demonstration units, training, research centres, and R and D components comprising short-, medium-, and long-term perspectives also can be considered with objectives of conservation of poultry biodiversity.
- Small avian species like quails will be categorized for production research with high level pharmaceutical, medicinal, functional, and therapeutic indices.
- The organic poultry production systems will be provided very high priority, and encouragement will be provided for research on the isolation of lysozyme, immunoglobulin, and inositol phosphates present in egg.
- The breakthroughs achieved by the KVASU within the short span of 10 years are highly laudable and are of national and international repute.
- The existing facilities in the Faculty of Poultry Science, the only one of its kind in India, have to be strengthened. The faculty strength in the KVASU is to be doubled, particularly in the Faculty of Poultry Science, as it is most self-reliant, self-sustainable and priority production sector in the State.
- Technological support and farm advisory services and facilitation cum consultancy services shall be made available to the new entrepreneurs from all technical institutions and lab oratories within and outside the state, for testing food safety and security

Policy Options Suggested in Priority Areas:

- Launching of skill development centres/ poultry poly-techniques.
- Technology transfer centres/poultry extension education and entrepreneurship centres/units in all districts.

- For promotion of quail egg and meat production, such units in all LSGs must be created or increased.
- Establishment of a centre for duck production and research in Kuttanad (already 8 State Planning Board 8 proposed 16 crores)
- Development of grandparent stock of Kuttanad ducks at CASM, Thiruvazhamkunnu.
- Create R and D centre for 'avian division of climatology' at CASM, Thiruvazhamkunnu.
- Clean, hygienic poultry meat processing is to be established urgently through mini processing units in all LSGs.
- Cut up chicken ready-to-consume (r to c) centres y
- Deboned chicken meat production units as per HACCP protocol with export orientation to middle east and far east countries are proposed within 20 km radius of airports.
- Popularisation of production units/ demonstration units for duck, turkey and quail egg and meat production units and its post-production technologies are also suggested.
- Doubling of duck, turkey and quail meat production in high ranges
- Climate change monitoring and alleviation. System wise, location specific, climate change resilient poultry production in coastal, midland, and highland regions.
- Biosecurity applications in poultry housing.
- Environmental upgradation by protection of nature.
- Native fowl conservation strategies with gene pool preservation for future exploitation.
- High serum prolactin birds for conserving the broodiness trait in desi/ native fowls recommended.
- Establishment of "poultry estate" in tribal village in Attapady.
- Rearing of ornamental fowls, fancy fowls.
- Marketing network for online niche markets of poultry products is suggested.
- Value addition at primary, secondary and tertiary levels is an absolute necessity.
- Egg collection centres (egg depots) in selected LSG wards.
- Refrigerated/freezer vans can be used for distant marketing.
- Ensure (hhh) triangular mode of marketing egg and poultry meat at regular intervals in hotels, hostels and hospitals.
- Operating poultry feed mills under revolving fund mode successfully operated in KVASU may be extended to all districts
- Cultivation of maize and soybean to be promoted.

Applied aspects of EC Housing principles can be met with natural attributes of clean, green and ethical farming during certain seasons in Kerala. The importance of diversification of poultry production systems (PPS), entrepreneurship development and income generation

policy options are listed separately. Poultry technician services at doorstep through field supervisors on daily wage basis is suggested. Alternate strategies in PPS in Kerala in tune with the size of landholding is also to be explored. Utilization of alternate species of poultry for further exploitation either for eggs or for meat purpose.

CONCLUSION:

Livestock sector played a vital role for the enhancement of rural livelihood, food security, employment opportunities since, the dependence of import products lacks our states overall productivity especially in poultry sector. for the overall productivity of poultry sector there should be an enhanced technology development and institutional support. Government implements weightage on animal husbandry department for the year 2025-26 for the improvement of activities of the animal husbandry. In the modern era many young entrepreneurs are engaging in poultry farming because of fast return and low investment but still lacks some factors like modern technology, hatcheries Ai centres and there should be more focused research and development centres.

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Special Issue

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A GENERAL OVERVIEW OFGENDER DISPARITY IN WORK PARTICIPATION OFTHE WORLD, INDIA AND KERALA FOR SUSTAINABLE DEVELOPMENT POLICIES

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ABSTRACT

Gender inequality is an important issue to be addressed in the contemporary world. The gender gap and its resultant economic backwardness are a developmental problem. It hinders economic development by perpetuating inequality. Decreasing inequality is essential for self-sustaining growth and development. Extreme inequality leads to economic inefficiency. For a developing society, a collaboration of females along with males in the social process is essential. Ownership of assets by women is essential for poverty reduction. Though there are several enactments and policies, their impacts are minimal. For this study, secondary data from PLFS 2017-18, PLFs 2019-2020, PLFS 2020-21, MOSPI, NSSO and ILO data were used.

KEYWORDS: *Gender Disparity, Work Participation, Economic Development, Female Education, Inequality.*

INTRODUCTION:

Gender disparity in work participation remains a universal concern globally, manifesting distinctly across various communities and sectors. This paper examines the problem of gender disparity in work participation in the world, India and Kerala. A comparative analysis between India as a whole and Kerala was carried out using the work participation rate and unemployment rate of both males and females. The global gender gap in work participation was also taken into account to show the global disparity in work participation. The existing literature highlights significant barriers to the participation of women in the workforce, which include limited access to education and training, societal norms and unequal distribution of household responsibilities (Kabeer, 2016; World Bank, 2020). These barriers are compounded by the nature of the work, which is traditionally perceived as male-dominated due to its physical demands and associated risks (Harper et al., 2013).

The past four decades have shown a spurt in female labour force participation all over the world, both in developed and developing countries. Several factors have been instrumental to this. On the demand side, a general rise in the demand for labour consequent upon the expansion of output and a rise in the education of women are two important factors. With the increasing share of services in GNP, demand for labour in typical female occupations like clerical and service jobs has been growing very fast. An increase in women's education, leading them to acquire

greater skills, has also led to an increase in female labour force participation. On the supply side, rising wages for women, changes in family composition, and lower male earnings have also contributed to pushing up female labour force participation. Another important factor, especially in Western countries, was the increase in the proportion of single women who had no alternative but to join the labour force for sustenance. Despite considerable efforts at promoting gender equality and gender mainstreaming within the organisational structures of policymakers and change agents, there are still considerable gaps in the knowledge of gender relations and how these are affected by the change (Bennette, 2004)).

Methodology

For this study, secondary data from PLFS 2017-18, PLFs 2019-2020, PLFS 2020-21, MOSPI, NSSO and ILO data were used.

Objectives

1. To examine a general overview of gender disparity in work participation from the Global, India and Kerala perspective
2. To analyse the existence of wage disparity in India
3. To study the constraints for low female participation in India.

Review of literature:

1. The Global Gender Gap Report of the World Economic Forum (2023), states a 60% of the global gender gap in economic participation and opportunities. This indicates that on an average women have only 60% of the economic opportunities available to men. Women's participation in the global workforce is significantly lower than men, and they are more likely to be concentrated in lower-paying, informal and risky jobs. The report also highlights that women continue to face a substantial wage gap, earning approximately 77% of what men earn for the same work. Furthermore, women hold fewer leadership positions globally, with only 29% of senior management roles occupied by women (WEF, 2023).

2. The female work participation rate in India was 32.8% by the latest periodic labour force survey (Ministry of Labour and Employment, Directorate General of Employment, employment statistics focus on 2023). As per the data provided by the National Statistical Office (NSO), the female labour force participation rate in India was estimated at 23.7% in 2020, compared to 75.7% for men (NSO, 2021). This low female participation is a result of various socio-cultural factors, including traditional gender roles, limited access to education and healthcare and inadequate economic opportunities for women.

3. Kerala, despite being a model state for its social development indicators, also experiences gender disparity in work participation. The state had shown that the female work participation rate was only 18.23 per cent by the 2011 Census (The Gender Statistics Report of 2016-2017). The female worker participation ratio on the usual status basis in the state during 2009- 10 and 2011-2012 was 26.6 per cent and 23.7 per cent. Among the districts, Idukki had the highest labour force participation of 33.2 per cent and Malappuram had the lowest of 7.6 per cent (2011 Census).

4. Kerala Development Report (2019) highlights that the female labour force participation rate in Kerala is higher than the national average, at around 20-25%. However, this figure still

reflects significant gender inequality, as the male labour force participation rate stands much higher, at around 70-75% (Kerala Development Report, 2019). Agriculture and fishing are major sources of livelihood in the rural areas of Kerala, but women's work is often undervalued despite their crucial contributions to household income.

Research Gap

Existing literature has explored the gendered division of labour in rural and informal economies, and there is a lack of focused research on the unique challenges and socio-economic constraints faced by women in work participation.

Overview

International Scenario of Female Labour Force Participation

Though the participation of women in economic activities has grown significantly in the past few decades, women have not won occupational equality. In many of the developed countries, women have taken up most of the newly created jobs, a process which is often referred to as the feminisation of the labour force. Meulders, Plasman & Plasman (1997) report that a significant proportion of women in the member states of the European Union participate in typical labour relations such as part-time employment, temporary employment and unusual scheduled employment involving inferior and hazardous labour conditions. Thus, the age-old problems of segregation and low pay scales still predominate in international female employment scenarios. European labour markets are in general, characterised by high female labour force participation and a high degree of segregation by gender. Denmark and the United Kingdom, with the highest female labour force participation rates, display as great a degree of segregation by gender as countries like Greece and Spain with lower female participation rates (Plantega, 1997).Enhancing the participation of women in economic activities is essential for achieving poverty reduction and economic development, and it is also crucial for overall social development. Women constitute roughly half of the economically active population, but their contribution to economic activity is far below their potential. Unlocking this large potential could work as a catalyst in achieving goals as set under the Sustainable Development Goals.

The labour force participation rate of females globally is unequal across the world. It was 24.9 per cent below that of men. Employment growth hardly matches the growth of the working-age population. Equal opportunity and equal treatment in the labour market are the core agenda of ILO for decent work. Gender equality is the cross-cutting objective of the ILO. It is the key goal of the 2030 Sustainable Development Goals. Global labour force participation among women was 50% while that was 80% among males. (ILO Gender Data Portal of World Bank IBRA-IDA, 2022). The rate of participation among men is more than three times higher in South Asia, the Middle East, and North Africa. The gender Gap in Labour force participation worldwide in 2017 was 26.5% (ILO's Trends Econometrics Model, November 2017).

Female Labour Force Participation in India

Female labour force participation (FLFP) in India has been a topic of considerable research and policy discussion due to its significance for gender equality and economic development. Despite advancements in various sectors, FLFP rates in India have remained relatively low compared to

global standards (Chatterjee, 2019). National Sample Survey Office (NSSO) underlined that FLFP stood at 26.4% in urban areas and 30.6% in rural areas in 2018 (National Sample Survey Office, 2018). Several factors contribute to this low participation, including cultural norms, limited access to education and employment opportunities and inadequate support for work-life balance (Klasen & Pieters, 2015).

In recent years, there has been growing recognition of the importance of increasing FLFP for the economic growth and social development of India. Government initiatives such as the Beti Bachao Beti Padhao (Save the Daughter, Educate the Daughter) campaign and skill development programs aim to empower women and enhance their participation in the labour force (Government of India, 2015). However, challenges such as gender-based discrimination, lack of affordable childcare facilities, and the persistence of patriarchal attitudes continue to hinder women's full integration into the workforce (Desai & Joshi, 2019).

Addressing these challenges requires a multi-faceted approach, encompassing policy reforms, social interventions and cultural change. Efforts to improve access to education, promote gender-sensitive employment policies, and enhance infrastructure for childcare can play a crucial role in increasing FLFP rates in India (Klasen & Pieters, 2015). These initiatives are aimed at challenging gender norms and fostering greater gender equality in households and workplaces, which are essential for creating an environment conducive to the participation of women in the labour force (Desai & Joshi, 2019).

Female Labour Force Participation and Gender Disparity in Kerala

Female labour force participation (FLFP) in Kerala presents a paradoxical scenario. Despite the high literacy rates and progressive social indicators of the state, it witnesses relatively low female workforce participation compared to the national average. In the Periodic Labour Force Survey (PLFS) 2019-2020, the FLFP rate in Kerala was approximately 21.9%, which is lower than the national average of 23.3% (NSO, 2020). This low participation rate is attributed to several key factors. Traditional gender roles and societal expectations often confine women to domestic responsibilities, even though they attain high educational levels (Mukhopadhyay, 2016). The economic opportunities available in Kerala heavily rely on sectors like construction and manual labour, which are typically male-dominated (Ramachandran, 2020). Gender disparity in employment is also displayed through wage gaps, job security issues, and discriminatory hiring practices, with women frequently overrepresented in the underpaid informal sector (Nair, 2021). Although Kerala has implemented numerous gender-friendly policies, their impact and effectiveness in enhancing female employment have been uneven (John, 2019).

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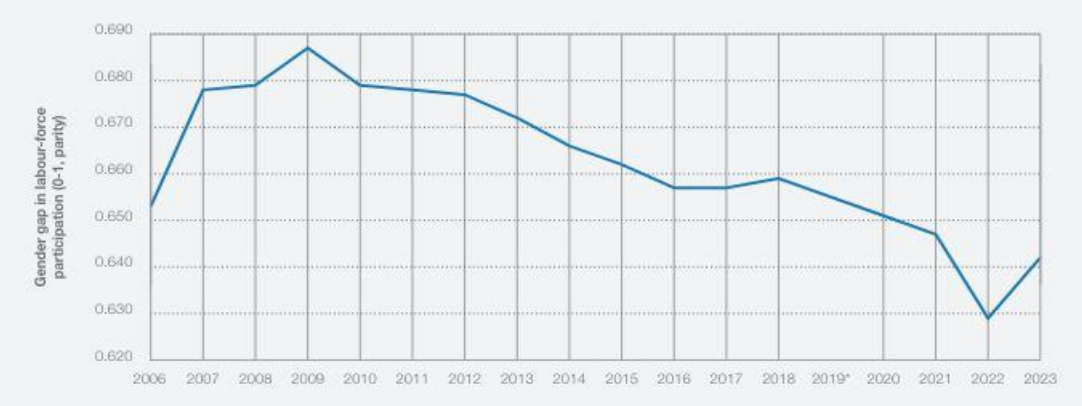
Data Analysis

Figure 1 Global Gender Gap in Labour-Force Participation (2006-2023)



Source: Global Gender Gap Report 2023, World Economic Forum

Figure 1, illustrating the Global Gender Gap in Labour-Force Participation (2006-2023) shows a clear trend of widening disparity between men and women in the workforce. The y-axis, representing the gender gap in labour force participation, ranges from 0 to 0.69, with 0 indicating parity and higher values signifying a larger gap where women participate less than men. From 2006 to 2023, the x-axis displays the years over which this trend is observed. Between 2019 and 2020, the global labour-force participation rate for women dropped by 3.4%, compared to a 2.4% decline for men. Since then, women have been re-entering the workforce at a slightly higher rate than men, leading to a modest improvement in gender parity. The parity in labour force participation increased from 63% to 64% between 2022 and 2023. Despite this progress, the recovery is incomplete and the current parity is still the second-lowest since the index's inception in 2006 and well below its peak of 69% in 2009. Addressing these underlying issues would require a multifaceted approach, including policy reforms, support for caregiving responsibilities and efforts to ensure equal representation of women in various sectors of the economy.

Table 1 Female Labour Force Participation Rate: India vs World (Age 15+)

Year	India		World		Difference = World- India
	Female Labour Force Participation Rate (%)	Annual Change (%)	Female Labour Force Participation Rate (%)	Annual Change (%)	
1991	27.78	-----	50.63	-----	22.86
1992	27.85	0.27	50.58	-0.10	22.73
1993	27.96	0.39	50.38	-0.40	22.42
1994	28.11	0.53	50.47	0.19	22.36
1995	28.49	1.37	50.45	-0.04	21.96
1996	28.89	1.37	50.42	-0.06	21.54
1997	29.28	1.38	50.47	0.09	21.19
1998	29.69	1.38	50.50	0.06	20.81
1999	30.10	1.38	50.65	0.30	20.55

2000	30.52	1.39	50.64	-0.02	20.12
2001	30.42	-0.30	50.39	-0.49	19.97
2002	30.34	-0.28	50.16	-0.46	19.82
2003	30.26	-0.25	50.01	-0.29	19.75
2004	30.20	-0.22	49.87	-0.29	19.67
2005	30.14	-0.20	49.81	-0.12	19.67
2006	29.86	-0.91	49.65	-0.32	19.79
2007	29.59	-0.92	49.59	-0.12	20.00
2008	29.32	-0.92	49.34	-0.50	20.03
2009	29.05	-0.92	49.17	-0.35	20.13
2010	28.78	-0.93	48.84	-0.68	20.06
2011	27.92	-2.97	48.64	-0.39	20.73
2012	27.08	-3.02	48.46	-0.38	21.38
2013	27.06	-0.05	48.31	-0.32	21.25
2014	27.03	-0.11	48.20	-0.21	21.17
2015	26.97	-0.23	48.19	-0.03	21.22
2016	26.89	-0.30	48.14	-0.09	21.25
2017	26.76	-0.48	48.07	-0.15	21.31
2018	26.61	-0.57	47.97	-0.22	21.36
2019	26.46	-0.56	47.96	-0.02	21.50
2020	25.95	-1.95	46.75	-2.52	20.80
2021	26.73	3.03	47.51	1.63	20.78
2022	27.99	4.69	47.84	0.71	19.86
2023	32.68	16.76	48.67	1.73	16.00
Average	28.57	0.56	49.29	-0.12	20.73
SD	1.58	3.32	1.14	0.68	-0.44
CV	5.52	594.60	2.31	-563.44	-3.20

Source: Estimated from International Labour Organization. 'ILO Modelled Estimates and Projections database (ILOEST)' ILOSTAT. Accessed February 06, 2024.

Table 1 presents the Female Labour Force Participation Rate (FLFPR) for both India and the world, providing a comparative analysis of participation trends over the years. The data sourced from the International Labour Organization (ILO), offers insights into the evolving dynamics of female labour force participation on a global scale. Throughout the years covered in the table, there is a noticeable disparity between India and the world in terms of FLFPR. In 1991, India's FLFPR stood at 27.78%, considerably lower than the global rate of 50.63%. This trend continues over subsequent years, with India consistently lagging behind the world average. However, it is essential to note that while the FLFPR of India remains lower, it demonstrates an upward trajectory over the years, with a notable increase observed particularly from 2021 to 2023. While the global FLFPR shows minor fluctuations, India's FLFPR exhibits more significant variations, both positive and negative. India witnessed a substantial increase in FLFPR from 2021 to 2023, indicating a remarkable surge in female labour force participation during this period. The

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difference between the world and India's FLFPR highlights the gap in female labour force participation rates between India and the rest of the world.

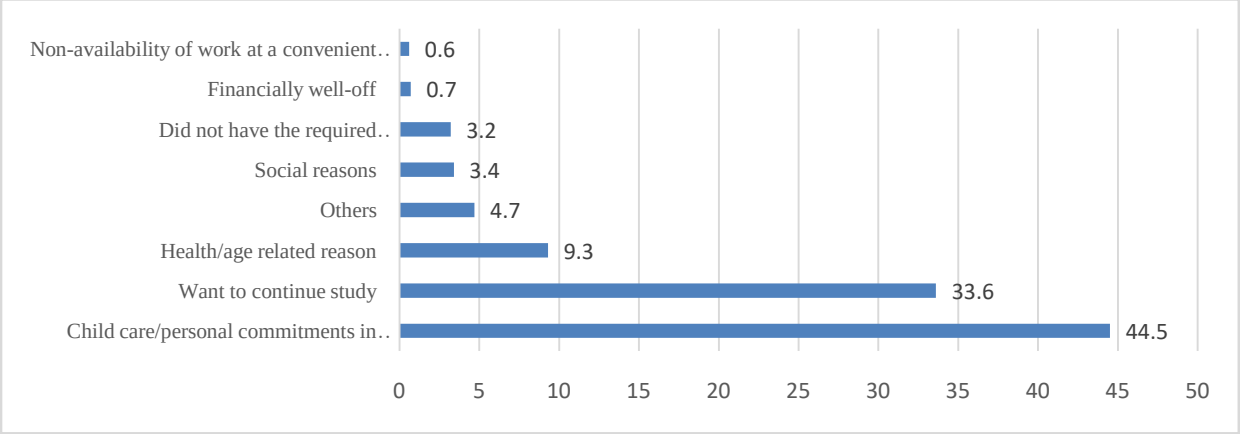
Table 2 Workforce Participation Trends in India by Gender (2000-2020)

Year	Rural		Urban	
	Male	Female	Male	Female
2000/01	54.4	28.7	53.1	14.0
2002/03	54.6	28.1	53.4	14.0
2005/06	54.9	31.0	54.0	14.3
2007/08	54.8	28.9	55.4	13.8
2011/12	54.3	24.8	54.6	14.7
2019/20	56.3	24.7	57.8	18.5

Source: Census of India, 2011, PLFS 2019-20.

Table 2 presents the trend in workforce participation rates between genders in India across rural and urban areas from 2000-01 to 2019-20. The workforce participation rate for males has shown a slight increase in rural areas over the years, rising from 54.4% in 2000-01 to 56.3% in 2019-20. Female participation rates have remained relatively stagnant, with only a marginal decrease from 28.7% in 2000-01 to 24.7% in 2019-20. In urban areas, both male and female workforce participation rates have demonstrated an upward trend. Male participation increased from 53.1% in 2000-01 to 57.8% in 2019-20, while female participation rose from 14.0% to 18.5% during the same period. The given table highlights the gender disparity in workforce participation rates in both rural and urban India, with males consistently displaying higher participation rates compared to females. While there has been some improvement in female participation rates, particularly in urban areas, addressing the underlying factors contributing to gender disparities remains a crucial challenge for promoting inclusive economic growth and gender equality in India.

Figure 2: Reasons for Non-participation of Females in the Labour Force (%).



Source: Annual PLFS Report, MoSPI, 2021-22

Figure 2 illustrates the primary reasons reported by females for not being in the labour force. The data reveals that the most commonly cited reason is child care and personal commitments related to homemaking, accounting for 44.5% of responses. Following closely is the desire to continue studies, which constitutes 33.6% of reported reasons. Health or age-related concerns represent a smaller but still notable portion, at 9.3%. A further breakdown includes miscellaneous reasons, covering 4.7%, while social reasons account for 3.4%. A smaller proportion cite lack of necessary training, qualification, or age for work (3.2%), while a minority report being financially well-off (0.7%) or facing non-availability of work at a convenient location (0.6%). This underutilization of female labour results in a substantial loss of productive potential and human capital, especially among young and educated women. When women remain outside the labour market due to care giving roles or lack of accessible job opportunities, it contributes to lower female labour force participation, slower economic growth and reduced household income diversification. The persistence of such non-market roles reinforces gender-based occupational segregation and widens the gender earnings gap. It ultimately hinders the achievement of inclusive and sustainable development.

Table 3 Gender Wage Disparity in India

Period	**Average Gap in Monthly Wage/Salary (in Rs) in CWS**		**Daily Average Earnings Gap (in Rs) for Casual Labour in Non-Public Work**	
	Rural	Urban	Rural	Urban
July- Sept, 2021	3870	4477	120	133
Oct-Dec, 2021	6202	4640	126	144
Jan-Mar, 2022	6254	4746	134	148
Apr-Jun, 2022	6288	4868	128	150

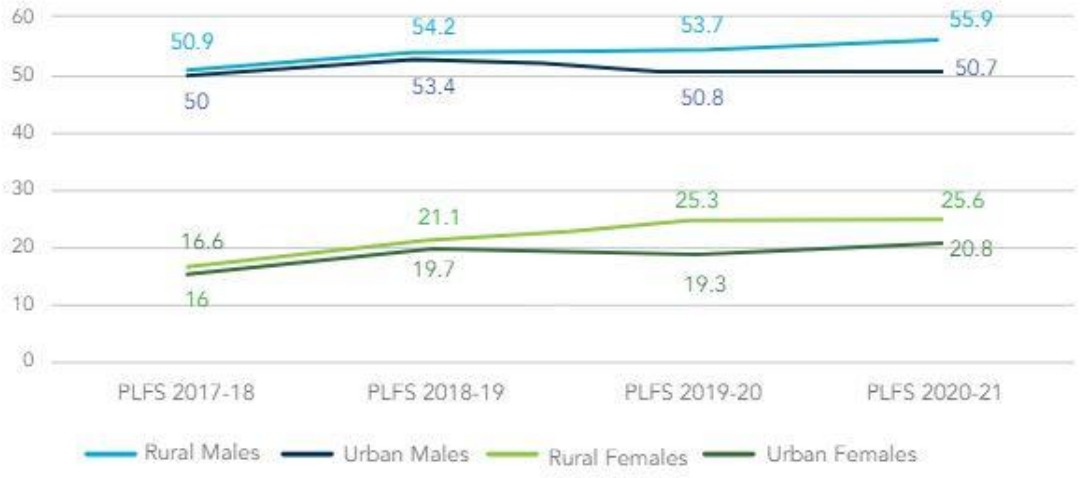
Source: PLFS, MoSPI (2021-22)

Table 3 presents data on gender wage disparity in India, focusing on two distinct categories of workers: regular wage/salaried employees and casual labour engaged in work other than public works. The disparities are measured in terms of the average gap in monthly wage/salary earnings for regular wage/salaried employees and the average gap in earnings per day for casual labourers. The data is further divided into rural and urban regions for each period. For regular wage/salaried employees, the average gap in monthly wage/salary earnings between genders is provided. This wage gap ranges from Rs 3870 to Rs 6288 in rural areas across different periods, while in urban areas; it ranges from Rs 4477 to Rs 4868. These figures indicate a consistent disparity in monthly earnings between male and female employees, with urban areas generally exhibiting slightly higher wage gaps compared to rural areas. In rural regions, this gap ranges from Rs 120 to Rs 134, while in urban areas; it ranges from Rs 133 to Rs 150. These figures illustrate a persistent gap in daily earnings between male and female casual labourers, with urban areas showing slightly wider disparities than rural areas. The data underscores the existence of gender wage disparities in India across different sectors and regions. Addressing these disparities is crucial for promoting gender equality and ensuring fair and equitable compensation for all workers. When women consistently earn less than men for similar work, it directly impacts household income and economic security, especially in rural areas where the earnings of women

often play a vital role in sustaining families. This wage inequality restricts the full financial contribution that women can make to their households and the broader economy.

Despite strides in economic development and social progress, gender disparities persist in various aspects of labour force participation, perpetuating inequities in opportunities and outcomes. The data presented emphasises the need for concerted efforts to address these disparities comprehensively. The analysis exposes the persistently lower participation rates of women in the labour force compared to men, highlighting barriers such as cultural norms, limited access to education and training and unequal distribution of domestic responsibilities. These barriers contribute to the underrepresentation of women in certain industries and sectors, constraining their economic empowerment and potential for socio-economic advancement. The data reveals the existence of gender wage disparities, with women consistently earning lower wages than their male counterparts across different employment categories and geographic regions. These disparities reflect deeper structural inequalities in the labour market, including discriminatory practices, occupational segregation, and limited opportunities for career advancement for women. The findings of the study reveal the relationship of socio-economic factors influencing female labour force participation, comprising childcare responsibilities, educational aspirations, health considerations, and access to suitable employment opportunities. India can harness the full potential of its female workforce, driving inclusive growth and sustainable development by adopting and enabling an environment that values and supports the economic participation of women.

Figure 3: Workforce Participation Rate in Kerala



Source: Periodic Labour Force Survey (PLFS) 2017-18, PLFS 2018-19, PLFS 2019-20, and PLFS 2020-21, National Sample Survey Organisation (NSSO), Ministry of Statistics and Programme Implementation (MoSPI), Government of India (GoI). The WPR figures are calculated for males and females of all age groups.

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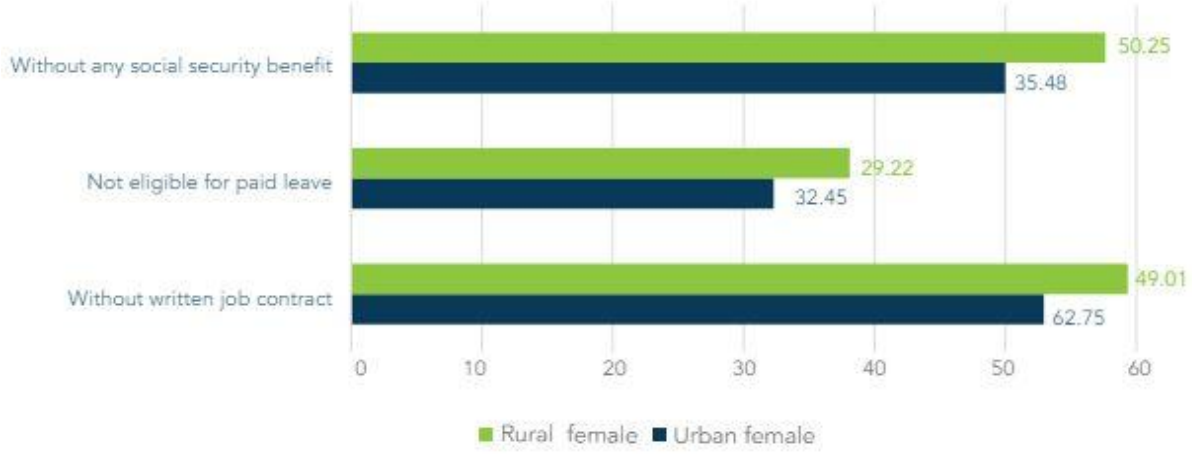
The Workforce Participation Rate in the fiscal year 2020-21 in rural Kerala stood at 25.6 per cent, indicating a slight deviation of 1.5 percentage points below the national average. The scenario contrasts in urban areas, where the WPR surpassed national figures by 3.8 percentage points. There has been a notable divergence in the pace of Female Workforce Participation Rate (FWPR) growth between rural and urban regions. Over the span from 2017-18 to 2020-21, the FWPR surged more rapidly in rural areas, ascending from 16.6 per cent to 25.6 per cent. Urban areas witnessed a more modest rise, with FWPR increasing from 16 per cent to 20.8 per cent during the same time frame. There has been a marginal reduction of 4.4 percentage points in the male-female gap in workforce participation across both rural and urban regions throughout the reference period.

Figure 4 Work Condition in Regular Employment among Females



Source: Estimated From PLFS 2020-21

Figure 4 displays a significant presence of regular-wage women employees in urban regions of Kerala. A closer examination of female working conditions reveals the vulnerable position of the female workforce. The Periodic Labour Force Survey (PLFS) 2020-21discloses that half of the urban women lack any social security benefits and written job contracts, while approximately 32.2 per cent are ineligible for paid leave. In rural areas, 59.3 per cent of women lack written job contracts, 57.6 per cent lack social security benefits, and 38.1 per cent are not eligible for paid leave. These statistics are lower than the national average. The results highlight a risky employment scenario for women in both rural and urban Kerala, with a significant lack of social security, written contracts and paid leave. This vulnerability limits income stability, job security and bargaining power of female workers. It ultimately reduces the economic agency and participation of women. It also reflects structural labour market inequalities faced by the state.

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Table 4 LFPR for Age 15 & above (US), 2017-18 to 2020-21: India vs Kerala

			2017-18	2018-19	2019-20	2020-21
Rural	India	Male	76.4	76.4	77.9	78.1
		Female	24.6	26.4	33.0	36.5
		Overall	50.7	50.5	55.5	57.0
	Kerala	Male	71.1	71.0	73.6	75.7
		Female	25.9	31.3	35.1	35.4
		Overall	46.6	49.7	52.8	53.9
Urban	India	Male	74.5	73.7	74.6	74.6
		Female	20.4	20.4	23.3	23.2
		Overall	47.6	47.5	49.3	49.1
	Kerala	Male	68.9	71.4	69.8	68.5
		Female	27.3	29.7	28.6	30.6
		Overall	46.4	48.8	47.7	48.4
Combined	India	Male	75.8	75.5	76.8	77.0
		Female	23.3	24.5	30.0	32.5
		Overall	49.8	50.2	53.5	54.9
	Kerala	Male	70.1	71.2	71.7	72.2
		Female	26.5	30.6	31.9	33.2
		Overall	46.5	49.3	50.3	51.3

Source: PLFS Annual Reports, MoSPI (2022)

Table 4 illustrates the Labour Force Participation Rate (LFPR) for individuals aged 15 years and above across urban and rural areas in India and the state of Kerala from 2017-18 to 2020-21. Female LFPR in rural India rose from 24.6% to 36.5%, and in rural Kerala from 25.9% to 35.4%. It indicates increased female labour participation. Similarly, urban female LFPR in Kerala also improved from 27.3% to 30.6%, while the national urban rate remained around 23.2%. Though the overall LFPR in Kerala is lower than the national average (51.3% vs. 54.9% in 2020-21), both show upward trends. The rising LFPR among women, especially in rural Kerala, indicates growing female economic engagement, which can enhance household incomes and regional development. However, persistent gender gaps highlight the need for inclusive labour policies.

Table 5 presents the Labour Force Participation Rate (LFPR) for individuals aged 15 years and above across rural and urban areas in India and Kerala from 2017-18 to 2020-21. Male LFPR rose steadily from 72.0% to 75.1% in rural India, while female LFPR showed a significant increase from 23.7% to 35.8%, narrowing the gender gap. Kerala also witnessed a rise in rural female LFPR from 20.8% to 30.7%. It reflects an encouraging trend in the economic engagement of women. In urban India, female LFPR remained relatively stagnant, around 21%, compared to Kerala's modest improvement from 19.8% to 25.3%. Combined data indicates that the female LFPR of India rose from 22.0% to 31.4%, while Kerala's increased from 20.4% to 28.2%. Despite these improvements, Kerala continues to exhibit a lower overall LFPR than the national average, especially among males. The rising LFPR for women, especially in rural areas, suggests

increasing female participation in productive work, possibly contributing to household income and economic growth.

Table 5 WPR for Age 15 & above (US), 2017-18 to 2020-21: India vs Kerala

			2017-18	2018-19	2019-20	2020-21
Rural	India	Male	72.0	72.2	74.4	75.1
		Female	23.7	25.5	32.2	35.8
		Overall	48.1	48.9	53.3	55.5
	Kerala	Male	67.0	67.6	68.2	70.8
		Female	20.8	26.4	30.3	30.7
		Overall	41.9	45.5	47.7	49.1
Urban	India	Male	69.3	68.6	69.9	70.0
		Female	18.2	18.4	21.3	21.2
		Overall	43.9	43.9	45.8	45.8
	Kerala	Male	64.4	67.7	64.7	62.5
		Female	19.8	24.1	23.8	25.3
		Overall	40.2	44.1	42.7	42.8
Combined	India	Male	71.2	71.0	73.0	73.5
		Female	22.0	23.3	28.7	31.4
		Overall	46.8	47.3	50.9	52.6
	Kerala	Male	65.8	67.7	66.5	66.8
		Female	20.4	25.3	27.1	28.2
		Overall	41.2	44.9	45.3	46.1

Source: PLFS Annual Reports, MoSPI (2022)

Findings

1. In the 2023, the global female work participation rate was 39.9%.
2. In Kerala, female unemployment remains alarmingly high, 13.4% in rural and 17.4% in urban areas in 2020-21, compared to the national averages of 2.1% (rural) and 8.6% (urban).
3. Continuous high female unemployment in Kerala signals underutilisation of human capital, lost productivity and reduced household income potential.
4. The female LFPR of India rose from 22.0% to 31.4%, while Kerala's increased from 20.4% to 28.2% (2017-18 to 2020-21)
5. Female LFPR in rural India rose from 24.6% to 36.5%, and in rural Kerala from 25.9% to 35.4%. It indicates increased female labour participation. Similarly, urban female LFPR in Kerala also improved from 27.3% to 30.6%, while the national urban rate remained around 23.2%.
6. The findings of the study reveal the relationship of socio-economic factors influencing female labour force participation, comprising childcare responsibilities, educational aspirations, health considerations, and access to suitable employment opportunities.

7. This wage gap ranges from Rs 3870 to Rs 6288 in rural areas across different periods, while in urban areas; it ranges from Rs 4477 to Rs 4868, in India.

Suggestion

1. Addressing gendered employment barriers is essential for inclusive growth and optimal labour market efficiency.
2. Uniform wage for same job must strictly implement within formal and informal sector.
3. More awareness , women friendly atmosphere should provide in the work place
4. More skill orientation and education should be encouraged for girls.
5. The lower LFPR and high female unemployment rate of Kerala signal structural barriers to job creation and labour market access. It emphasises the need for inclusive employment policies and gender-sensitive skill development initiatives.

CONCLUSION

The international scenario of female labour force participation highlights global trends, including disparities in participation rates between genders and varying patterns across different regions and income levels. Despite progress in some areas, persistent gender gaps highlight the need for continued efforts to promote gender equality in the workforce on a global scale. Transitioning to the Indian context, an analysis of female labour force participation reveals nuances of various socioeconomic factors, cultural norms and policy frameworks. India has witnessed improvements in female workforce participation over the years, at the same time women face higher unemployment rates and limited access to quality employment opportunities compared to men. Regional disparities within India, such as those observed in Kerala, further underline the need for targeted interventions to address gender disparities at the state level. The examination of female labour force participation in Kerala provides a key takeaway into the challenges and opportunities faced by women in a specific regional context. Despite Kerala's reputation for high human development indicators, gender disparities persist in labour force participation. While progress has been made in increasing female workforce participation, challenges such as unequal access to employment opportunities, limited job security and inadequate social protection remain.This paper stresses the importance of addressing gender disparity in work participation as a crucial component of efforts to achieve gender equality and sustainable development. It emphasises the need for comprehensive strategies that address structural barriers, promote equal access to education and training, enhance job opportunities, and create supportive work environments for women. By minimising gender disparities in work participation at the international, national and regional levels, societies can unlock the full potential of women and contribute to inclusive and equitable economic growth.

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SUSTAINABLE TOURISM IN KERALA-AN OVERVIEW

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ABSTRACT

Sustainable tourism is a major goal for places all over the world that want to find a balance between economic growth, environmental protection and cultural integrity. Kerala, a state on India's south western coast, is a great example of sustainable tourisms inceit focuses on getting people involved, encouraging responsible travel, and supporting eco-friendly projects. This article talks about the main policies and methods that have helped Kerala build a strong and long-lasting tourist business. It talks about how local communities, government backing, and new programs like the Responsible Tourism Mission can help growth that includes everyone and reduces harm to people and the environment. The essay uses what Kerala has learnt to find useful lessons and methods that can be used to improve tourism in other parts of the world. This study highlights the significance of in corporating cultural authenticity, environmental stewardship, and stakeholder collaboration to attain long-term sustainability in the tourist sector, as evidenced by Kerala's approach.

KEYWORDS: *Sustainability, Western Ghats, Ecological Fragility, Landslides, Environmental Disasters.*

INTRODUCTION

Kerala, a state in south-western India branded as "God's Own Country," is globally recognized as a successful tourism model. Its strategic development, leveraging diverse natural assets and cultural heritage, has made tourism a primary contributor to its economy. However, this rapid growth has concurrently generated significant sustainability challenges that threaten the sector's long-term viability. Located at the southern extremity of the Indian sub-continent adjoining the Arabian Sea, the state of Kerala is resplendent for her scenic splendour and cultural opulence.

The total area of the state comprises 38863 square kilometres and a coast line length of 550 Kilometers. The population of the state is 33.39 million. Kerala is known by the name 'God's Own Country' and is one of the most sought after tourist destinations in Asia. It is the only Indian state that offers all types of tourism products. Secluded beaches, palm-fringed back waters, mist clad hill stations, lush green tropical forests, water-falls, exotic wildlife, historical monuments, diverse art forms and festivals give Kerala a distinctive charm. Apart from being a tourist destination, Kerala is India's number one state with 100 percent literate people, world-class health care systems, the lowest infant mortality, the highest life expectancy rates, the highest physical quality of life and the best law and order conditions. Moderate climate and the rich art and culture are positive factors that help to foster tourism development. Kerala has not done well in agriculture and industry in the past few decades. In this context the state was

focusing on the development of the services-related industry which is now considered as the sunrise segment of the state's economy. More attention is now bestowed on tourism, information technology, health services, and education. Because of the new initiatives taken by the state as well as innovative private parties, Kerala has emerged as the most acclaimed tourist destination in the country. The origin of Kerala Tourism can be traced back to the 1950s, when the state set up a Hospitality Department. Tourism as a department came into being in the 1960s. The enormous potential of tourism in Kerala was only examined in the 7th plan. Over the last decade the growth of tourism in Kerala has been amazing. Kerala is increasingly rated as one of the 50 must see destinations of the world. Today Kerala is the most sought and trusted tourism brand in India. Indian tourism has been growing consistently for the last three decades. Kerala, because of its not odious labour militancy image, always faced problems in attracting investors.

Unlike other industries, tourism is an amalgam of various productive sectors like transportation, accommodation, catering, recreation and travel-related services. This means that development of tourism will help to generate earnings to different categories of stake holders, viz. taxi drivers, craftsmen, airline operators, tourist guides, and shopkeepers and soon. The income generated through tourism will multiply and flow down to even the lowest strata of the economy. The industry, by virtue of its employment and income-generating impact, is expected to play a Strategic role in accelerating the economic development of Kerala. Tourism is considered as a saviour to drive the state economy towards development.

Perhaps no other state in India is blessed with natural resources featuring a long coastal region, elaborate systems of waterways as that of Kerala. These unmatched rich natural resources form different unique tourism products. The name 'Kerala'means 'the land of coconuts'. Kerala enjoys a unique biological diversity in the world. The palm-fringed Arabian Sea in the west, the majestic Western Ghats in the east, with lush green paddy fields, charming backwaters, year-round colourful festival set c makes Kerala a paradise in the world. This distinctiveness target has helped Kerala to attain promising growth in many tourism products. Kerala has been recognised as one of the best tourism brands in the world. This is achieved by introducing a variety of tourism products, developing new centres of attraction and upgrading the existing major centers. Kerala tourism which attained the zenith of achievements by target-oriented planning and better marketing techniques has realised maturity.

OBJECTIVES OF THE STUDY

1.To analyse the influence of sustainable tourism in Kerala.

2.To identity challenges related to sustainable tourism in Kerala

METHODOLOGY OF THE STUDY

To understand the fact, secondary data are used for study. The secondary data are collected through various published journals, government reports, previous studies, online medias etc.

STATEMENT OF THE PROBLEM

The tourist is the central point of any tourism industry. In a highly competitive market like Kerala, a tourist destination can flourish only by delivering quality services and improving

tourist satisfaction. To improve the service quality of the farm tourism spots in Kerala, it is Important to understand the perception level of tourists towards various dimensions of service quality. This study attempts to analyse the quality of services provided by farm tourism providers in Kerala and the resulting tourist satisfaction.

SIGNIFICANCE OF THE STUDY

Sustainable tourism in Kerala is vital for balancing economic growth (~10% of GDP) with the preservation of its fragile environment, culture, and bio diversity. It empowers local communities through "Responsible Tourism" initiatives, creating jobs, protecting ecosystems, and offering

Authentic experiences, there by mitigating the negative impacts of over tourism in popular areas like backwaters and hill stations. Focuses on minimizing the ecological footprint, managing waste, and conserving natural resources. Promotes local, community-based development,

Improving living standards for residents and supporting local businesses. Protects local heritage traditions, and art forms from cultural erosion. Programs like the "Green Streets" initiative and responsible tourism projects in destinations like Vaikom demonstrate a commitment to sustainability and community involvement.

IMPORTANCE OF THE STUDY

Sustainable tourism in Kerala is vital for preserving the state's delicate ecological balance, supporting local communities through job creation, and fostering cultural preservation. It promotes responsible travel, ensures long-term economic growth by reducing environmental impact and enhances the visitor experience through authentic cultural and natural interactions. Initiatives focus on preserving the ecosystem of backwaters, forests and biodiversity, reducing pollution in sensitive areas. By creating income-generating opportunities through local handicrafts, guiding, and eco-stays, it directly benefits the local population. Tourism efforts help revive and showcase traditional art, music, and local lifestyles, ensuring they are not lost to commercialization. Kerala has been recognized globally for its RT initiatives, including the STREET project and women-inclusive enterprises, which encourage community-led development. It ensures that the natural beauty and resources of Kerala remain for future generations, preventing over-tourism.

REVIEWOFLITERATURE

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2. Rupesh kumar K, CEO, Kerala Responsible Tourism Mission Society, 2025, said the mission facilitated the economic uplift of rural communities, as many villages are now part of RT destinations.

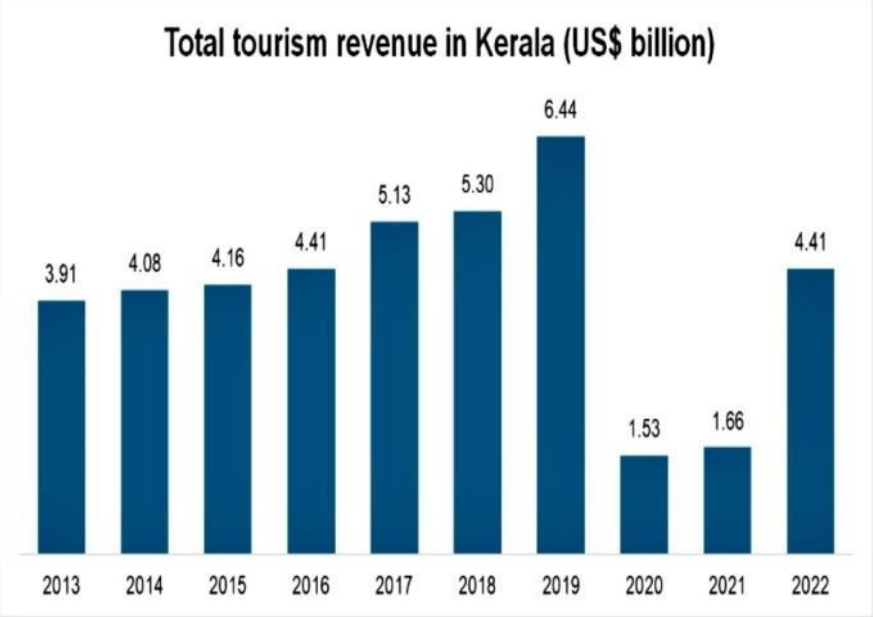
ANALYSIS OF THE STUDY

Kerala is renowned for its diverse geographical features of stunning beaches, backwaters, hill stations, forests, and wildlife, and has become one of Asia's most sought-after destinations for

tourists. Tourism forms the core of Kerala's economic progress, contributing significantly to the state's economy. Today, Kerala is identified worldwide for its tourism offerings. The sector promotes balanced and sustainable regional development by generating income through foreign exchange earnings and creating job opportunities, particularly in trade, transportation, and hospitality.

Kerala's Economy and Tourism

In 2019, 11, 89,771 foreign tourists visited Kerala. However, due to the Covid-19 pandemic, there was a decrease in foreign tourist's arrivals over the next two years. In 2022, the state received 3,45,000 foreign visitors and by June 30,2023, Kerala recorded 287,730 foreign tourists in the first six months of 2023, demonstrating a recovery in tourism. The growth rate for international tourists in Kerala has been higher than the national average. Additionally, domestic tourism recovered significantly, with 18,867,414 domestic visitors in 2022, up 150.31% from 2021 (following a 72.86% drop in 2020 from 18,384,233 domestic tourists in 2019 due to the COVID-19 pandemic).



Tourism has been top contributor to the economy of Kerala for decades. The total direct and indirect revenue has slowly progressed to reach the pre-pandemic levels, standing at Rs. 35,168.42 crore (US$ 4.41 billion) in 2022 compared to Rs.45,010.69 crore (US$ 6.44 billion) in 2019. Foreign exchange earnings stood at Rs. 2,792.42 (US$ 349.84 million) in 2022 compared to Rs.10,271.06 crore (US$1.47 billion) in 2019. Similarly, domestic tourist earnings touched Rs. 24,588.96 crore (US$ 3.08 billion) in 2022 against Rs. 24,785.62 crore (US$ 3.55billion) in 2019.Kerala state government aims to increase the contribution of tourism to GDP from 12% in 2023 to 20% by the year 2030 and to boost tourism it is implementing masterplan

Mission 2030". This initiative will focus on increasing private investment in the state and fostering partnership with private players to explore growth potential in Heli Tourism and Cruise Tourism which will add more diversity to the state tourism industry.

Drivers of tourism in Kerala

- Natural tourism- Kerala's natural attractions are the main driver of tourism into the state. Back waters, hill stations, beaches and many more are some of its scenic destinations. The state also has beautiful beaches like Kovalam and Varkala and hill stations such as Munnar and Wayanad.
- These are known to provide relaxation and adventurous experience.
- Besides, wild life sanctuaries like Periyar Tiger Reserve attract nature lovers.
- Wellness tourism-Yoga is widely practiced all over Kerala, where numerous centers offer training that promotes both physical fitness and spiritual peace. While it has gained global popularity as a form of exercise, Kerala's approach has put together traditional Ayurveda, providing a holistic experience that addresses both physical and mental well-being.
- Cultural heritage-Kerala's rich cultural heritage, exhibit traditional dance forms, festivals, handicrafts and traditional arts and unique cookery experiences, makes it an attractive tourist destination. Heritages it is such as palaces and temples further enhance its attraction.
- Government initiatives-The Kerala Tourism Development Corporation has launched several strategic marketing drives, branding the state as "God's Own Country," raisingits global visibility. Furthermore, government investments in infrastructure, for instance transportation and hospitality services, have improved accessibility and improved the overall experience for tourists in the state. Also to protect the state, the government has initiated multiple initiatives such as Green Tourism, Net Zero Carbon Efforts by2050, Sustainable Ecotourism, and Responsible Tourism Mission.
- **Industrial Development**
- In the States' Start-up Ranking by the Union Ministry of Commerce and Industry 2022 Kerala was awarded the best performer, specifically standing out in the micro, small, and medium enterprises (MSME) sector. The state witnessed the successful launch of 100,000 new businesses within just the first eight months of 2022–23. This initiative continued into 2023–24, resulting in the launch of 214,564 enterprises with an investment of Rs. 13,474.52 crore (US$ 1.63 billion). This significant growth in the MSME sector has created 456,913 jobs across the state.
- Kerala Share of agriculture and allied sectors in GSVA stood at 8.52% in the year 2022-23 (QE) while the construction and manufacturing contributed 13.7% and 13.0% to the total GSVA in 2022-23 (QE), respectively, providing state with more diversified source of revenue and its growth.
- **Manufacturing**

From past four years Kerala's manufacturing sector has been growing constantly. As per quick estimates from the DES (Department of Economics and Statistics), the Gross State Value Added

(GSVA) for the manufacturing sector at constant prices (2011–12) rose 8.9% in 2022–23 compared to the previous year. GSVA from manufacturing increased to Rs. 69,226.37 crore (US$ 8.81 billion) in 2022–23 from Rs. 36,680.87 crore (US$ 4.67 billion) in 2013–14, contributing 13.00% and 9.51%, respectively to Kerala's GSVA at constant and current prices.

- **Fisheries**

Kerala has a demographic advantage in fisheries. With a coastline of 590 kilometres and a continental shelf of 39,139 square kilometres, it is in one of the most productive regions of the Arabian Sea. The state's inland fish production stood at 2.29 lakh metric tons, and marine fish production at 6.90 lakh metrictons in 2022–23. In 2021–22, it stood at 2.25 lakh metrictons of in land fish production and 6.01 lakh metric tons of marine production.

- **MSME**

As per the MSME Annual Report 2022–23, 5.62% to the total MSME enterprises operating in India are from Kerala. It ranked 12th in the number of MSME business in India. The state is renowned for its unique combination of traditional and modern industries, surrounded by sectors like agriculture, tourism, IT, and healthcare.

- **Agriculture**

The agricultural sector in Kerala is estimated to contribute 11% to the economy in 2022–23. Its fertile land provides a wide range of crops, providing sufficient opportunities to value addition. Coconut, the most cultivated crop in Kerala, is cultivated over 781,000 hectares and yields 5,384 million nuts. Also, Kerala is famous for its 'Nendran' banana variety, grown on 57,000 hectares, with a production of 489,000 metric tons.

- **Information Technology**

The IT sector in Kerala plays a vital role in the state's development. The government has drawn its attention towards providing the best infrastructure and enhance digital capabilities, which lead to successful e-Governance initiatives and IT projects. With a skilled workforce, favourable policies and affordable operational costs, Kerala has become an attractive IT hub. High mobile and broadband penetration, along with strong literacy rates, further support the state's growth in the national IT landscape.

Government Initiatives

Udyog Aadhar Memorandum (UAM):

Launched in September 2015 under Section 8 of the MSME Development Act of 2006, the UAM scheme significantly enhances the ease of doing business for MSMEs. Entrepreneurs can quickly obtain a unique Udyog Aadhaar Number (UAN) by simply submitting an online entrepreneurs' memorandum. This process relies on self-certification, eliminating the need for supporting documents.

Responsible Tourism Mission:

The Responsible Tourism concept in Kerala is built on three pillars: Economic, Socio-Cultural, and Environmental Responsibility, collectively known as the Triple Bottom Line approach. The Kerala RT Mission serves as the state's nodal agency to promote and implement Responsible Tourism initiatives. Its primary goals include leveraging tourism for local community development, poverty alleviation, and women's empowerment, while also enhancing the livelihoods of farmers and artisans and fostering social and environmental balance.

Challenges

Kerala encounters few challenges in tourism and industrial development, still these are providing the state an opportunity for growth. As Kerala is dependent on the tourism sector as a contributor to the economy the seasonality of tourism presents a unique challenge which need to resolve by diversifying attractions and create year-round offerings to attract tourist all over the year. Infrastructure limitations underscore the necessity for investment in enhanced transportation and ac commodation facilities and environmental concerns can inspire sustainable practices, boosting the state's appeal to eco-conscious travellers. In the industrial sector, low productivity and land scarcity highlight opportunities for innovation and modernization. By strategically addressing these challenges, Kerala can not only enhance its competitiveness but also foster sustainable economic growth. Recent issues in Kerala's sustainable tourism include severe environmental degradation from over tourism in Munnarand Kovalam, critical pollution of backwaters by houseboats, and increased landslide risks in the Western Ghats due to infrastructure expansion. Key challenges also involve, in adequate waste management and the commercialization of eco-tourism, which threatens ecological balance.

Major Sustainable Tourism Challenges in Kerala:

Environmental Degradation and Pollution: The back waters, particularly Vembanad Lake, are suffering from pollution due to untreated waste disposal from thousands of houseboats, fuel leaks and chemical run off. Over tourism and Infrastructure Strain: Popular spots like Munnar face overcrowding, leading to strained infrastructure, rising waste and commodification of local culture. Land Use and Natural Disaster Risks: Unregulated construction of resorts and infrastructure in the Western Ghats (Wayanad/Idukki) has significantly increased vulnerability to landslides and soil erosion. Waste Issues: In adequate disposal systems are causing hygiene issues and environmental damage, particularly in tourist-heavy destinations.

Social and Economic

Impact: Rapid, uncontrolled growth has led to the gentrification of areas, rising costs of living and sometimes minimal, inequitable involvement of local communities in the financial benefits. Kerala's rich tourism sector and succeeding industries play an important part in its economy. With growing tourist arrivals and revenue generation, tourism continues to beakey driver of Kerala's economic landscape, promoting job creation and supporting various sectors. Moreover, Kerala government focus on the environmental practices and responsible tourism initiatives preserves that economic growth does not come at the expense of the environment. The government's active approach to industrial development, particularly in the MSME sector and

IT, improves the state's economic strength and competitiveness by expanding attractions, investing in infrastructure and embracing innovation, Kerala cannot only improveits position as a premier tourist destination but also edge the way for sustainable economic growth. Kerala's Tourism Sector Receives a Significant Budget Increase. The Kerala government has announced a 20 percent rise in the tourism department's budget, signaling strong commitment to enhance the state's attractiveness as a tourism destination. This boost is part of an ambitious plan aimed at elevating Kerala's profile not only domestically but globally through targeted tourism initiatives. Focus Areas: Health Tourism and Pilgrimage. Key areas receiving special attention include health tourism and the enhancement of pilgrimage routes. Kerala intends to firmly establish itself as a hub for health-conscious travelers by improving related infrastructure and services. On the pilgrimage front, a dedicated investment of INR 250 crore has been made to maintain and improve road connectivity to the popular Sabarimala pilgrimage site during each season, ensuring smoother and safer travel for devotees. New Tourism Opportunities on the Horizon. The state is keen to explore emerging opportunities such as cruise tourism and the development of international convention centers in key tourist destinations. These initiatives are expected to diversify Kerala's tourism offerings and attract a broader spectrum of visitors. Supporting Infrastructure and Innovation in the Tourism Sector Among new initiatives,

Kerala is moving forward with a startup-model financial assistance program aimed at hotel projects with investments upto INR 50 crore. This strategic financial backing encourages private sector participation and helps modernize accommodation facilities. The tourism sector is also embracing artificial intelligence (AI) as a tool to innovate and improve services. Recognizing the impact of AI on everyday life and the workforce, the sector is focusing on skills less likely to be replaced by automation, such as art and cooking, which are integral to the cultural tourism experience. Vision 2031: A Roadmap toward Sustainable and Year-Round Tourism. The state's long-term plan, Vision 2031, emphasizes environmentally friendly and sustainable tourism practices. Its objective is to provide infrastructure that supports year-round tourism while balancing ecological concerns and local community involvement. Tourism destination spoised to reach capacity in the next five years will be upgraded to meet international standards, with the assistance of technology like AI to enhance the visitor experience and operational efficiency.

Economic and Social Benefits: Strengthening Local Communities

The expansion of Kerala's tourism sector is designed not only to increase visitor numbers but Emphasis on making every local resident a passionate ambassador of the state's cultural and natural attractions.

Key Investment Areas at a Glance

Area	Investment Focus	Expected Outcome
Health Tourism	Medical facilities, wellness centers	Position Kerala as a health tourism leader
Pilgrimage Tourism	Road maintenance for pilgrimage routes	Improved accessibility, safety for pilgrims
Cruise Tourism	Develop cruise facilities and marketing	Attract international cruise visitors
Hotel Projects	Startup-model financial assistance	Modernize accommodation; private sector growth
Technology Integration	Artificial Intelligence adoption	Enhance service quality and operational efficiency

Kerala Tourism: Leading the Way in Sustainable Development. The emphasis on sustainability forms the backbone of Kerala's tourism planning. By promoting eco-friendly tourism and Supporting the local communities, the Vision 2031 policy hopes to balance growth with Responsible stewardship of the environment. This modern approach ensures that the natural Beauty and cultural heritage, the pillars of Kerala's tourism, are preserved for future generations.

CONCLUSION

Kerala's strategic increase in tourism budget and thoughtful Vision 2031 plan signify the state's determination to boost its tourism profile with sustainability, health, and cultural tourism as

Corner stone's. Significant investments in infrastructure, technology and community engagement set a firm foundation for transforming Kerala into a globally recognized destination for year-round visitors. With a focus on diversifying tourism types, improving local employment, and embracing modern trends such as AI, Kerala is paving the way for a robust, forward-looking tourism industry that benefits both visitors and residents alike. Even with the best reviews and thorough planning; nothing quite matches the insight gained from first-hand experience.

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Although the immediate global impact of Kerala's expanded tourism plan might be modest, it's an important development locally and regionally. At Get Transfer, staying up-to-date one evolving travel landscapes helps us deliver top-notch transfer services that keep pace with the dynamic travel world. Start planning your next adventure and secure your worldwide transfer with Get Transfer.

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FINANCIAL LITERACY IN KERALA: ACRITICAL REVIEW OF EVIDENCE, DETERMINANTS AND IMPLICATIONS FOR ECONOMIC REVITALIZATION

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ABSTRACT

Kerala's development trajectory presents a paradox: high human development indicators coexist with structural economic challenges including remittance dependence, household in debtedness (29.9% of adults), and the highest youth unemployment in India (29.9%). Financial literacy has emerged as a potential micro-level capability influencing these macroeconomic outcomes. This review critically synthesizes recent evidence (2019-2026) on financial literacy levels, determinants, and gender and digital disparities in Kerala, examining their implications for the state's economic revitalization agenda. A narrative and thematic literature review was conducted, drawing on empirical studies, policy reports, and institutional publications identified through Google Scholar, Shodhganga, ShodhKosh, RBI, NCFE, and Kudumbashree repositories. Twenty-eight sources were selected based on relevance, recency, and empirical rigor, and analyzed thematically.

Financial literacy in Kerala is characterized not by uniform deficiency but by significant heterogeneity: approximately 84% of adults demonstrate moderate literacy, 12% high literacy, and 4% illiteracy across OECD dimensions. The primary challenge is the transition from basic awareness to advanced capability in investment diversification, risk management, and long-term planning. Gender disparities are pronounced, with women exhibiting lower debt literacy but higher debt stress, while digital financial literacy lags substantially behind smartphone penetration. Strengthening financial literacy is not merely an educational objective but a strategic economic imperative for Kerala's revitalization. Policy must move from generalized awareness campaigns to targeted interventions addressing specific capability gaps across population segments, with systematic measurement of behavioral and economic outcomes.

KEYWORDS: *Financial Literacy, Kerala Economy, Gender Gap, Digital Finance, Economic Revitalization, Remittances, Household Debt.*

INTRODUCTION

Kerala's Development Paradox and Economic Challenges

Kerala's development trajectory presents as triking paradox. The state consistently ranks among the highest in India on human development indicators, including education, health outcomes, and social welfare, with a general literacy rate of approximately 94-96%. However, this impressive social progress has not fully translated into robust economic resilience or financial capability at the household level.

The state's growth model has historically relied heavily on remittances from migrant workers, particularly in Gulf economies, with recent estimates indicating remittances account for approximately 10-15% of Gross State Domestic Product (Rajan & Zachariah, 2023; Reserve Bank of India, 2024). This dependence makes household incomes and consumption patterns vulnerable to global slowdowns, migration shocks and shifts toward permanent migration to Western countries. At the same time, household indebtedness remains elevated, with approximately 29.9% of adults indebted—the third highest among major states compared to the national average of 14.7% (National Statistical Office, 2025). Savings are often concentrated in non-productive assets such as real estate and gold rather than entrepreneurial or industrial investments, limiting productive capital formation.

Persistent youth unemployment, at 29.9% for ages 15-29—the highest in India, with stark gender disparity (females 47.1%, males 19.3%)—a significant informal sector, and a widening digital divide further constrain inclusive opportunities (Periodic Labour Force Survey, 2024). Additional pressures stem from demographic ageing—Kerala has the highest proportion of elderly population in India at approximately 18.2-18.7% aged 60+, projected to reach 22.8% by 2036 (Reserve Bank of India, 2025)—climate and coastal vulnerabilities affecting livelihoods, and fiscal pressures including absolute public debt exceeding ₹3.10 lakh crore despite a declining debt-to-GSDP ratio of 24.83% in 2024-25 (Government of Kerala, 2025).

These interrelated challenges underscore the need for a structural shift from a consumption- and remittance-driven economy toward an investment- and entrepreneurship-led growth model. Revitalizing the economy therefore requires strengthening micro-level financial capabilities that shape household decision-making, resource allocation, and productive participation.

Financial Literacy as the Focal Issue

Within this context, financial literacy emerges as a critical yet under-addressed factor influencing Kerala's economic challenges. Defined by the Organisation for Economic Co-operation and Development (OECD) as a combination of awareness, knowledge, skills, attitudes, and behaviors necessary to make sound financial decisions and achieve individual financial well-being, financial literacy extends beyond basic numeracy or general educational attainment (Atkinson & Messy, 2012).

Despite the state's impressive literacy rates, recent empirical evidence indicates that financial literacy remains moderate across districts, with significant gaps in advanced financial knowledge, digital financial skills and behavioral application. A 2024 multi-district survey across all 14 districts found that 84% of respondent’s demonstrated moderate financial literacy,

only 12% exhibited high literacy, and 4% were illiterate across OECD dimensions (Joseph & Devassy, 2025).

Understanding of compound interest, risk diversification and long-term planning remained limited even among formally educated individuals.

This disparity contributes to observable economic patterns: poor debt management (particularly among women and informal workers, leading to heightened stress), suboptimal savings allocation (funds concentrated in low-productivity assets), restricted participation in digital financial ecosystems (despite high smartphone penetration), and limited entrepreneurial success in micro and small enterprises, including community-based initiatives.

Rationale and Significance for Revitalizing the Economy

Strengthening financial literacy is increasingly relevant to Kerala's economic revitalization agenda. The path way from individual capability to macroeconomic outcomes operates through multiple channels: transforming remittances and savings into productive investments; enhancing micro, small, and medium enterprise (MSME) resilience via better credit access and planning; and enabling digital economy participation amid fintech expansion.

Empirical evidence from Kerala supports this: financial literacy directly affects business performance among MUDRA scheme beneficiaries, with financial inclusion mediating this relationship (Financial Literacy Meets Inclusion, 2025); correlates with long-term security among rural cashew workers (Umaprabha, 2025); and predicts savings and spending behavior among daily wage earners (Santhosh Kumar, 2025). Targeted interventions—community education, digital inclusion initiatives such as Digital Sakhi and institutional collaboration through Kudumbashree and RBI/SCERT programs—could promote inclusive growth, household stability, and resilience against structural shocks.

Research Gap

Although literature on financial literacy in Kerala is growing, limitations persist that this review addresses. Studies are predominantly cross-sectional and localized, focusing on specific districts or population groups such as rural women in Malappuram or daily wage earners in Kottayam, with limited generalizability. The only multi-district effort (Joseph & Devassy, 2025; n=125) offers a broader perspective but with modest sample size. Research relies heavily on correlational analysis, with insufficient causal investigation of mechanisms linking literacy to outcomes. Recent digital finance adoption, post-pandemic shifts, and initiatives such as school curricula and library programs remain underexplored. Few studies explicitly connect household capability to macro challenges like remittance utilization, enterprise development, ordemographic and coastal vulnerabilities—limiting integration into revitalization strategies. This review synthesizes recent evidence on levels, determinants, and gender and digital disparities, and links them explicitly to Kerala's economic challenges.

Objectives

This review is guided by two primary objectives:

1. To critically synthesize recent evidence on financial literacy levels, determinants, and gender

and digital disparities in Kerala, highlighting their role as barriers to economic revitalization.

2. To examine implications for Kerala's economy, evaluate existing interventions, and identify gaps for future policy and research.

Scope and Methodology

This paper adopts a narrative and thematic literature review approach. It focuses on empirical studies, policy reports and peer-reviewed publications from 2019 to 2026, emphasizing Kerala-specific research supplemented by national evidence. Sources were identified via Google Scholar, Shodhganga, Shodh Kosh, and institutional repositories including the Reserve Bank of India, National Centre for Financial Education and Kudumbashree mission. Selection prioritized relevance, recency (2022-2026 emphasis), and empirical rigor; analysis was thematic to identify patterns, determinants, disparities, and policy implications for financial literacy and economic revitalization.

Review of Literature

Conceptual Foundations of Financial Literacy and Its Economic Relevance

Financial literacy is defined multidimensionally as the combination of financial knowledge, behavior, and attitudes enabling informed decisions (Atkinson & Messy, 2012; Joseph & Devassy, 2025). While early views emphasized knowledge—understanding of interest, inflation and diversification—contemporary approaches stress application, recognizing that knowledge alone often fails to produce prudent behavior due to attitudinal or contextual barriers (Lusardi & Mitchell, 2014).

In Kerala, this framework is particularly relevant a mid economic challenges: high remittance dependence often accompanied by suboptimal investment patterns, high household consumption relative to productive investment and a services-led economy requiring better capital allocation. Low financial literacy contributes to suboptimal savings channeling into real estate or low-yield assets rather than productive investments, limited MSME performance, and vulnerability to shocks such as migration returnees facing debt traps (Joseph & Devassy, 2025).

Digital financial literacy adds urgency to this conceptual framework. High smartphone penetration contrasts with gaps in safe digital adoption, especially among rural women and the elderly, risking exclusion from the Unified Payments Interface (UPI) and fintech-driven economic growth (Access Livelihoods, 2025). The Kerala Digital Sakhi Project exemplifies efforts to address this gap through peer-learning approaches. Enhancing literacy could boost entrepreneurial resilience, household stability, and inclusive growth—key elements of economic revitalization.

Levels of Financial Literacy in Kerala: Evidence and Trends

Recent empirical evidence reveals moderate over all literacy but persistent gaps in advanced concepts and behavior. Joseph and Devassy (2025), in a multi-district survey of 125 respondents across all 14 districts conducted from June to November 2024 using the OECD framework, found 84% moderate literacy, 12% high literacy and 4% illiteracy. This represent s an improvement over the National Centre for Financial Education's 2019 benchmark of 39%

literacy, though the comparison is complicated by different measurement frameworks—the NCFE used a narrower definition focused primarily on knowledge.

Key gaps identified include limited understanding of compound interest and risk diversification, and behavioral shortfalls in systematic budgeting and long-term financial planning (Joseph & Devassy, 2025). These gaps persist despite formal education, suggesting that general literacy does not automatically confer financial capability.

Study	Year	Sample/Focus	Literacy Levels	Key Gaps/Notable Findings
Joseph &Devassy	2025	Multi-district (125, general)	84% moderate, 12%high,4% illiterate	Compound interest, diversification, planning
Santhosh Kumar	2025	Daily wage earners (Kottayam)	Significant predictor of savings/ spending	Structural constraints limit application
Umaprabha	2025	Cashew workers(rural women)	Correlates with long-term security	Informalsecto marginalizatio
Rural women Malappuram (REST)	2024	Rural women	Moderate basic awareness	Low advanced products, cultural barrier
NCFE benchmark	2019	Statewide	39% literate	Stricter

Definition; outdated post-digital

Studies Discrepancies a cross studies stem from differing measurement frameworks (knowledge-focused versus multidimensional) and sampling strategies (general population versus vulnerable groups). Digital literacy exhibits particular gaps: rural women struggle with understanding digital security, recognizing phishing attempts, and navigating mobile banking applications despite having access to smartphones (Access Livelihoods, 2025). District-level heterogeneity is evident, with Malappuram showing moderate but shallow literacy among rural women, while emerging coastal studies (forthcoming, 2026) suggest additional local variations that statewide averages mask.

A critical limitation of this evidence base is the predominance of cross-sectional, small-sample designs. No large-scale longitudinal tracking exists to assess how financial literacy has evolved following the post-2020 digital acceleration and UPI expansion.

Determinants and Factors Influencing Financial Literacy

Education emerges consistently as the strongest predictor of financial literacy. Joseph and Devassy (2025) found that education level significantly influenced financial literacy scores across all three OECD dimensions, enhancing cognitive tools relevant to financial comprehension and exposure to financial information. However, the relationship is not deterministic—educated individuals may still lack specific financial knowledge, and some less-educated individuals achieve higher literacy through experience or targeted learning.

Age exhibits complex relationships with financial literacy. Among rural women in Malappuram, a significant relationship between age and literacy was observed, though the direction was not specified (A Study of Rural Women's Financial Literacy, 2024). This complexity likely reflects countervailing forces: older individuals have greater life experience with financial decisions but less formal education and less exposure to modern financial products, while younger individuals have more education and digital familiarity but less practical experience.

Income and occupation interact critically in shaping financial literacy. Daily wage earners face particular challenges—irregular income flows, limited engagement with formal financial institutions, and constrained opportunities for accumulating financial experience—that depress financial literacy independent of education levels (Santhosh Kumar, 2025). Similarly, cashew workers, predominantly women in the informal sector, exhibit literacy levels that reflect both limited formal education and marginal positions in financial systems (Umaprabha, 2025).

Household-level factors matter significantly. Financial decision-making power with in households, particularly for women, correlates with financial literacy.

Women who participate actively in household financial decisions demonstrate higher literacy levels, suggesting a bidirectional relationship: literacy enables decision-making participation and participation builds literacy through practice (Asok & Cox, 2024). This finding has important implications for interventions targeting women—simply providing information may be insufficient if women lack opportunities to apply that knowledge in real decisions.

Social and cultural factors constitute important determinants, particularly for women in rural areas. Studies identify social and cultural issues, including gender norms that assign financial management to men and restrict women's mobility and access to financial institutions, as significant barriers to financial literacy (A Study of Rural Women's Financial Literacy, 2024). These barriers operate both directly—by limiting women's exposure to financial information and services—and indirectly—by shaping expectations about women's financial roles and capabilities.

Institutional access matters. Proximity to bank branches, engagement with self-help groups such as Kudumbashree neighborhood groups, and participation in financial literacy programs all influence literacy levels. However, rigorous impact evaluations of institutional interventions remain limited (Kudumbashree, 2024). A critical limitation of the determinants literature is its

predominantly correlational nature; few studies employee causal designs. Additionally, intersectional factors such as migration status, caste, and coastal location remain underexplored.

Gender Differences and Vulnerable Groups in Financial Literacy

Gender disparities are pronounced and economically consequential. Asok and Cox (2024), in a study of 608 rural poor households with both male and female primary financial decision-makers, found that women report significantly higher levels of debt stress while simultaneously demonstrating lower levels of debt literacy. The pathways to debt stress differ by gender: for men, debt attitudes (general acceptability of debt, circumstantial acceptability, debt prudence) are key predictors; for women, individual-level factors such as financial decision-making power, income, and educational attainment explain more of the variation. Perhaps most concerning is evidence of intra-household spillover effects: the debt stress and debt attitudes of male decision-makers appear to influence the level of debt stress experienced by female decision-makers with in the same house hold (Asok & Cox, 2024). This finding suggests that women may bear the psychological consequences of financial decisions in which they have limited participation or understanding, highlighting the importance of financial literacy as a dimension of intra-household bargaining power and well-being.

Studies focusing specifically on rural women provide additional evidence of compounded barriers. In Malappuram district, while most rural women surveyed demonstrated moderate awareness of financial products and services, significant barrier spersisted: social and cultural norms, lack of education, income constraints, and gender discrimination were all identified as impediments to financial literacy (A Study of Rural Women's Financial Literacy, 2024). Notably, despite these barriers, penetration of basic financial products such as bank accounts, debit cards, and mobile banking was relatively high, suggesting that access alone does not guarantee literacy or effective use.

The vulnerability of specific occupational groups intersects with gender. Cashew workers, predominantly women in the informal sector, face compounded disadvantages: limited formal education, irregular employment, low wages, and constrained access to formal financial institutions. Umaprabha (2025) demonstrates strong links between financial literacy and long-term financial security among this population, with structural equation modeling confirming that financial literacy significantly predicts financial independence and sustainable development outcomes.

Digital financial literacy introduces new dimensions of gender disparity. Women in rural areas face particular challenges in adopting digital financial services, including lower digital literacy, limited access to smartphones, concerns about digital security, and social norms that may restrict technology use (Access Livelihoods, 2025). The Kerala Digital Sakhi Project, which trains women as digital literacy educators and entrepreneurs, represents an innovative response recognizing that peer learning and community-based approaches may be more effective than top-down training programs.

The implications of these gender differences extend beyond individual women to households and communities. Women's financial literacy correlates with children's educational outcomes, household health expenditures, and family nutrition—the well-documented phenomenon of

women prioritizing family welfare in financial decisions (Asok & Cox, 2024). Enhancing women's financial literacy thus generates multiplier effects that contribute to human capital development and intergenerational poverty reduction. A critical limitation of this literature is the exploratory or working-paper status of some key studies (e.g., Asok & Cox, 2024) and limited gender disaggregation in some occupational studies (e.g., Santhosh Kumar, 2025).

Methodology

Review Type and Rationale

This paper adopts a narrative and thematic literature review approach. Unlike systematic reviews requiring rigid protocols such as PRISMA 2020, a narrative review is more suitable for synthesizing diverse, heterogeneous literature on financial literacy in Kerala. Existing studies feature small samples, varied methodologies, localized foci and emerging themes including digital adoption and post-pandemic shifts, making full systematic approaches impractical and overly restrictive. The thematic narrative method allows flexible integration of empirical, policy, and institutional sources for comprehensive insights into patterns, determinants, and economic implications, aligning with the objectives of evidence synthesis and gap identification.

Search Strategy

Searches were conducted across multiple databases and repositories: Google Scholar, Shodhganga (Indian theses), Research Gate, Reserve Bank of India publications, National Centre for Financial Education reports, Kudumbashree official sites, and JSTOR and Scopus where accessible. Keywords combined Boolean operators: ("financial literacy" OR "financial knowledge" OR "financial capability") AND ("Kerala" OR "Kerala economy") AND ("determinants" OR "gender" OR "digital" OR "inclusion" OR "remittances" OR "household debt"). Date filter: 2019–2026 to prioritize recent digital and post-pandemic developments. The last search was conducted in February 2026. Snow balling from reference lists and forward citation tracking supplemented database searches, along with grey literature from direct site searches for RBI Economic Reviews 2025 and Kudumbashree progress reports. Approximate initial hits numbered 650 across sources.

Inclusion and Exclusion Criteria

Inclusion criteria comprised: peer-reviewed articles, doctoral theses, and policy reports; empirical or policy-oriented studies on financial literacy with Kerala focus or substantial Kerala-relevant content; publication period 2019–2026. Exclusion criteria comprised: publications prior to 2019 unless foundational to the field; non-empirical opinion pieces or editorials; studies unrelated to India or Kerala context; non-credible sources such as blogs without data support. Quality was considered informally, with preference for studies with sample sizes exceeding 30 and methodological transparency. Final selection included 28 sources, prioritizing Kerala-specific research.

Screening and Selection Process

A multi-stage screening process was employed: title and abstract screening for relevance to financial literacy in Kerala; full-text review against study objectives (levels, determinants,

gender and digital dimensions, economic implications); final inclusion based on thematic alignment and methodological rigor.

Data Extraction and Synthesis Approach

Extracted data elements included: author and year of publication; study objectives; sample characteristics and methodology; key findings; limitations noted by authors. Thematic synthesis organized extracted data into analytical categories: levels and trends in financial literacy; determinants and influencing factors; gender differences and vulnerable groups; economic implications and policy interventions. Critical appraisal assessed sample representativeness, methodological limitations (cross-sectional design, small sample size, correlational bias), and relevance to the Kerala context. No meta-analysis was attempted due to methodological heterogeneity across studies.

Limitations of the Approach

As a narrative review, potential selection bias exists despite application of structured criteria. Reliance on secondary data limits capacity for causal inference Methodological variability across included studies challenges direct comparison of findings. However, the thematic focus provides contextual, policy-relevant synthesis tailored to Kerala's revitalization challenges. The review may also be limited by language bias, as Malayalam-language sources were not systematically searched.

Discussion

Revisiting the Financial Literacy Paradox in Kerala

The evidence synthesized in this review points to a clear developmental paradox: Kerala's exceptionally high general literacy and human development indicators have not produced comm. ensurate levels of financial capability. This disconnect is not primarily a failure of the state's education system but reflects the distinct developmental pathways of general literacy—acquired through formal schooling—versus financial literacy—shaped by household financial exposure, occupational experience, institutional access, and policy attention. Financial literacy has only recently become a policy priority in India, and Kerala's institutional infrastructure for building it remains limited relative to the state's social welfare investments.

The pattern is not uniform mediocrity but significant heterogeneity across population segments and literacy dimensions. The multi-district survey showing 84% moderate, 12% high, and 4% illiterate literacy (Joseph & Devassy, 2025) indicates that the core challenge is the transition from basic awareness to advanced behavioral and strategic capability rather than widespread financial illiteracy. This distinction is policy-critical: generalized awareness campaigns are likely insufficient for populations already possessing foundational knowledge but lacking sophistication in investment, risk management, and long-term planning.

Reconciling Contradictory Evidence

The literature contains several tensions that must be confronted. Literacy levels vary markedly across groups: rural women in Malappuram show moderate product awareness but shallow understanding (A Study of Rural Women's Financial Literacy, 2024), while daily wage earners in

Kottayam exhibit literacy that robustly predicts savings and spending behavior (Santhosh Kumar, 2025). These differences likely reflect real socioeconomic and occupational variation, but they are also amplified by inconsistent measurement frameworks—some studies use comprehensive OECD dimensions, others rely on narrower awareness-based tools. This methodological heterogeneity undermines reliable cross-study comparison and baseline establishment.

A second tension appears in the digital domain. Despite high smartphone penetration, digital financial literacy lags substantially behind access (Access Livelihoods, 2025). This gapchal lenges the assumption that infrastructure alone drives digital inclusion and highlights the necessity of simultaneous capability-building. It also suggests that the digital divide is increasingly a capability divide rather than merely an access divide.

Gender findings present a third contradiction: women frequently report lower financial literacy scores yet often manage household finances in practice (Asok & Cox, 2024). This may indicate that conventional assessments overemphasize formal market knowledge—often acquired through male-dominated channels—while undervaluing practical household financial management skills. Alternatively, it may reflect women managing finances with limited deeper understanding—a vulnerability that increases debt stress and reduces bargaining power within households. The Asok and Cox (2024) finding that male debt attitudes influence female debt stress supports the latter interpretation.

Financial Literacy as a Mediating Mechanism in Economic Revitalization

Financial literacy does not exert direct macroeconomic effects but functions as a mediating mechanism between household resources and productive economic participation. In remittance-dependent Kerala, literacy shapes how inflows are deployed: knowledge of investment options and risk-return trade-offs influences whether funds flow into real estate and gold or productive assets; familiarity with formal products determines banking-channel usage and credit creation potential; long-term planning affects consumption versus investmental location. Evidence of continued concentration in low-productivity assets (Joseph & Devassy, 2025) therefore points to capability constraints rather than purely cultural preferences.

For MSMEs, financial literacy mediates enterprise performance through improved cash-flow management, formal credit navigation, and investment decisions (Financial Literacy Meets Inclusion, 2025). Given Kerala's need to shift toward entrepreneurship-led growth, targeted financial capability-building among entrepreneurs and a spiring business owners is likely to yield higher developmental returns than undifferentiated financial education. The MUDRA scheme research suggests that integrating financial literacy support in to lending processes could create teachable moments when entrepreneurs are most receptive.

Debt vulnerability also links to revitalization via household stability: financially stressed households reduce consumption, delay productive investments and risk default, creating local economic ripple effects (Asok & Cox, 2024). With nearly 30% of Kerala adults in debted—the third highest rate among major states—effective debt management and borrowing prudence are core literacy competencies supporting the micro-level stability required for sustainable macro-level activity. The gender dimensions of this vulnerability are particularly concerning, as women bear disproportionate debt stress despite lower literacy.

Gender, Digital Divides and Inclusive Growth

Gender disparities extend beyond individual outcomes to constrain inclusive growth. Women's financial literacy correlates with household investments in child education, health, and nutrition—multiplier effects critical for human capital and intergenerational mobility (Asok & Cox, 2024). However, structural barriers—social norms, mobility restrictions, limited decision-making autonomy—limit women's ability to translate knowledge into action (A Study of Rural Women's Financial Literacy, 2024). Programs that deliver information without addressing these constraints will achieve limited behavioral change.

Kudumbashree's model, embedding financial capability within collective economic participation, offers a promising pathway, yet its financial literacy component remains under-evaluated in terms of behavioral and investment outcomes.

Digital financial literacy gaps further entrench inequality. Rural women and elderly individuals lag in digital security awareness and application navigation despite access (Access Livelihoods, 2025). The Digital Sakhi peer-learning approach is innovative in leveraging trusted community networks, but its scalability and long-term impact on economic participation require rigorous assessment. Preliminary evidence suggests that peer-based approaches may be more effective than formal training for populations with confidence as well as knowledge gaps.

Policy Implications: From General to Targeted Interventions

The evidence calls for more precise, targeted interventions than the literature usually proposes. For remittance households, programs should prioritize investment literacy and formal product awareness, potentially embedded in remittance channels via bank-migrant association partnerships. For entrepreneurs, capability-building should focus on business-specific competencies—cash flow management, credit navigation, record-keeping—integrated into lending and enterprise support processes as suggested by MUDRA research (Financial Literacy Meets Inclusion, 2025).

For women in vulnerable employment, interventions must combine financial education with structural support, such as addressing irregular wages in cashew sectors (Umaprabha, 2025) and challenging restrictive gender norms (A Study of Rural Women's Financial Literacy, 2024). For digital inclusion, peer-basedmodels like Digital Sakhi appear more promising than top-down training for populations with confidence as well as knowledge gaps (Access Livelihoods, 2025).

Existing platforms—Kudumbashree with scale but limited outcome measurement, RBI library and SCERT initiatives with broad reach but untested utilization, financial institutions with teachable moments during lending—offer infrastructure but lack strategic coordination and behavioral impact evaluation. Effective policy requires aligning these within a coherent framework with clear outcome indicators—behavioral change, investment shifts enterprise growth— rather than output metrics such as trainings conducted or materials distributed.

Limitations of the Evidence Base and This Review

The literature suffers from cross-sectional designs that preclude causal inference, small and localized samples (e.g., Joseph & Devassy, 2025, n=125 across 14 districts), and measurement

inconsistency that hinders comparison. Few studies evaluate intervention effectiveness or explicitly connect household literacy to state-level economic indicators. The absence of longitudinal research means that questions of how literacy develops over time, how it responds to life events, and how it influences long-term trajectories remain unanswered.

This review, as narrative synthesis, inherits selection bias risks despite structured search, lacks quantitative aggregation and reflects interpretive choices in the matic organization. Reliance on a small number of recent multi-district studies may amplify their influence, and potential omission of Malayalam sources introduces language bias. However, the thematic approach provides a comprehensive mapping of the evidence landscape that can inform policy and future research.

CONCLUSION

This review demonstrates that financial literacy in Kerala is heterogeneous rather than uniformly deficient, with the central challenge being the transition from basic awareness to advanced behavioral, strategic, and digital capability. Approximately 84% of adults possess moderate literacy, but only 12% achieve high literacy across OECD dimensions, with persistent gaps in understanding compound interest, risk diversification, and long-term planning (Joseph & Devassy, 2025). Gender disparities are pronounced, with women experiencing higher debt stress despite—or because of—lower debt literacy (Asok & Cox, 2024), and digital financial literacy lags substantially behind smartphone penetration (Access Livelihoods, 2025).

This transition from basic to advanced capability is essential for redirecting household resources—especially remittances estimated at 10-15% of GSDP—toward productive investment, strengthening MSME resilience, reducing debt vulnerability affecting 29.9% of adults, and enabling inclusive participation in the digital economy. Financial literacy functions as a mediating mechanism between micro-level capability and macro-level revitalization outcomes. Limited advanced capability contributes to misallocation of savings into low-productivity assets (Joseph & Devassy, 2025), constrained enterprise performance (Financial Literacy Meets Inclusion, 2025), and heightened household fragility (Asok & Cox, 2024)—all of which impede Kerala's shift toward investment-and entrepreneurship-led growth.

Policy implications are clear and specific: interventions must target distinct capability gaps and population segments. For remittance households, investment literacy and formal product awareness embedded in remittance channels. For entrepreneurs, business-specific financial competencies integrated into lending processes. For women in vulnerable employment, combined capability and structural interventions addressing both knowledge deficits and social constraints. For digitally excluded groups, peer-based training models leveraging trusted community networks. Existing platforms—Kudumbashree, RBI library and SCERT initiatives, financial institutions—provide infrastructure but require strategic coordination, behavioral outcome measurement, and rigorous evaluation.

This review contributes by synthesizing recent evidence, critically examining methodological contradictions and limitations, and explicitly framing financial literacy as astrategic economic resource mediating Kerala's revitalization agenda—a link age largely absent from prior work. It underscores that strengthening financial capability is not merely an educational objective but a strategic economic imperative for sustainable and equitable development.

Future research must move beyond description to causal and longitudinal designs: large-scale representative surveys with standardized OECD instruments; experimental and quasi-experimental evaluations of existing programs such as Kudumbashree financial literacy components and Digital Sakhi; studies linking household literacy to state-level indicators including investment rates, enterprise formation, and remittance productivity. Building this evidence base is essential for evidence-informed policies that realize financial literacy's potential contribution to Kerala's economic revitalization.

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DAIRY SECTOR TRANSFORMATION AND ECONOMIC REVITALIZATION IN KERALA: A SELF-SUFFICIENCY PERSPECTIVE

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ABSTRACT

Kerala, known for its high human development indicators and vibrant cooperative traditions, faces a persistent challenge in achieving self-sufficiency in milk production. Despite a strong consumer base and a long tradition of dairy farming, the state still depends heavily on milk imports from neighboring states. Revitalizing Kerala's economy through self-sufficiency in milk production is not only an agricultural goal but also a strategic economic and social imperative. Factors such as limited land availability, rising input costs, declining interest among youth in agriculture, and fragmented farming practices have contributed to this gap. As a result, a significant portion of the state's dairy consumption relies on external sources, leading to economic leakage and vulnerability to supply disruptions. Therefore, in the present scenario, the transition from milk deficiency to self-sufficiency is an urgent need for the state of Kerala. By analyzing production trends, institutional mechanisms and constraints faced by dairy farmers, the paper aims to provide insights into how dairy farming can contribute to the revitalization of Kerala's economy through the attainment of self-sufficiency in milk production.

KEYWORDS: Dairy farming, Milk production, Dairy Cooperatives, Self –sufficiency, Revitalization.

1. INTRODUCTION

Kerala, a captivating state in Southern India is often celebrated as God's own country. This evocative title evokes images of serene landscapes, lush greenery and a harmonious blend of nature and culture. These favourable endowments characterized by humid tropical climate, abundant rainfall and fertile soils have historically supported a vibrant agricultural economy in the state. Within this agrarian framework, the importance of dairy farming as an integral and allied activity is profound. Because, the dairy sector plays a significant role as a pillar of economics stability, a source of good health and nutrition, a sustainable practice and as a lifeline for millions of farmers who depend on dairy for their livelihood (George et al.,2022). Dairy farming in Kerala is unique and it is heavily reliant on small, marginal farmers and landless laborers who depend on this activity for sustaining their livelihoods. Dairy farming has served as a stabilizing component for farm households by reducing poverty, providing regular source of

income, nutritional security and employment, especially to women and marginal rural farmers(Smitha et al.,2025). The integration of livestock with crop production has enhanced resource recycling and improved soil fertility through organic manure. It has contributed to the sustainability of farming systems in Kerala. These special key features position dairy farming as pillar of agricultural landscape in Kerala by supporting inclusive and resilient rural development (Antony et al., 2022).

India continues to be the largest provider of milk in the world for several years. This sector has grown into one of the strongest pillars of rural economy by contributing 5 per cent to the national economy. Dairy farming is the most significant economic activity in rural India and it provides direct employment to more than 8crore farmers (National account statistics). Within this national framework, Kerala presents a distinctive case, characterized by high per capita milk consumption, limited land availability, declining cattle population and a heavy dependence on milk inflows from neighboring states. Despite the long history of cooperative based dairy development led by Kerala Cooperative milk marketing federation (MILMA), the state continuous to face structural constraints in achieving self-sufficiency in milk production.

Kerala's per capita milk consumption is among the highest in the country, but the domestic production has not kept pace with this rising demand for milk products which is due to population growth, urbanization and changing dietary preferences (Smitha Devi &Devi,2019). The widening gap between production and consumption has increased milk imports from neighboring states. This Paradox of high demand coexisting with declining domestic production raises concerns related to price volatility, quality control and regional food security. In this context, a renewed focus on dairy farming is essential not nearly as an agricultural activity but as a strategic pathway for revitalizing Kerala economy (Kerala State Planning Board, 2022). Therefore, in the present scenario, the transition from milk deficiency to self-sufficiency is an urgent need for the state of Kerala. By analyzing production trends, institutional mechanisms and constraints faced by dairy farmers, the paper aims to provide insights into how dairy farming can contribute to the revitalization of Kerala economy through the attainment of self-sufficiency in milk production.

I. Materials and Methods

The study is based on the data compiled from various published sources. Secondary data were collected from the official websites of Government of India, Reserve Bank of India, Ministry of agriculture and farmers welfare, Ministry of Animal Husbandry, Dairying and Fisheries, Press information Bureau , National dairy development board,National Cooperative Database, Dairy Development Department (Government Of Kerala) and KsheeraSree Portal. Articles from magazines, newspapers and journals were also used to get the relevant data. Data on milk production, demand and supply gap and livestock population in Kerala were compiled from the Economic Review published by Kerala State Planning Board in various years.

II. Results and Discussion

❖ Current status of dairy sector in Kerala

India proudly holds its position as the Global leader in milk production surpassing countries like USA, Pakistan, China and Brazil (FAO, 2025). Milk production in the country has increased from 239.30 million tonnes in 2023-2024 to 247.87 million tonnes in 2024-2025, registering a growth of 3.58 per cent. The per capita availability of milk has increased from 390 gram per day in 2018-2019 to 485 gram per day in 2024-2025 (BAHS 2025). But significant inter -state variations persists in terms of milk production, productivity and self-sufficiency.In this national context, state like Kerala has high per capita milk consumption alongside relatively low or stagnant domestic milk production. This paradox necessitates a detailed analysis of the current status of dairy sector in Kerala.

- **Milk production and Per Capita availability.**

The milk production in Kerala has slightly increased from 25.32 lakh metric tons in 2023-2024 to 25.61 lakh metric tons in 2024-2025.Kerala's per capita milk availability is 197 grams per day (BAHS 2024).

- **Livestock Population**

The livestock population of Kerala was reported as 29.09 lakh accounting for 5.4 per cent, according to the 20th livestock census 2019 (Livestock census 2019).

- **Dairy Cooperatives**

Dairy Cooperatives are examples for the institutional mechanism that promote self-sufficiency in milk production. These institutions help in maximizing farmer's income and productivity through collective action. In Kerala, dairy cooperatives are the backbone of dairy industry and are among the most stable and efficient in the country (Economic review 2025). There are 3594 registered dairy cooperative societies in Kerala, including APCOS and non APCOS societies of which 3325 are functional and 269 remain dormant (National Cooperative Database).

According to KCMMF (Kerala Cooperative milk marketing federation MILMA), the total milk procurement by the dairies in 2025 was 3160.33 lakh litres annually, as compared to 4258.72 lakh litres in 2024. This report shows that milk sales exceed procurement in 2024, except Palakkad and Wayanad. The shortfall met largely through imports from state milk federations of Karnataka and TamilNadu through the purchase of skimmed milk powder. This data also necessitates the need for achieving self-sufficiency in milk production.

- Trends in Milk Production, Requirement and Supply Gap in Kerala (2019–20 to 2024–25)

The year-wise data on milk production, total requirement, and the resulting supply gap reveal a persistent and structurally entrenched imbalance in Kerala’s dairy sector over the period 2019–20 to 2024–25 (Table 1).Milk production in the state remained largely stagnant throughout the study period. Output declined marginally from 25.42 LMT in 2019–20 to 25.32 LMT during 2021–22 and continued at the same level up to 2023–24, before recording a modest increase to 25.61 LMT in 2024–25. This near-stationary trend indicates that Kerala’s dairy sector has reached a

production plateau, where incremental gains in output are constrained by structural and resource-related limitations rather than short-term fluctuations.In contrast, total milk requirement exhibited a predominantly rising trend, increasing from 33.32 LMT in 2019–20 to 33.85 LMT in 2024–25. The temporary decline in requirement observed during 2023–24 (31.75 LMT) appears to be an exception, possibly reflecting short-term demand moderation due to economic or market disruptions, rather than a fundamental shift in consumption behaviour. Overall, the data point towards sustained demand growth driven by population increase, urbanization, rising per capita income, and changing dietary preferences favouring milk and milk products (Economic Review 2025).

As a direct consequence of stagnant production and rising demand, the milk supply gapremained consistently high, exceeding 7 LMT in all years under consideration. The deficit widened from 7.9 LMT in 2019–20 to over 8 LMT during 2020–21 and 2021–22, and persisted at the same level in 2022–23. Although the gap narrowed to 6.43 LMT in 2023–24, this reduction was largely demand-driven rather than supply-led. The gap again widened to 8.24 LMT in 2024–25, highlighting the fragile and unsustainable nature of Kerala's milk supply system.

Table 1. Trends in Milk Production and Demand–Supply Imbalance in Kerala

Year	Milk Production (LMT)	Total Requirement (LMT)	Supply Gap (LMT)
2019–2020	25.42	33.32	7.90
2020–2021	25.34	33.37	8.03
2021–2022	25.32	33.51	8.19
2022–2023	25.32	33.51	8.19
2023–2024	25.32	31.75	6.43
2024–2025	25.61	33.85	8.24

(Source: - Dairy Development Department, Government Of Kerala)

❖ Reasons for the Persistent Production–Requirement Imbalance

The observed imbalance can be attributed to several interrelated structural factors. Land scarcity and small herd size are considered as the serious threats that limit the scope for expansion of dairy operations in Kerala. The predominance of smallholder dairy farmers restricts economies of scale and constrains productivity growth. High input costs in terms of feed, fodder, and labour, have eroded profitability, discouraging farmers from intensifying or continuing dairy activities. Labour shortages and demographic transitions, including reduced youth participation in agriculture, have weakened the labour base required for labour-intensive dairy farming. Additionally, fodder deficits, dependence on purchased feed, and climatic stress adversely affect animal productivity. On the demand side, rising urban consumption, expansion of institutional buyers such as hotels and hospitals, and increased preference for value-added dairy products have accelerated growth in milk requirement by widening the demand–supply gap.

❖ **Economic Consequences of the Imbalance for the Kerala Economy**

The persistent milk deficit has significant macro- and micro-economic implications for Kerala. Foremost among these is the growing dependence on inter-state milk procurement, resulting in

substantial outflow of income from the state economy. This economic leakage undermines local income generation and weakens the multiplier effects that could have been achieved through domestic dairy development. Furthermore, the supply deficit exposes the state to price volatility and supply disruptions, adversely affecting consumer welfare, particularly among low-income households for whom milk is an essential nutritional commodity. For dairy cooperatives, reliance on external procurement increases operational costs, reduces margins, and limits their ability to offer remunerative prices to local producers. From a developmental perspective, the imbalance represents a missed opportunity for rural employment and women's livelihood enhancement, given the labour-absorbing nature of dairy farming. Persistent dependence on external supply also poses risks to food and nutritional security, especially during periods of inter-state supply shocks or price surges.

❖ Strategies for increasing milk production in Kerala

Achievement of self-sufficiency in milk production is an urgent need for economic revitalization in Kerala. The dairy sector has the power to stimulate multiplier effect within the rural economy thereby enhancing income and employment opportunities. Furthermore, reducing dependence on interstate procurement would minimize economic leakage, ensuring that consumer expenditure on milk circulates within the state economy, thereby strengthening economic resilience and regional self reliance. Following are the various strategies for increasing milk production in Kerala.

1. Productivity Enhancement through Genetic and Technological Interventions

Improving per-animal milk yield represents the most feasible pathway for augmenting milk output in Kerala. Strategic interventions should include systematic genetic upgradation through selective breeding and artificial insemination using high-yield and climate-resilient breeds. Strengthening veterinary infrastructure, preventive healthcare systems, and disease surveillance mechanisms is equally essential to reduce production losses arising from morbidity and mortality. Adoption of scientific feeding practices and ration balancing programmes can further enhance feed efficiency and milk yield per animal.

2. Addressing Feed and Fodder Constraints

Feed and fodder scarcity remains a critical structural bottleneck limiting dairy productivity. Policy measures must promote fodder cultivation through integrated farming systems, intercropping, and utilization of underexploited lands. Encouraging silage preparation and fodder conservation techniques can mitigate seasonal fluctuations in feed availability. Additionally, strengthening local feed production units and community-based feed banks may reduce dependence on high-cost commercial feed, thereby improving profitability.

3. Strengthening Smallholder and Women-Centred Dairy Systems

Kerala's dairy sector is predominantly smallholder-driven, with substantial participation of women in livestock management. Policy frameworks should prioritize capacity building, access to institutional credit, and skill development programmes targeting women dairy farmers. Reducing women's time burden through labour-saving technologies and improved infrastructure can enhance productivity and decision-making autonomy. Integrating dairy development with

broader rural livelihood and women empowerment initiatives would generate synergistic developmental outcomes.

4. Enhancing Economic Viability and Price Incentives

Sustained production growth is contingent upon ensuring remunerative returns to dairy farmers. Procurement prices must reflect rising input costs, particularly feed and labour. Targeted subsidies for fodder cultivation, animal insurance, and veterinary services can reduce risk and stabilize farmer incomes. Moreover, promoting value addition and processing at the cooperative and local levels would enhance income realization and improve market competitiveness.

5. Institutional Strengthening and Cooperative Revitalization

Effective institutional mechanisms are fundamental for dairy sector expansion. Modernization of milk collection, chilling, and processing infrastructure can reduce post-harvest losses and improve supply chain efficiency. Strengthening extension services with a focus on productivity enhancement, climate resilience, and cost management is also critical. Cluster-based dairy development models may further improve input delivery systems and facilitate economies of scale among small producers.

6. Promoting Youth Participation and Technological Modernization

Labour shortages and demographic shifts pose long-term risks to dairy sustainability. Policies aimed at attracting rural youth through entrepreneurship schemes, start-up incentives, and technology-driven dairy models are necessary. Mechanization, digital advisory services, and data-based herd management systems can reduce labour intensity and improve efficiency.

7. Advancing Climate-Resilient Dairy Practices

Given Kerala's vulnerability to climatic variability, climate-resilient dairy strategies must be prioritized. Improved housing, heat stress management, efficient water use, and sustainable waste management practices can enhance long-term productivity while ensuring environmental sustainability.

III. CONCLUSION

Revitalizing Kerala economy through self-sufficiency in milk production constitutes a comprehensive development strategy that extends beyond the agricultural sector. Given the persistent demand–supply imbalance in milk, strengthening domestic production capacity is essential for enhancing economic resilience and reducing dependence on external procurement. A productivity-led approach supported by technological innovation, genetic improvement, and strengthened veterinary and extension services can significantly improve the efficiency and sustainability of dairy farming in the state. Furthermore, reinforcing cooperative institutions and improving market linkages can ensure remunerative prices, reduce transaction costs, and enhance farmer participation, particularly among small and marginal producers. The dairy sector also offers substantial potential for inclusive growth, as it provides stable income opportunities, generates employment across the value chain, and plays a critical role in women's economic empowerment. Achieving self-sufficiency in milk production would not only strengthen food and nutritional security but also prevent economic leakage, stabilize prices, and enhance rural

livelihood security. In this context, dairy development should be viewed as a strategic instrument for promoting self-reliant, inclusive, and sustainable economic growth in Kerala, rather than merely as an agricultural policy objective.

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DECLINING PADDY PRODUCTION AND RISING DEPENDENCE ON THE PUBLIC DISTRIBUTION SYSTEM: A DISTRICT-LEVEL ANALYSIS OF KERALA

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ABSTRACT

The decline in paddy cultivation in Kerala has raised concerns about regional food security and growing dependence on publicly distributed food grains. This study examines the relationship between district-level paddy production and rice distribution under the Targeted Public Distribution System (TPDS) in Kerala. Using secondary data spanning multiple years, the study constructs a district-level panel dataset to analyze trends in paddy cultivation area, production, and TPDS rice off take. A panel regression framework is used to estimate the impact of changes in paddy production on TPDS rice distribution, while controlling for district- and time-specific effects. The empirical results provide weak evidence of a positive trend in paddy production during the study period, while cultivated area does not display a statistically significant temporal pattern. These findings suggest that recent variations in production have not been driven by systematic expansion or contraction of cultivated land. Instead, the observed dynamics are likely associated with productivity-related factors and district-specific structural characteristics. To assess the interaction between food security mechanisms and agricultural performance, the study further evaluates the linkage between TPDS rice distribution and domestic paddy production. The results indicate that TPDS distribution does not exert a statistically robust independent effect on production across districts. This suggests that production outcomes are influenced by a broader set of institutional, technological, and policy determinants rather than distribution-side factors alone.

KEYWORDS: *Paddy Cultivation, Public Distribution System (Tpds), Food Security, Agricultural Decline.*

INTRODUCTION

Rice has historically been a staple food crop in Kerala, deeply embedded in the agrarian economy and cultural practices of the state. Kerala, renowned for achieving food security, has successfully tackled hunger across the state. Now, the state has shifted its focus toward ensuring nutritional security for all its citizens. The government's commitment is evident through transparent trade practices, consumer empowerment, and efforts aimed at guaranteeing access to safe, nutritious food. With a clear roadmap for its New Kerala initiative, the Food and Civil

Supplies Department is taking significant steps forward.(Kerala calling, information, and public relations. Govt. of Kerala). Historically, Kerala faced food production challenges, with insufficient food grains to meet its population's needs. Over the past few decades, the paddy cultivation sector in Kerala has experienced a sharp decline in both area and production (B Mohan Kumar, 2021)

Rice is the primary food source for approximately 3.5 billion people worldwide and plays a crucial role in global food security. Asia dominates rice production and consumption, reflecting the crop's deep integration into regional agrarian systems and diets (Muthayya et al., 2014). Government procurement and distribution mechanisms ensure widespread access to rice. In 2014–15, the Government of India procured 321.65 lakh tonnes of rice, nearly one-third of total production, of which 87.7 per cent was allocated to welfare schemes. (Mahajan, G., Kumar, 2017).The journey towards food security began in the 1960s when Kerala, as a food-deficient region, introduced the Public Distribution System (PDS). The PDS, which started with rationed food grain distribution, became a model for the nation. However, the central government's introduction of the Targeted Public Distribution System (TPDS, 1997) led to restricted ration benefits for the poorest and most vulnerable sections. The introduction of the Antyodaya Anna Yojana (2000) further enhanced support for the poorest segments by providing food grains at highly subsidized rates. (Department of food and public distribution). Against this institutional backdrop, the present study examines whether the decline in paddy production in Kerala has contributed to increased reliance on rice distribution through the TPDS, using district-level panel data analysis.

Literature Review

A large body of literature documents the persistent decline in paddy cultivation in Kerala. Studies show a substantial reduction in area under paddy from the late 1950s onwards, despite improvements in productivity (Prasad & Kuruvila, 2024). The decline has been attributed to land conversion, labour shortages, high cultivation costs, and a shift toward more profitable cash crops such as rubber and coconut (Abraham, Pradeep Kumar & Abraham, 2021). Sheeba (2016) describes this phenomenon as a paradox of rising productivity alongside falling total production, highlighting structural transformation in Kerala's agrarian economy. Similarly, Yamuna (2018) identifies district-level variations in negative growth rates of paddy area, while Thomas notes both long-term decline and recent localized revival efforts in regions like Palakkad. Climate-related risks further exacerbate vulnerability in rice cultivation (Riya & Ajithkumar, 2023). Collectively, these studies confirm that Kerala remains structurally food-deficit due to contraction in paddy cultivation.

Kerala's Public Distribution System (PDS) has historically been recognized as one of the most efficient in India due to its universal coverage and extensive retail network (Nair, 2010). However, the shift from Universal PDS to Targeted PDS (TPDS) in 1997 marked a significant policy transition. Nair (2010) argues that targeting weakened the inclusiveness of the system and contributed to its institutional dilution. Studies on TPDS performance indicate mixed outcomes: while income transfers helped some poor households cross the poverty line (Performance of TPDS in Kerala), issues of leakage and mistargeting persisted. More recent reforms such as Aadhaar-enabled PDS (AePDS) have improved transparency and service delivery

(Madhusoodana& Devi Parvathy; Sameera). Consumer perception studies show generally positive attitudes toward PDS functioning in Kerala (Nazeem & Biju; Vasipally et al., 2024), though concerns remain regarding accessibility and quality. At the national level, George and McKay (2019) highlight that PDS plays a critical safety-net role but suffers from operational inefficiencies that limit its full potential in ensuring nutritional security.

The relationship between declining local production and increasing dependence on PDS has received limited direct empirical examination. Lalithambika and Anilkumar (2022) found no significant correlation between paddy production and the number of PDS dependents, suggesting that food security dependence may be influenced by broader socio-economic factors beyond production levels. However, macro-level analyses indicate widening food deficits in Kerala due to supply–requirement gaps (Singh & Bhogal, 2008). The pandemic period further exposed vulnerabilities of import-dependent food systems and underscored the need for localized production strategies (Arun Kumar & Manju S. Nair, 2025).

Recent policy discussions emphasize food sovereignty, decentralized governance, and local agricultural revival as critical components of sustainable food security (Arun Kumar & Nair, 2025). This highlights a structural tension in Kerala's economy: declining agrarian production alongside a robust and expanding food distribution mechanism. Few studies empirically analyse the dynamic linkage between agricultural production trends and TPDS rice distribution using district-level panel data. Existing studies either focus on agrarian transformation or on distribution efficiency separately. The present study attempts to bridge this gap by examining whether declining paddy production has led to increasing dependence on TPDS rice distribution across districts in Kerala.

Statement of the Problem

Kerala has experienced a persistent decline in paddy cultivation area and production over the past several decades, resulting in reduced domestic rice availability within the state. Despite improvements in productivity in certain periods, the overall contraction of agricultural land under paddy has contributed to structural food deficits. Consequently, Kerala has become increasingly dependent on rice inflows from other states and on institutional food distribution mechanisms, particularly the Targeted Public Distribution System (TPDS), to meet consumption requirements. While substantial literature exists separately on agrarian decline and the functioning of the Public Distribution System, limited empirical research has examined the dynamic relationship between local paddy production and TPDS rice distribution. It remains unclear whether the expansion or persistence of TPDS rice offtake is directly associated with declining production trends or whether distribution patterns are driven primarily by demographic, policy, or welfare considerations. The study examines whether the decline in paddy production in Kerala has led to a structural increase in reliance on TPDS rice distribution.

Objectives

1. To analyse the trends and patterns of paddy cultivation area and production across districts in Kerala over time.

2. To examine the relationship between paddy production and rice distribution under the Targeted Public Distribution System (TPDS).

Material and Methods

The study focuses on the state of Kerala, India, analyzing district-level rice production and distribution under the Targeted Public Distribution System (TPDS). Kerala has 14 districts, each exhibiting distinct agricultural production patterns, infrastructure capacities, and administrative efficiency, making it an ideal setting to study the relationship between local production and public food distribution. Secondary data were collected from official sources, including the Directorate of Economics and Statistics, Kerala, and the Food and Civil Supplies Department, covering the period 2016–2023. The key variables include: Rice Production (in metric tonnes or lakh tonnes) – total annual paddy production per district. TPDS Distribution (in metric tonnes) – total rice distributed to households under the targeted PDS scheme per district per year.

The study uses a panel data design that integrates time-series and cross-sectional dimensions. Panel data are advantageous because they allow control for time-invariant district-specific characteristics, such as administrative capacity, soil fertility, or historical production trends, which may influence TPDS distribution but remain constant over time. This approach reduces omitted-variable bias and increases the efficiency of the estimated coefficients. To investigate the impact of rice production on TPDS distribution, a district fixed-effects regression model was specified.

$\text{Distribution}_{it} = \alpha_i + \beta \cdot \text{Production}_{it} + \varepsilon_{it}$

- Distribution_{it} is the TPDS rice distribution in the district $i$during year t.
- Production_{it} is the rice production in district $i$during year t.
- α_i Captures district-specific fixed effects, representing unobserved, time-invariant factors unique to each district.
- ε_{it} is the idiosyncratic error term.
- $\beta$is the coefficient of interest, representing the average change in distribution for a unit change in production.

Statistical Trend Model for the first objective

$\text{Area}_{it}=\alpha+\beta 1\text{Yeart}+\mu i+\epsilon_{it}$

- $\boldsymbol{Area_{it}}$isArea under paddy cultivation, Observed for district i at time t
- α (Alpha) is the overall intercept (constant term)
- β1 is the slope coefficient of Year, which measures the average change in area over time
- Year_t is time variable
- μi is District-specific fixed effect, Captures unobserved characteristics of each district
- ϵit Distinctive error term, Captures random shocks that vary across district and time

$Production_{it}=\alpha+\beta 1Timet+\epsilon_{it}$

- Production $_{it}$ is Paddy production
- α (Alpha), Intercept (constant term)
- β1 is the slope coefficient of Time Measures the average annual change in production
- Time $_t$ is a Time variableϵ_{it} is Error term

The study employs a district-level panel data fixed effects regression model to examine the relationship between paddy production and rice distribution under TPDS during 2016–2023. Robust standard errors clustered at the district level are used to correct for heteroskedasticity**.**

H_0: Paddy production has no significant impact on TPDS rice distribution in Kerala.

H_1: Paddy production has a positive and significant influence on TPDS distribution

Results and Discussion

Trends in Paddy Area and Production across Districts

This section examines the temporal trends in paddy cultivation area and production across districts in Kerala using district-level panel data for the period 2016–2023. To control for unobserved district-specific heterogeneity, a fixed-effects (within) regression model was employed with time (Year) as the explanatory variable. Robust standard errors clustered at the district level were used to address potential heteroskedasticity and intra-district correlation. The regression results indicate a positive time trend in paddy production. The coefficient of the time variable suggests that paddy production increased on average by approximately 950 tonnes per year during the study period. However, the estimated coefficient is statistically significant only at the 10 percent level (p = 0.067), indicating weak evidence of a systematic upward trend. The within R^2 value of 0.0296 suggests that time alone explains only a small proportion of the variation in production within districts. Nevertheless, the high value of rho (0.95) indicates that a substantial share of the variation in production is attributable to time-invariant district-specific factors, thereby justifying the use of a fixed-effects framework.

Fixed-Effects Regression Results (Dependent Variable: Area)

$Areait=\alpha+\beta 1Yeart+\mu i+\epsilon it$

Variables	Coefficient	Robust Std. Error	t-value	p-value	95% Confidence Interval
Year_num	594.04	763.60	0.78	0.451	−1055.63 to 2243.70
Constant	−1,184,835	1,542,094	−0.77	0.456	−4,516,327 to 2,146,656

Statistic	Value
Number of Observations	112
Number of Groups (Districts)	14
Within R^2	very low; not statistically meaningful
sigma_u	18,233.79
sigma_e	17,484.80
rho	0.521

In contrast, the regression results for cultivated area reveal no statistically significant time trend. Although the coefficient on the time variable is positive, implying an average annual increase of approximately 594 hectares, the estimate is statistically insignificant ($p = 0.451$). This suggests that, within the selected study period, there is no strong evidence of systematic expansion or contraction in paddy cultivation area across districts. The rho value of 0.52 indicates moderate inter-district variation in cultivated area, implying that district-level characteristics such as land-use patterns, irrigation infrastructure, and agro-climatic conditions may play an important role in shaping area dynamics. The absence of a statistically significant decline in cultivated area is noteworthy in light of earlier studies that documented a long-term structural contraction of paddy cultivation in Kerala due to urbanisation, land conversion, and shifts towards more remunerative crops. The findings of the present study suggest that the pace of decline may have slowed or stabilised during the period under consideration. It is possible that policy interventions aimed at promoting paddy cultivation, including support prices, input subsidies, and procurement mechanisms, have contributed to preventing further contraction.

At the same time, the marginally significant increase in production without a corresponding significant expansion in cultivated area points towards the role of productivity improvements. Technological adoption, improved seed varieties, mechanisation, and better farm management practices may have enhanced yields, thereby supporting production growth despite limited changes in land area. However, since time alone explains only a small portion of the variation in production, other economic, institutional, and policy-related factors are likely to influence output dynamics.

Fixed-Effects Regression Results (Dependent Variable: Production)

$$Production_{it} = \alpha + \beta 1 Time_t + \epsilon_{it}$$

Variables	Coefficient	Robust Std. Error	t-value	p-value	95% Confidence Interval
Year_num	949.53	475.64	2.00	0.067	−78.02 to 1977.08
Constant	−1,877,250	960,546.60	−1.95	0.073	−3,952,385 to 197,884

Statistic	Value
Observations	112
Number of Groups (Districts)	14
Fixed Effects	District
R-squared (Within)	0.0296
F-statistic (1,13)	3.99
Prob > F	0.0673
Sigma_u	60,194.007
Sigma_e	13,390.259
Rho	0.9528

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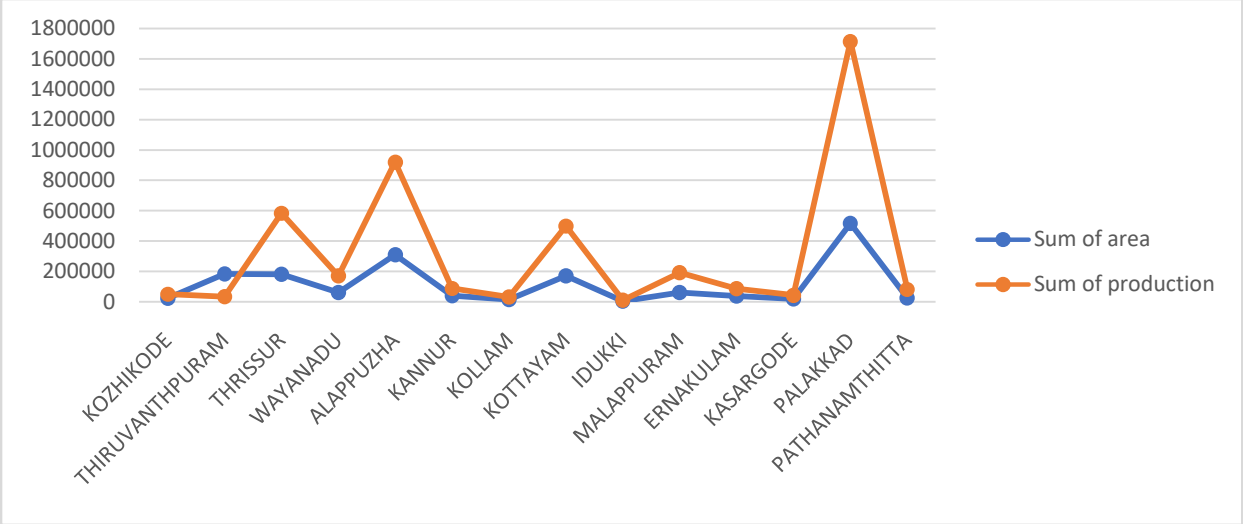
Overall, the results provide nuanced evidence regarding the trajectory of the paddy sector in Kerala. While there is weak support for a positive production trend, there is no statistically robust evidence of a significant structural shift in cultivated area during the study period. These findings imply that short- to medium-term fluctuations in production may not be primarily driven by land-use changes but rather by productivity-related factors and district-specific characteristics.

From a policy perspective, the results underscore the importance of strengthening productivity-enhancing measures rather than focusing solely on area expansion. Given the constraints on agricultural land availability in Kerala, sustaining production growth will likely depend on technological innovation, institutional support, and effective procurement systems. The findings also provide a necessary empirical foundation for subsequent analysis examining the linkage between domestic production and public distribution system dynamics.



Relationship between paddy production and rice distribution

The study examined the relationship between district-level rice production and rice distribution under the Targeted Public Distribution System (TPDS) in Kerala using panel data from 2016 to 2023. A fixed-effects regression model with robust standard errors clustered at the district level was employed to account for unobserved heterogeneity across districts. This approach allowed the analysis to isolate the within-district variation over time and identify whether production increases translate into higher TPDS distribution.

The regression results indicate a positive and statistically significant relationship between rice production and TPDS distribution. The coefficient for production is 0.339 ($p = 0.020$), implying that for every additional unit of rice produced, TPDS distribution increases by approximately 0.34 units, holding district-specific factors constant. The 95% confidence interval (0.063–0.616) further confirms the robustness of this association. The constant term of 13,576.76 reflects the baseline level of distribution when production is theoretically zero, although this scenario is unlikely in practice.

Variance decomposition highlights that a substantial portion of the variation in distribution is attributable to district-level differences. The estimated standard deviation of the district effects ($\sigma_u = 23,093.48$) is notably higher than that of the idiosyncratic error term ($\sigma_e = 13,962.57$), and the intra-class correlation coefficient ($\rho = 0.732$) indicates that nearly 73% of the variance in distribution arises from cross-district differences rather than year-to-year fluctuations within a district. This underscores the importance of considering district-specific characteristics, such as storage infrastructure, administrative efficiency, and local demand, when evaluating TPDS effectiveness.

The positive association between production and distribution suggests that higher rice-producing districts tend to allocate more grain to the TPDS, which is consistent with the operational objectives of the public distribution system. This finding aligns with previous studies emphasizing that local production capacity can influence food grain allocation and availability under government schemes (Lama & Majumder, 2022). In Kerala, where rice consumption remains high and local production is a critical component of food security, the results indicate that production-driven distribution helps maintain a stable supply for eligible beneficiaries.

Dependent variable: TPDS Distribution

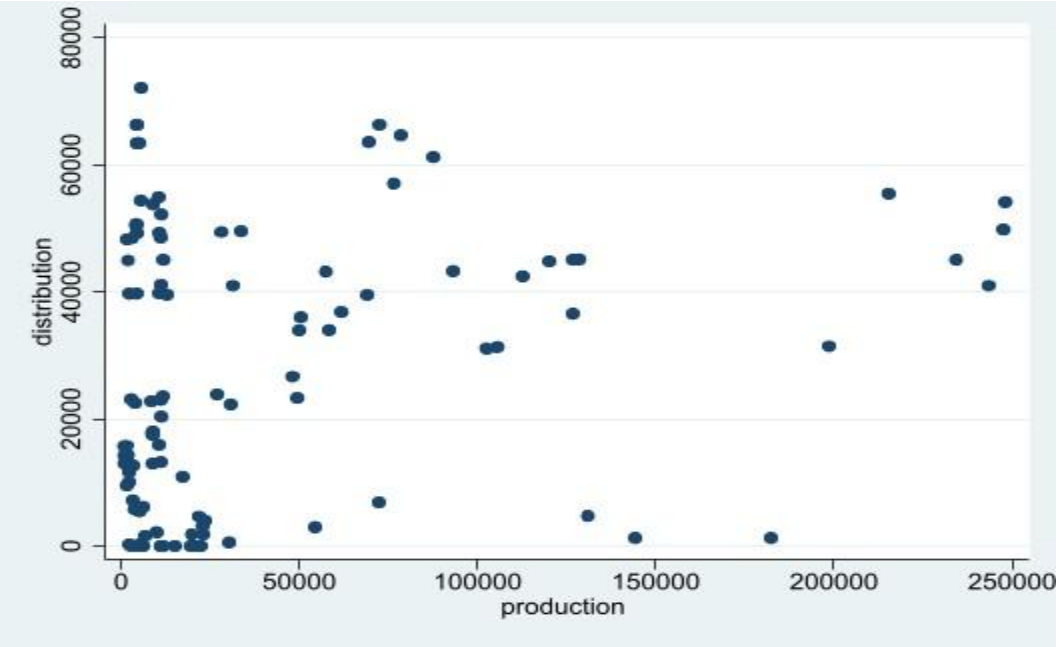
$$Distribution_{it}=\beta 0+\beta 1 Production_{it}+u_i+e_{it}$$

Variables	**Coefficient**	**Robust Std. Error**
Production	0.339**	(0.128)
Constant	13,576.76**	(5,165.55)

Statistic	**Value**
Observations	112
Number of Districts	14
District Fixed Effects	Yes
Robust Standard Errors	Clustered at the district level
Sigma_u	23,093.48
Sigma_e	13,962.57
Rho	0.7323

However, the model also highlights substantial heterogeneity across districts. The high fraction of variance due to district effects suggests that local factors beyond production—such as administrative efficiency, logistical challenges, and socio-economic conditions—play a crucial role in determining TPDS outcomes. For instance, districts with similar production levels may still experience variations in distribution efficiency due to differences in storage capacity, accessibility to remote populations, or implementation practices. This reinforces the need for context-specific policy interventions, where production data alone cannot fully predict distribution performance.

The findings carry practical implications for policymakers aiming to improve the effectiveness of TPDS in Kerala. Enhancing coordination between local production planning and distribution logistics can help ensure that production increases directly translate into improved access for beneficiaries. Moreover, investing in district-level infrastructure and monitoring mechanisms may reduce inefficiencies arising from administrative bottlenecks. Future research could extend this analysis by incorporating additional explanatory variables, such as procurement, allocation, and socio-economic indicators; to develop a more comprehensive understanding of factors influencing TPDS distribution. The analysis provides strong empirical evidence that rice production positively influences TPDS distribution in Kerala. While production is a key determinant, the predominance of district-level variation highlights the role of local administrative and infrastructural factors. These insights contribute to a nuanced understanding of public food distribution systems and can guide policy measures aimed at enhancing food security through effective integration of local production and distribution mechanisms.



CONCLUSION

This study analysed district-level trends in paddy cultivation in Kerala and examined the relationship between domestic production and rice distribution under the Targeted Public Distribution System (TPDS) for the period 2016–2023 using a fixed-effects panel framework. By controlling for unobserved district heterogeneity, the analysis provides empirical insights into recent dynamics in the state's paddy sector. The results indicate weak evidence of a positive trend in paddy production over the study period, while cultivated area does not exhibit a statistically significant time trend. These findings suggest that recent production performance has not been driven by systematic expansion of cultivated land. Instead, the stability in the area combined with modest production changes points toward the potential role of productivity-related factors and district-specific structural characteristics.

The examination of the linkage between TPDS rice distribution and paddy production suggests that public distribution mechanisms alone do not fully account for variations in domestic output across districts. Production dynamics appear to be shaped by broader institutional, technological, and policy factors rather than by distribution-side influences in isolation. Overall, the findings highlight the importance of strengthening productivity-enhancing interventions and aligning food security mechanisms with agricultural support policies. An integrated approach that simultaneously addresses farmer incentives, procurement systems, and technological advancement is essential for sustaining paddy cultivation within Kerala's structural land constraints.

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Special Issue

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INVESTMENT MOBILITY AND ITS DETERMINANTS AMONG NON-RESIDENT INDIANS: EVIDENCE FROM PONNANI TALUK, KERALA

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ABSTRACT

This paper examines investment mobility and the determinants influencing investment behavior among Non-Resident Indians (NRIs) in Ponnani Taluk, Malappuram District, Kerala. NRIs constitute a vital source of foreign remittances and capital inflows, significantly contributing to regional development. Using primary data collected from 43 respondents and supported by secondary sources, the study analyses socio-economic characteristics, investment objectives, preferred investment avenues, risk perception, and constraints faced by NRIs. The findings reveal that economic stability, income security, family welfare, and safety considerations are the dominant determinants shaping investment decisions. The study highlights the conservative nature of NRI investments and suggests policy measures to enhance investment diversification and mobility.

KEYWORDS: *Non-Resident Indians; Investment Behavior; Investment Mobility; Remittances; Kerala Economy. Jel Classification: F21, G11, O15.*

1. INTRODUCTION

International migration and remittances have emerged as crucial drivers of economic development in many developing regions. In India, and particularly in Kerala, Non-Resident Indians (NRIs) play a decisive role in household income support, savings mobilization, and capital formation. Kerala accounts for a disproportionately high share of India's emigrants, with remittances constituting a major component of state income. Despite the magnitude of inflows, NRI investments remain concentrated in traditional and low-risk instruments. This study focuses on NRIs from Ponnani Taluk to analyze their investment mobility and identify the key determinants influencing their investment behavior.

2. Review of Literature

Existing literature highlights that investment behavior is influenced by demographic, economic, and behavioural factors. Jain and Mandot (2012) found that income and risk tolerance significantly affect investment choices. Studies on Kerala migration (Zachariah & Rajan, 2018) emphasize the dominance of Gulf migration and the stabilizing role of remittances in the state economy. Sukumaran Nair (2002) observed that NRIs prefer safe investment avenues such as bank deposits, gold, and real estate. Behavioural finance research further suggests that emotional

attachment, family influence, and information asymmetry play a critical role in shaping investment decisions.

2. Objectives of the Study

The specific objectives of the study are:

(i) To analyze the investment mobility of NRIs in Ponnani Taluk.

(ii) To examine the major determinants influencing their investment decisions.

4. Data and Methodology

The study is based on both primary and secondary data. Primary data were collected from 43 NRIs belonging to Ponnani Taluk using a structured interview schedule. A multi-stage sampling technique was adopted. Secondary data were sourced from Kerala Migration Surveys, reports of NORKA, RBI publications, and relevant academic literature. Percentage analysis, Mean, Weighted Mean and Ranking Method were employed to analyze and interpret the data.

5. Evidences from Secondary Data

5.1 Impact of Return Migration on Kerala's Economy

Kerala has witnessed a marked rise in return migration, increasing from 1.2 million in 2018 to nearly 1.8 million in the post-pandemic period—an increase of about 50 percent. This surge was largely driven by job losses, stricter migration policies, and COVID-19 disruptions. The *Kerala Migration Survey (2023)* supports this trend, noting that 18.4 percent of return migrants came back due to layoffs and employment loss abroad. The rise in returnees has implications for Kerala's labor market, employment pressure, and reintegration challenges.

5.2 Domestic and NRI Bank Deposits

Despite increased return migration, migrant-linked financial flows remain strong. As of March 2023, Kerala's total bank deposits comprised ₹4,78,402 crore in domestic deposits (66.5 percent) and ₹2,40,975 crore in NRI deposits (33.5 percent), according to SLBC data. Secondary sources indicate that NRI deposits have since crossed ₹3 lakh crore, with Kerala accounting for nearly 19.7 percentof India's total NRI deposits. This reflects sustained financial engagement of expatriates with their home state.

5.3 Remittance Trends and Economic Contribution

Remittances continue to play a central role in Kerala's economy. Kerala's share in India's remittance inflows rose to 19.7 percent in 2023–24, recovering strongly from pandemic lows. The state received nearly ₹2 lakh crore in 2024, more than double the amount a decade ago. Long-term data from the *Kerala Migration Survey (2023)* show remittances increasing dramatically from ₹13,652 crore in 1998 to ₹2,16,893 crore in 2023. These inflows significantly support household income, consumption, housing, and local economic activity.

5.4 Migration Distribution and Emerging Trends

Migration remains deeply embedded in Kerala's socio-economic structure, with around two out of five households having a non-resident member. Districts such as Malappuram show

particularly high concentrations of migrant households. While Gulf countries remain key destinations, remittances from countries like the United States, United Kingdom, Canada, and Australia are growing, indicating diversification of migration patterns and strengthening Kerala's remittance resilience.

6. Socio-Economic Profile of Respondents

The majority of respondents were male (79.1percent) and belonged to the younger age group, indicating a relatively young migrant workforce. The average age of respondents is 29 years, indicating that investment mobility is largely driven by young migrants in their early earning stage. This reflects early migration trends and long-term financial planning potential. Most respondents were employed in Gulf countries as skilled or semi-skilled workers. The average annual investment is about ₹1.24 lakhs, the calculated mean shows moderate investment capacity. High-value investments are limited, indicating cautious financial behavior. A large share of respondents had less than five years of overseas experience, reflecting recent migration trends.

7. Investment Pattern and Mobility

The findings indicate that NRI investments are predominantly conservative in nature. More than half of the respondents invested up to ₹1.24 lakhs annually, with a preference for monthly investment patterns. By applying Ranking Method for investment objectives based on percentage values: Income – 37.2 percent (Rank I), Safety – 32.6 percent (Rank II), Growth – 23.3 percent (Rank III), others – 7 percent (Rank IV). Income generation is the most preferred objective, followed by safety. This confirms that NRIs in the study area are conservative investors who prioritize steady returns over speculative growth. Income generation and safety were identified as primary investment objectives. Bank deposits, insurance schemes, post office savings, and gold were the most preferred investment avenues, while participation in equities and mutual funds remained limited.

8. Determinants of Investment Decisions

The Weighted Mean Risk Score is 1.63. Since the value (1.63) lies closer to 1, respondents are generally low to moderate risk takers. This further supports the finding that NRIs prefer safe and stable investment avenues. Economic stability emerged as the most influential determinant affecting investment decisions, followed by family welfare considerations and the need for regular income. This indicates that macroeconomic conditions strongly affect NRI investment behavior. Informal sources such as family members and friends played a significant role in investment decision-making, while banks were identified as the most trusted financial intermediaries.

9. Constraints Faced by NRIs

Unfavourable economic conditions were reported as the major constraint affecting investment decisions. Other challenges included lack of adequate financial information, procedural complexities, and limited access to professional advisory services. Despite these constraints, a majority of respondents expressed satisfaction with their existing investment choices.

10. Results and Discussion

The study reveals moderate investment mobility among NRIs, characterized by limited diversification across financial instruments. Socio-economic factors such as age, income, education, and duration of stay abroad significantly influence investment behaviour. The dominance of low-risk investments reflects risk aversion and information gaps, suggesting the need for targeted financial literacy initiatives.

11. Conclusion and Policy Implications

NRIs remain a critical pillar of Kerala's economy, yet their investment potential is not fully realized due to conservative investment behaviour and structural constraints. Policymakers and financial institutions should design NRI-specific investment products, improve access to financial information, and promote awareness of diversified investment opportunities. Simplifying investment procedures and strengthening advisory mechanisms can significantly enhance investment mobility and contribute to sustainable economic development.

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Special Issue

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SOCIETAL CONSEQUENCES OF INDUSTRIAL POLLUTION IN ELOOR, KERALA: A MULTIDISCIPLINARY ANALYSIS OF ENVIRONMENTAL DEGRADATION AND PUBLIC HEALTH RISK

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ABSTRACT

Industrialisation is often described as a double-edged sword: while it plays a vital role in driving economic development, it also significantly contributes to environmental degradation. Eloor, a municipal island located on the banks of the Periyar River in Kerala's Ernakulam district, has emerged as a major industrial hub, home to over 350 industrial units including Fertilisers and Chemicals Travancore (FACT) and Hindustan Insecticides Limited. The concentration of such industries has led to the release of a wide range of negative externalities, including air, water, soil, and other forms of pollution. These have had profound consequences for the local population, manifesting in increased rates of cancer, respiratory illnesses, property devaluation, and broader socio-economic stress. This study undertakes a multidisciplinary analysis to assess the health impacts of industrial pollution in Eloor, critically evaluate the existing regulatory and policy frameworks, and analyse the socio-economic vulnerabilities of affected communities. The research employs a structured primary survey conducted among 50 residents, particularly in the heavily impacted areas surrounding FACT and Pathalam, and is supplemented by secondary sources and statistical analysis. Findings reveal that a majority of residents suffer from chronic health conditions, including cancer and respiratory issues, while environmental quality continues to deteriorate. Despite the presence of various environmental regulations and schemes, the persistence of pollution underscores the ineffectiveness of existing governmental interventions. The findings have broader implications for environmental justice and sustainable industrial policy in developing economies.

KEYWORDS: *Respiratory Illnesses, Vulnerabilities, Population, Implications.*

INTRODUCTION

"*Industrial pollution is the slow violence of our time, eroding ecosystems and communities until they can no longer bear the weight of the damage we have inflicted."*-Arundhati Roy

Industrialization plays a crucial role in economic development. Inclusive and sustainable industrialization along with innovation and infrastructure can stimulate dynamic and competitive economic processes that generate employment and income (United Nation,2025).However industrial activities are responsible for about 61 per cent of environmental pollution globally (Fayomi et al,.2019).Industrial pollution is a serious threat to human health (Rahman et al.,2021).In India, industries contribute to 51 per cent of air pollution (Garima Sharma et al., 2022) emphasizing the environmental costs of economic expansion.

In the South Indian state of Kerala, industrial pollution is largely concentrated in Eloor-Edayar Industrial belt in Ernakulam district, the state's largest industrial belt (Gayathri & Bindu,2023). Approximately 350 industries operate in this area and a significant portion of them do not follow the safety protocols set by the pollution control board (Menon & Raj, 2025). High concentrations of persistent organic pollutants (POPs) like DDT and endosulphan, were detected as well as heavy metals such as mercury and cadmium that entered the Periyar river and its ecosystems. Such hazardous industrial activities resulted in various health problems including respiratory diseases, birth defects, and recurring ecological problems such as mass fish deaths.This alarming scenario needs urgent multidisciplinary investigation and policy intervention.

SCOPE OF THE STUDY

This study examines the negative impact of industrial pollution on residents of Eloor, a small municipal island located in the Ernakulam district of Kerala, particularly those living in Fertilizers and Chemicals Travancore Limited (FACT) and Edayar industrial area, including Pathalam. It mainly focuses on the direct human impact, including respiratory illness, cancer, loss of livelihood, reduced property values caused by corrosive pollutants.

Primary data were collected from 50 residents through structured survey conducted over two days in April 2025. The study examines residents' awareness regarding the pollution intensity, associated health risks, method of effluent discharge and effectiveness of government interventions.

OBJECTIVES

The purpose of this study is to evaluate the health impact of industrial pollution on the local community while critically examining the existing regulatory and policy frameworks and analyzing the socio-economic vulnerabilities of the affected population.

RESEARCH METHOD

The study employed primary data collected through a structured sample survey conducted in Eloor, a municipality in Ernakulam District, Kerala. The survey targeted areas in close proximity to the Fertilizers and Chemicals Travancore (FACT) facility, a major industrial site known for its contribution to environmental pollution in the region. The collected data were analyzed using statistical tools, including percentages, averages, graphs, and diagrams, to derive meaningful insights.

This study also gathered information from existing sources including academic journals, government reports, news reports, books, and reputed websites. These sources provided valuable

insights and context, enabling a comprehensive analysis of the research topic. The collected data were critically evaluated, analyzed, and synthesized to address the research objectives and questions, offering a thorough understanding of the issue at hand.

LIMITATIONS OF THE STUDY

The study was limited by extensive travel distances and reluctance of residence to participate.

REVIEW OF LITERATURE

Krishnan et al. (2025) highlighted industrial discharges as the primary factor affecting water and sediment quality, creating ecological risk to aquatic organisms and public health risks by employing hydro-chemical and pollution assessment. The increase in soil pH result in the deposition of alkaline industrial waste.

Study conducted by Arunima Ajay in 2024 found that in Eloor many local people were suffering from health issues such as skin problems, breathing issues, and other health problems due to industrial pollution. This highlights the urgent need and attention of politicians and other important people.

According to Chawla (2023) the negative effect of industrial toxicology on human health are a complex concern. It can lead to severe and chronic health problems such as occupational cancers. Apart from immediate health concerns, industrial toxicology disrupt ecosystems, affecting plant and animal species and pose indirect risks to human health.

Study conducted by Yadav et al. in 2022 found out that in Delhi, the number of respiratory cases is reported to be 12 times higher than the national average, even after moving several polluting industries elsewhere. According to Sydney Cohen, industrialization has expanded globally, where, many factories are located along rivers and coastal areas, often operating with minimal regulatory control over their environmental discharges.

Rahman et al., (2021) provide strong empirical evidence that industrial activities, which release air pollutants such as carbon dioxide and nitrous oxide has become a pressing global issue because it adversely affects public health and mortality rates in industrialized countries.

Empirical investigation conducted by Nassar & Jacob in 2015 reveal that the unceasing dumping of the industrial wastes directly into the soil leads to excessive accumulation of chemicals at hazardous level, which will negatively disrupt the normal micro flora of the soil ecosystem. One of the major chemicals produced in the Eloor industrial area is ammonia. Chlorine is also one of the major chemicals produced by neighboring industries in the form of DDT, Chlordane etc. Toxic industrial waste initially affects the chemical and biological properties of soil followed by creating problems to the plants, then animals and moved to the rest portion food web.

The studies conducted by Rincy and Teena (2011) showed that heavy metal levels are exceeding in parts of medicinal plants collected from Eloor, probably due to the industrial pollution. Some metals in the plants were found to exceed permissible level. Because of their medicinal use, it is important to test for heavy metals before using them in medicines.

Despite several studies on industrial pollution in Eloor, there remains a lack of multi-disciplinary analyses that integrate environmental, social, and political and health dimensions, reflecting the

need for grassroots level investigations by focusing on local residents as participants to address the hazardous impact of industrial pollution.

DATA ANALYSIS

Among the 50 individuals surveyed, 56 per cent were men and 44 per cent were women.38 per cent of respondents belong to the 50-70 age group, followed by 34 per cent in the 30-49 age group and 28 per cent in the 15-29 group. The sample shows greater participation from older individuals.

66 per cent of population experience pollution on a daily basis, while 16 per cent witness it rarely, and 18 per cent report never experiencing it. The findings indicate frequent exposure to pollution became a normal phenomenon. 58 per cent of respondents identifies air pollution as the major concern, with 38 per cent highlighting water pollution and 4 per cent reported other sources such as soil degradation. These results indicate that the air pollution is considered as the most immediate threat. The fertilizer sector was identified as the primary polluter by 56 per cent of participants, followed by chemical industries (30 per cent). The remaining 14 per cent indicated other sources.

The survey reveals active citizen efforts to address pollution. 48 per cent reported reducing plastic use as pollution mitigation strategy.23 respondents emphasized tree planting for ecological restoration. Remaining respondents mentioned other strategies. Overall, the results indicate strong community participation in coping industrial pollution. Data reveal that river discharge (Periyar) as the leading effluent disposal method (62 per cent, N=31), followed by landfill use. While 16 per cent were unaware, reflecting limited public awareness.

Table 1. Respondents' Identification of Most Pressing Local Issues

Most pressing issue	Responses	per cent
Wellness challenge	44	88 per cent
Water crisis	4	8 per cent
Other	2	4 per cent
Total	50	100 per cent

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Table 1 indicate the most pressing issue in Eloor due to industrial activities by 50 respondents. 44 per cent admitted wellness challenges as the primary issue of industrial pollution. Only 8 per cent reported water crisis as the major challenge.

Distribution of local health issues potentially linked to industrial pollution

Figure 2

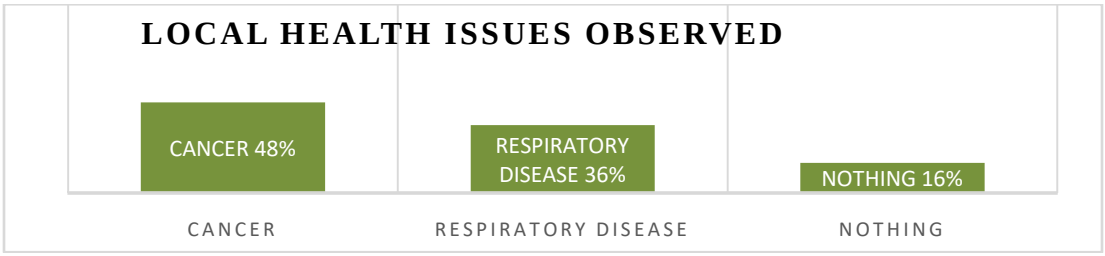

Figure 2 illustrates the frequency of major health issues observed among local residents in Eloor. Nearly half of the respondents (48 per cent) reported that cancer related cases are being reported frequently. 36 per cent identified respiratory diseases as the primary health issue. The prevalence of cancer and respiratory illness suggests potential long term health impact of industrial effluents.

Table 2 Assessment of Pollution Control Framework in the Eloor Industrial Region

Effectiveness level	Responses	per cent
Highly effective	9	18 per cent
Moderately effective	3	6 per cent
Ineffective	38	76 per cent
Total	**50**	**100 per cent**

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Figure 3.

The data indicates that 76 per cent of respondents perceive pollution control framework as ineffective, indicating widespread dissatisfaction. Only 18 per cent consider it highly effective. Overall, the findings show that Eloor wants a strong government intervention to mitigate hazardous industrial activities.

Table 4. Perceived Government Priorities in the Eloor Industrial Region

Gov priority	Responses	per cent
Human welfare	8	16 per cent
Industrial development	35	70 per cent
Prefer not to say	7	14 per cent
Total	50	100 per cent

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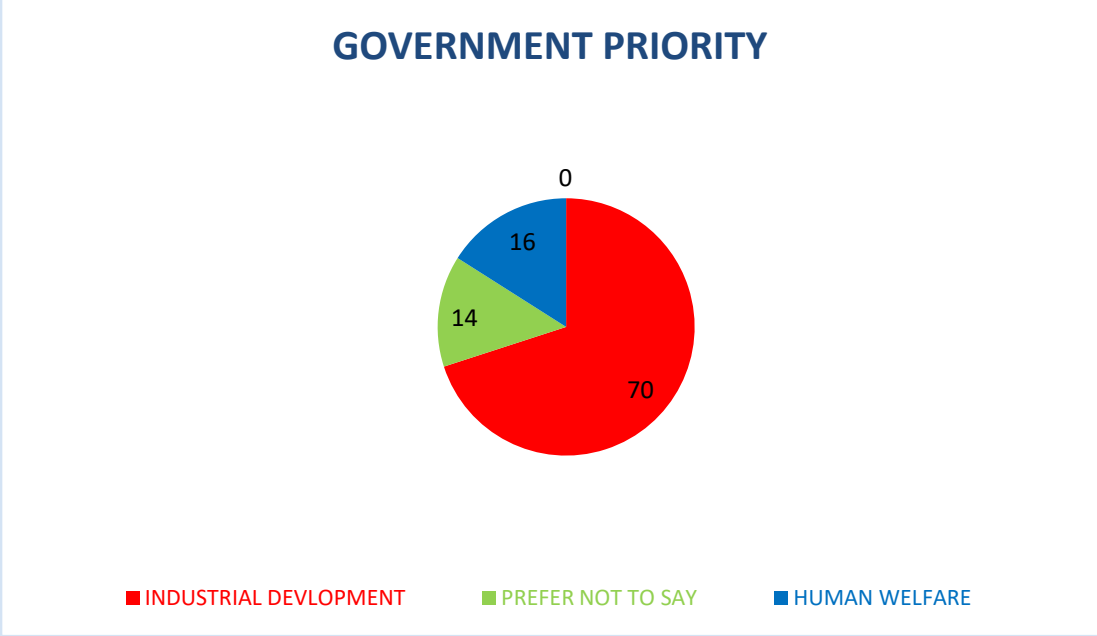
Figure 4.

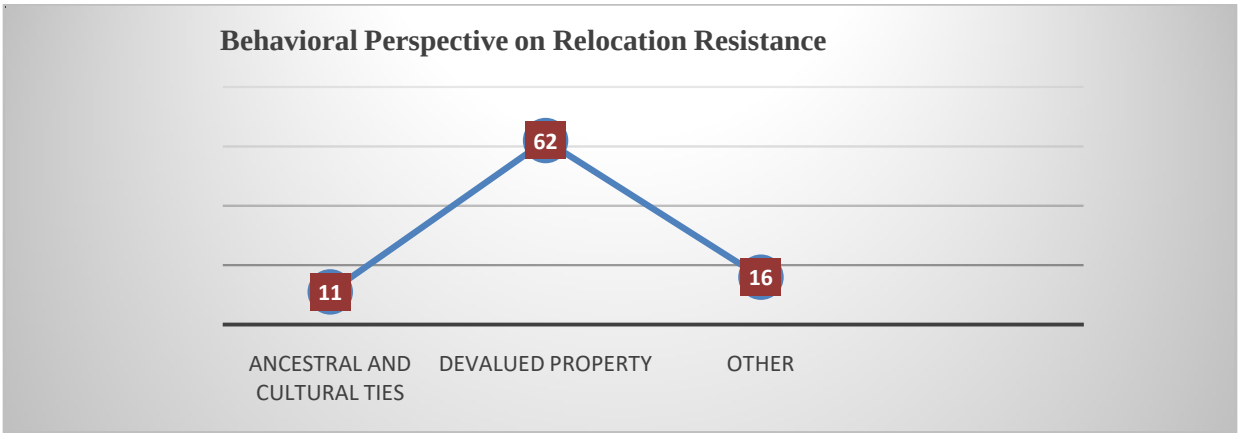


In Eloor, 70 per cent of respondents believe that government prioritizes industrial development over human welfare, while 14 per cent prefer not to respond. These results reflect a strong industry-oriented governance approach rather than human welfare.

Behavioral Perspective on Relocation Resistance

Figure 6 shows that out of 50, 31 (62 per cent) respondents cited devalued property as the primary economic barrier for relocating, while 22 per cent pointed to ancestral and cultural ties, reflecting strong emotional attachment to their land.

Figure 5.



SUGGESTIONS AND POLICY RECOMMENDATIONS

Based on the findings of this study, several interventions are important to address various challenges posed by industrial pollution in Eloor. The Continuous Ambient Air Quality Monitoring Station (CAAQMS) in Eloor is non-functional. The annual maintenance contract (AMC) of Eloor station has expired in February 2026 (The Hindu, 2026). Immediate restoration and regular maintenance of such equipment is significant for making proper policies and public health protection.

The authorities should look into suspending or shutting down industrial units that regularly violate pollution control rules and create serious environmental and health risks. Creation of legal platforms for polluter-victims' negotiations and channelization of this tax revenues into local remediation and health infrastructure can go a long way in addressing people's concerns. Launching local awareness campaigns in Malayalam through workshops, informational pamphlets and school programs will make people more informed. Local self- government in Eloor should inform residents about pollution control schemes and grievance options. Establish adequately equipped health center in Eloor with specialized facilities for treating pollution related issues, especially cancer and respiratory diseases. Implement a land relocation scheme to help locals to overcome property devaluation difficulties.

CONCLUSION

This study shows that industrial pollution in Eloor is not just an environmental concern but has severe health and economic consequences for local people. Existing regulations have failed to provide adequate protection to affected communities. Strict enforcement and people centered policies are significant for environmental justice and public welfare.

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Each research paper/article submitted to the journal is subject to the following reviewing process:

1. Each research paper/article will be initially evaluated by the editor to check the quality of the research article for the journal. The editor may make use of ithenticate/Viper software to examine the originality of research articles received.
2. The articles passed through screening at this level will be forwarded to two referees for blind peer review.
3. At this stage, two referees will carefully review the research article, each of whom will make a recommendation to publish the article in its present form/modify/reject.
4. The review process may take one/two months.
5. In case of acceptance of the article, journal reserves the right of making amendments in the final draft of the research paper to suit the journal's standard and requirement.

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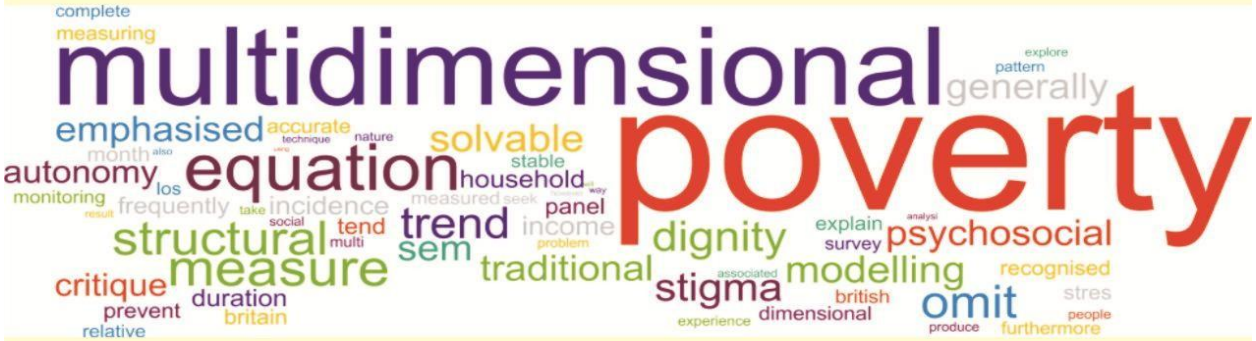

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